Objective: [list] (VXML.2.1) Create mixed initiative dialogs using semantic interpretation and the initial element.
Item: VXML.2.1.a. 1
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
  √
Original Material: x

The purpose of a mixed-initiative dialog is to
    A. Enable the user to choose whether to speak or to use DTMF.
    B. Re-prompt if the user does not respond to a prompt.
    *C. Enable the user to populate multiple recognition fields with values via input to the application.
    D. Enable the user to be transferred to a human agent at any point during the dialog.

Objective: [list] (VXML.2.1) Create mixed initiative dialogs using semantic interpretation and the initial element.
Item: VXML.2. 1.b. 1
Reviewed by: √ MHenry, √ DSchake
Revised Material: x
  √
Original Material: x

During a mixed-initiative dialog, the semantic interpretation language is used to:

A*. Assign a value to the word or phrase returned by the speech recognition system to the appropriate field variable.
B: Allow the user to control the dialog.
C: Allow the system to control the dialog in the case of misrecognitions.
D. Help the system understand what the user is saying.

Objective: [list] (VXML.2.1) Create mixed initiative dialogs using semantic interpretation and the initial element.
Item: VXML.2. 1.c. 1
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
 √
Original Material: x

A mixed-initiative dialog can specify

A: field-level grammars for use in the event that the user does not completely answer a mixed-initiative prompt
B. a form-level grammar that specifies all of the phrases that a user may speak in response to the *initial* prompt.
*C. Both of the above
D. None of the above

Objective: [list] (VXML.2.1) Create mixed initiative dialogs using semantic interpretation and the initial element.
Item: VXML.2.1.d. 1
Reviewed by: X- MHenry, √ DSchake
Revised Material: x
 √
Original Material: x

Given the following semantic interpretation from a grammar match of the user's utterance: "a 2005 C class Mercedes with 5-speed automatic transmission and a V6 engine":

```
{
        car_type: "Mercedes",
        specification: {
        year: "2005",
        class: "C",
        engine: "V6",
        transmission: {
                "automatic",
                "5-speed"
                }
        }
}
```
and given the following field description:
    <field name = "car_type" slot = "specification.transmission">

What value will be assigned to "transmission"?

```
A: {
        year: "2005",
        class: "C",
        engine: "V6",
        transmission: {
                "automatic",
                "5-speed"
                }
```

```
* B: {
                "automatic",
                "5-speed"
                }
```

C: "automatic"

D: "5-speed"

Justification:
A: This is the value assigned to "specification"
C: This is only part of the value assigned to "transmission"
D: This is only part of the value assigned to "transmission"

Given the following semantic interpretation from a grammar match of the user's utterance:
"Book me an economy flight to New York for three people leaving on Monday morning":

```
{
        flight: {
        destination: "NY",
                details: {
        passengers: "3",
        class: "economy",
        departure: {
                "monday",
                "morning"
                }
        }
}
}
```

and given the following field description:
    <field name = "flight" slot = "details.departure">

What value will be assigned to "departure"?

A: "monday"

B: "morning"

C: {
        destination: "NY",
        details: {
        passengers: "3",

```
        class: "economy",
        departure: {
                "monday",
                "morning"
                }
        }
}

*D: {
                "monday",
                "morning"
                }
```

Objective: [list] (VXML.2.1) Create mixed initiative dialogs using semantic interpretation and the initial element.
Item: **VXML.2.1.f. 1**
Reviewed by: √ **MHenry,** √ **DSchake**
Revised Material: x
 √
Original Material: x

Given the following semantic interpretation from a grammar match of the user's utterance: " a single room non smoking with WIFI and TV ":

```
{booking: {
        hotel: {
                details: {
        room: "single",
        non_smoking: "yes",
        facilities: {
                "WIFI",
                "TV"
```

```
                }
            }
    }
    }
    }
```

and given the following field description:

    `<field name = "booking" slot = "details.facilities">`

What value will be assigned to "facilities"?

*A: {
       "WIFI",
       "TV"
       }

B: facilities: {
       "WIFI",
       "TV"
       }

C: {
           details: {
      room: "single",
      non_smoking: "yes",
      facilities: {
         "WIFI",
         "TV"
         }

D: hotel: {
           details: {
      room: "single",
      non_smoking: "yes",
      facilities: {
         "WIFI",
         "TV"
         }
        }
    }

Objective: [list] (VXML.2.2) Create mixed initiative dialogs with system directed fallback.
Item: VXML.2.2.a. 1
Reviewed by: √-MHenry, X-DSchake
Revised Material: x
 √
Original Material: x

Given the following VoiceXML code:

```
<form id = "location">
<grammar src = "cityandstate.grxml" type="application/srgs+xml"/>
<initial name="get_location">
<prompt>Say the city and state</prompt>
</initial>

<field name = "city">
<prompt>what city?</prompt>
</field>

<field name = "state">
<prompt>what state?</prompt>
</field>

</form>
```

Which of the following user-to-IVR dialog interactions can be produced by the above VoiceXML code?

A:

Computer: Say the city and state
Human: San Francisco
Computer: Say the city and state
Human: San Francisco California

B:
Computer: Say the city and state
Human: California
Computer: What state?
Human: California
Computer: What city?
Human: San Francisco

*C:
Computer: Say the city and state
Human: San Francisco
Computer: What state?
Human: California

D:
Computer: Say the city and state
Human: (no response)
Computer: What city?
Human: San Francisco
Computer: What state?
Human: California

Justification:
A: The first human response should trigger the directed dialog prompt "What city?"
B: As city has been recognized in first response, it should not be asked again.
D: If no response, as there is no code to move out of initial, the first prompt should be repeated.

Objective: [list] **(VXML.2.2) Create mixed initiative dialogs with system directed fallback.**
Item: **VXML.2.2.b. 1**
Reviewed by: √ MHenry, √ DSchake
Revised Material: x
  √

Given the following VoiceXML code:

```
<form id = "drinks">
<grammar src = "sizeandtype.grxml" type="application/srgs+xml"/>
<initial name="get_drinks">
<prompt>What drinks? Say size and type.</prompt>
<noinput count="2">

 <assign name="get_drinks" expr="true"/>

</noinput>

</initial>

<field name = "size">
<prompt>what size of drink?</prompt>
</field>

<field name = "type">
<prompt>what type of drink?</prompt>
</field>

</form>
```

Which of the following user-to-IVR dialog interactions can be produced by the above VoiceXML code?

A:
Computer: What drinks? Say size and type.
Human: (no response)
Computer: What drinks? Say size and type.
Human: small
Computer: What drinks? Say size and type.
Human: Small
Computer: What type of drink?
Human: Coke

B:
Computer: What drinks? Say size and type.
Human: (no response)
Computer: What drinks? Say size and type.
Human: (no response)

Computer: What drinks? Say size and type.
Human: (no response)(human hangs up)

C:
Computer: What drinks? Say size and type.
Human: (no response)
Computer: What size of drink?
Human: Small
Computer: What type of drink?
Human: Coke

*D:
Computer: What drinks? Say size and type.
Human: (no response)
Computer: What drinks? Say size and type.
Human: (no response)
Computer: What size of drink?
Human: Small
Computer: What type of drink?
Human: Coke

Justification:
A: After the human's second response the FIA should go to directed dialog with the prompt "What type of drink?"
B: After the second noinput the FIA should go to directed dialog.
C: There should be two noinputs before the FIA goes to directed dialog.

Objective: [list] **(VXML.2.2) Create mixed initiative dialogs with system directed fallback.**
Item: **VXML.2.2.c. 1**
Reviewed by: MHenry, √ DSchake
Revised Material: x
 √
Original Material: x

Given the following VoiceXML code:

<form id = "Tshirt">

```
<grammar src = "sizeandcolor.grxml" type="application/srgs+xml"/>
<initial name="get_shirt">
<prompt>What size and color.</prompt>
<noinput> <assign name="size" expr="true"/></noinput>
</initial>

<field name = "size">
<prompt>what size?</prompt>
</field>

<field name = "type">
<prompt>what color?</prompt>
</field>

</form>
```

Which of the following user-to-IVR dialog interactions can be produced by the above VoiceXML code?

*A:
Computer: What size and color.
Human: small
Computer: What color.
Human: Red

B:
Computer: What size and color.
Human: (no response)
Computer: What size and color.
Human: (no response)
Computer: What size.
Human: Small
Computer: What color.
Human: Red

C:
Computer: What size and color.
Human: (no response)
Computer: What size.
Human: small
Computer: What color.
Human: Red

D:
Computer: What size and color.
Human: Small red

Computer: What size.
Human: small
Computer: What color.
Human: Red

Justification:
B: The FIA will not go to directed dialog in the case of noinput as the value of true is assigned to "size" and not to the initial value of "get_shirt", also this should happen after the first noinput.
C: The FIA will not go to directed dialog in the case of noinput as the value of true is assigned to "size" and not to the initial value of "get_shirt".
D: The human's first input should match the form level grammar and as all fields are finished the FIA should terminate.

Objective: [list] **(VXML.2.3) Select the appropriate properties for speech recognition and bargein.**
Item: **VXML.2.3.a. 1**
Reviewed by: X- MHenry, √-DSchake
Revised Material: x
  √
Original Material: x

What is the impact on speech recognition performance if the 'confidencelevel' property is set to a value higher than the default value of 0.5?

A. The speech recognition accuracy will improve as the input is more likely to be matched.
B. The user will have more control over what is recognized.
C*. There will be fewer false recognitions but more no-match events.
D. The system will be able to understand what the user is saying.

Justification:
A: Increasing the confidence level would lead to more inputs not being matched.
B: This does not give the user more control.

D: This might result in the system not recognizing something that the user said.

Objective: [list] **(VXML.2.3) Select the appropriate properties for speech recognition and bargein.**
Item: **VXML.2.3.b. 1**
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
 √
Original Material: x

What is the purpose of the 'speedvsaccuracy' property?

A. To allow the user to respond more quickly to a prompt.
B*.To enable the developer to specify the desired balance between speed and accuracy of speech recognition.
C. To increase the speed and accuracy of speech recognition.
D. To allow the system to produce recognition results more quickly while retaining accuracy.

Justification:
A: This has no effect on the timing of the user's response.
C: Both are not improved – increasing one reduces the other.
D: Reducing the value returns results more quickly but the accuracy level is reduced.

Objective: [list] **(VXML.2.3) Select the appropriate properties for speech recognition and bargein.**
Item: **VXML.2.3.c. 1**
Reviewed by: √ MHenry, √ DSchake
Revised Material: x
 √

What is the purpose of the 'completetimeout' property?

A. To specify how long to wait for additional speech input if the input does not match a grammar.
B. Throw a noinput event if the user has not spoken after a specified period of silence.
C. To cause the application to exit if the user has exceeded the time allocated to perform the application task.
D*. To specify the amount of time to wait for additional input after the speech recognition engine has recognized speech matching one of the input grammars.

Justification:
A: This refers to incompletetimeout.
B: This refers to timeout.
D: The timeout properties do not have a bearing on the termination of the application.

Objective: [list] (VXML.2.3) Select the appropriate properties for speech recognition and bargein.
Item: VXML.2.3.d. 1
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
 √
Original Material: x

What is the impact on speech recognition performance if the 'sensitivitylevel' property is set to a value higher than the default value of 0.5?

A*. The speech recognition engine will be able to recognize quieter speech but will also pick up more background noise.
B. The speech recognition engine will be less sensitive to noise and will not recognize background noise as words.

C. The speech recognition engine will be highly sensitive to emotional speech.

D. The speech recognition engine will misrecognize input by an angry speaker.

Objective: [list] **(VXML.2.3) Select the appropriate properties for speech recognition and bargein.**
Item: **VXML.2.3.e. 1**
Reviewed by: √-MHenry, √ DSchake
Revised Material: x
  √
Original Material: x

Which dialog fragment below would allow the user to interrupt a prompt as soon as speech or DTMF input is detected?

A. <prompt bargein = "false" bargeintype = "speech"> Welcome to flight reservations. Please answer the following questions. </prompt>.

B*. <prompt bargein = "true" bargeintype = "speech"> Welcome to flight reservations. Please answer the following questions. </prompt>.

C. <prompt bargein = "true" bargeintype = "hotword"> Welcome to flight reservations. Please answer the following questions. </prompt>.

D. <prompt bargein = "false" bargeintype = "hotword"> Welcome to flight reservations. Please answer the following questions. </prompt>.

Given the following VoiceXML code fragment:

```
<form>
<grammar version = "1.0" xmlns=http://www.w3.org/2001/06/grammar xml:lang="en-US" root="top">

    <rule id="top">
       <item> stop now </item>
    </rule>
  </grammar>
<field name = "instructions">
<prompt bargein = "true" bargeintype = "hotword">
Here are some instructions about how to respond. You can say one to go to the next stage, two to hear the instructions, ...
</prompt>
</field>
</form>
```

which of the following can the user speak to interrupt the prompt?

   A. Hotword
   B*. Stop now
   C. (any words)
   D. one

A: The word 'hotword' is not in the grammar.

C: The value of bargeintype would have to be set to 'speech'

D: Digits are not part of the grammar for this field.

Revised/Rewitten Test questions:

Objective: Select appropriate SSML elements and attributes given a particular set of criteria.
Item: VXML.2.4.a.1
Reviewed by: √-MHenry, Dustin - no issues

Which of the following is not a valid SSML Property within VoiceXML:

A. <say-as interpret-as="vxml:currency">
B. <say-as interpret-as="vxml:number">
*C. <say-as interpret-as="vxml:calendardate">
D. <say-as interpret-as="vxml:time">

Justification: The correct syntax for vxml SSML date would be vxml:date rather than calendardate

Objective: Select appropriate SSML elements and attributes given a particular set of criteria.
Item: VXML.2.4.b.1
Reviewed by: X - MHenry, Dustin - revise - Revised

Which of the following is the proper syntax for specifying that the Text-to-Speech output be

rendered as given time?

*A. <say-as interpret-as="time">10:00 AM</say-as>
B. <say-as interpret-as="vxml:time">10:00 AM</say-as>
C. <say-as interpret-as="vxml:datetime">10:00 AM</say-as>
D. <say-as interpret-as="datetime">10:00 AM</say-as>

Justification: The correct syntax for vxml SSML date would be interpret-as=vxml:time

---

Objective: Select appropriate SSML elements and attributes given a particular set of criteria.
Item: VXML.2.4.c.1
Reviewed by:√-MHenry, Dustin - no issues

Which of the following will read out the currency as US dollars?

*A. <say-as interpret-as="vxml:currency">USD20.54</say-as>
B. <say-as interpret-as="vxml:currency" details="US">20.54</say-as>
C. <say-as interpret-as="vxml:currency-USD">20.54</say-as>
D. <say-as interpret-as="vxml:currency" format="US">20.54</say-as>

Justification: The correct syntax for vxml SSML currency would require the type of currency in the string being read out.

Objective: Select appropriate SSML elements and attributes given a particular set of

What element in VoiceXML would allow for the altering of the speed at which the Text-to-Speech being played back is read?

*A. <prosody>
B. <say-as>
C. <emphasis>
D. <phoneme>

Justification: Prosody allows for the speeding up and slowing down of TTS being read back.

Objective: Select appropriate SSML elements and attributes given a particular set of criteria.
Item: VXML.2.4.e.1
Reviewed by: √-MHenry, Dustin - correct D - Revised

Which of the following spoken properties does prosody allow you to alter during TTS playback?

1) Duration of playback
2) Speed of playback
3) Volume of playback
4) Range of Playback

A. 2 and 3
B. 1 and 4
C. 3 and 4
*D. All of the above

Justification: All of these properties can be altered using the prosody element.

Which of the following is proper syntax for inserting a break into the following line of code:

<prompt>
It is sometime useful to insert
[_____] dramatic pauses into sentences.
</prompt>

A. <break strength="small" />
B. <break strength="x-small" />
*C. <break strength="strong" />
D. <break strength="large" />

Justification: Strong is the only proper value that will produce a break.

Given the following VoiceXML code:
 <form>

```
<field name = "age" type = "number"> <prompt> What age? </prompt> </field>
<field name = "weight" type = "number"> <prompt> What weight? </prompt> </field>
<field name = "height" type = "number"> <prompt> What height? </prompt> </field>
<filled>
    <if cond = "age &gt; 70"> <clear namelist = "age"/></if>
    <if cond = "weight &lt; 40"> <clear namelist = "weight"/></if>
</filled>
</form>
```

Given this code, what is a valid sequence of user inputs that results in an implicit <exit> of the Form Interpretation Algorithm?

A: 72 69 152
B: 69 39 152
*C: 72 69 152 67
D: 72 69 152 67 45 56

Justification: Matt: Amended, please check
A: 72 assigned to 'age', 69 to 'weight', 152 to 'height'. As age is greater than 70, system re-prompts for age and another input is required.
B: 69 assigned to 'age', 39 to 'weight', 152 to 'height'. As weight is less than 40, system re-prompts for weight and another input is required.
D: 72 assigned to 'age', 69 to 'weight', 152 to 'height'. As age is greater than 70, system re-prompts for age and another input is required. FIA terminates, inputs 45 and 56 are not required.

Objective: [list] (VXML.3.1) Apply the Form Interpretation Algorithm to a form.
Item: VXML.3.1.b. 1
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
 √
Original Material: x

Given the following VoiceXML code:

<form>

```
        <block><prompt>Welcome to online shopping</prompt> </block>
    <field name = "product_code" type = "digits">
        <prompt>What is the product code? </prompt>
    </field>
    <field name = "quantity" type = "number">
        <prompt> how many? </prompt>
    </field>
    <field name = "size" type = "digits">
         <prompt> what size? </prompt>
    </field>
    <filled>
        <if cond = "size &gt; 20" type = "number">
             <clear namelist = "size"/>
             <prompt> The size is too high </prompt>
        </if>
    </filled>
</form>
```

Complete the following dialog so that the form is completed after the final response by the human:

Computer: Welcome to online shopping. What is the product code?
Human: three seven six
Computer: How many?
Human: three
Computer: What size?
Human: twenty two
[_____]

    A: Computer: The size is too high. Welcome to online shopping. What is the product code?
     Human: three seven six
    *B: Computer: The size is too high. What size?
     Human: nineteen
    C. Computer: The size is too high. What size?
      Human: twenty one

    D. Computer: The size is too high. Welcome to online shopping. What is the size?
      Human: nineteen

Justification:
A: The code in <block> should not be repeated when the FIA loops. Only the 'size' question should be asked.
C: The form will not be complete after the final response as the condition will cause the 'size'

question to be asked again.
D: The code in <block> should not be repeated when the FIA loops.

Given the following VoiceXML code:

```
<form>
    <field name = "A" type = "number">
        <prompt> What is A? </prompt>
        <filled>
            <if cond = "A &gt; 5">
                <assign name = "B" expr = "17"/>
            </if>
        </filled>
    </field>
    <field name = "B" type = "number"> <prompt> What is B? </prompt> </field>
    <field name = "C" type = "number" cond = "B != 17">
        <prompt> What is C?</prompt>
    </field>
</form>
```

If the user's response to the prompt "What is A?" by speaking the value 6, How many additional prompts will the user hear?

    *A: 0
    B: 1
    C: 2
    D: More than 2

Objective: Identify the use of scope in a VoiceXML application as it applies to variables, events and grammars.
Item: VXML.3.2.a.1
Reviewed by: √-MHenry, Dustin - see review notes - Revised

From the following block of code, what will be rendered out to the caller in text-to-speech when the application executes?

```
<vxml version="2.1">
<var name="output" expr="'foo'" />
<form id="F1">
        <block>
                <prompt>
                        <value expr="output" />.
                </prompt>
                <assign name="output" expr="'bar'" />
                <prompt>
                        <value expr="output" />.
                </prompt>
        </block>
</form>
</vxml>
```

A) foo
B) bar
C) bar foo
* D) foo bar

In order to catch a connection.disconnect.hangup successfully what container, denoted by _____, must be present within the form being executed?

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version = "2.1">

<catch event="connection.disconnect.hangup">
  <exit/>
</catch>

<form>
  <_____ name="dummy">
  <property name="timeout" value="1s" />

  <!-- Create a 'garbage' grammar that will never get a match -->
  <grammar xml:lang="en-us" root = "dummy">
        <rule id="dummy">
        <item> This will never be matched successfully</item>
        </rule>
  </grammar>

  <filled>
        <prompt> This prompt should never succeed. </prompt>
  </filled>


  </_____>
</form>
</vxml>
```

A) <catch>
*B) <field>
C) <filled>
D) <disconnect>

Which of the following elements will render out Text-to-Speech the value that was interpreted by the user for the given prompt and grammar?

```
<vxml version="2.1">
<form>
<field name="F_2">
  <grammar xml:lang="en-us" version="1.0" root="myrule" mode="voice">
        <rule id="myrule">
        <item>
        Not a chance.
        </item>
        </rule>
</grammar>

  <prompt>
        Is there anything more fun than tests?
  </prompt>
</field>

<filled mode="all" namelist="F_1">
  <prompt>
        You are right.  [ _____ ]
  </prompt>
 </filled>
</form>
</vxml>
```

A) <data expr="F_2">
B) <data expr="F_1">
*C) <value expr="F_1" />
D) <value expr="F_2" />

Which variable(s) will result in an error when used in the prompt within the block labeled as "second"

```
<vxml version="2.1">
<var name="A1" expr="ape" />
<form id="F1">
<var name="B1" expr="bat" />
        <block name="first">
                <var name="C1" expr="cat" />
        </block>
        <block name="second">
        <var name="D1" expr="dog" />
                <prompt>
                _____
                </promot>
        </block>
</form>
</vxml>
```

A) A1 and C1
B) A1 and D1
C) D1
*D) C1

For catching errors and other events, where would catch event be placed if you wanted to have the catch available for all container objects?

```
<?xml version="1.0" encoding="UTF-8"?>
  [ ____ A ____ ]
        <vxml version="2.1">
        [ ____ B ____ ]
              <form id="F1">
              [ ____ C ____ ]
                    <block>
              [ ____ D ____ ]
                          <prompt>
                                Hello World
                          </prompt>
                    </block>
              </form>
        </vxml>
```

A) Inside the <xml> but outside the <vxml>
*B) Inside the <vxml> but outside the <form>
C) Inside the <form> but outside the <block>
D) Inside the <block> but outside the <prompt>

Given the code fragment below:

```
<grammar xml:lang="en-us" root="myrule">
        <rule id="myrule" scope="public">
                <item>
                        Yes
                </item>
        </rule>
</grammar>

<field name="F_1" modal="false">
        <grammar xml:lang="en-us" root="myrule">
                <rule id="myrule">
                        <item> Nope </item>
                </rule>
        </grammar>
        <filled>
                <prompt>
                        Not as easy as it looks is it?
                </prompt>
        </filled>
</field>

<field name="F_2" >
        <grammar xml:lang="en-us" root="myrule">
                <rule id="myrule">
                        <item> Maybe </item>
                </rule>
        </grammar>
        <filled>
                <prompt> Thats true</prompt>
        </filled>
</field>
```

What user input will trigger execution of the <filled> element?

*A) Yes & Maybe
B) No & Maybe
C) Yes & No
D) None of the above

What element is used to catch and process input from a recognition grammar?

A) The <form> element
B) The <subdialog> element
*C) The <filled> element
D) The <catch> element

Justification:

Considering the following VoiceXML application:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

 [ _____ ]
 <field name="collectData">
  <grammar src="myGrammar.xml" type="application/grammar-xml" />
  <prompt>
   Please provide your pin code.
  </prompt>
```

```
 <filled>
  <goto next="newDocument.xml"/>
 </filled>
</field>

[ _____ ]
</vxml>
```

What element should be added to the blanks above to ensure that the dialog executes correctly?

A) The <subdialog> element
B) The <menu> element
C) The <vxml> element
*D) The <form> element

Justification:

Which elements allow the developer to denote a document or dialog scope for grammars via an attribute value?

A) form, field, and grammar
*B) form, menu, and grammar
C) subdialog, menu, field, grammar
D) vxml, and form

Justification: Only form, menu, and grammar have allowable "scope" attributes.

Which VoiceXML elements qualify as "input items"?

A) field, menu, link, and subdialog
*B) field, record, transfer, and subdialog
C) grammar, and link
D) field, record, and link

Justification: See VXML 2.0 specification section 2.1.2.1. Note that <object> is purposely disincluded.

Which VoiceXML element and attribute combination would be used to activate a built-in grammar to collect a number value from a user?

A) <field expr="number">
B) <field slot="number">
C) <field grammar="number">
*D) <field type="number">

Justification: VXML 2.0 specifaction section 2.3.1, and Appendix P.

menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)
Item: VXML.3.3.f
Reviewed by: Garrett King - No problems, Dustin - no issues

Which VoiceXML element is used to invoke a new dialog (either within the same document or within an entirely new document) within an entirely separate execution context?

A) <block>
B) <field>
C) <menu>
* D) <subdialog>

Justification: VXML specification section 2.3.4

Objective: Identify the structure of the major elements of a VoiceXML application. (eg.
menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)
Item: VXML.3.3.g
Reviewed by: Garrett King

Which of the below code fragments would be used to perform an outbound call attempt to another party within a VoiceXML application?

A) <goto next="tel:+14072223333">
*B) <transfer dest="tel:+14072223333">
C) <subdialog next="tel:+14072223333">
D) <link next="tel:+14072223333">

Justification:

Objective: Identify the structure of the major elements of a VoiceXML application. (eg.
menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)

What is the most appropriate element to use when rendering text-to-speech to a user in a VoiceXML application:

A) <audio>
B) <record>
C) <grammar>
*D) <prompt>

Justification: Note that <audio> *can* be used to encapsulate TTS on most platforms, the *best & most adherent* to the VXML specification is to enclose TTS within a <prompt> element.

Objective: Identify the structure of the major elements of a VoiceXML application. (eg. menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)
Item: VXML.3.3.i
Reviewed by: Garrett King - No problems, Dustin - no issues

Under what conditions can a <block> element be executed within a VoiceXML application?

* A) It's condition must evaluate to "true", and it's expression must equate to ECMAScript undefined.
B) It's modal must be set to "true", and it's condition must evaluate to ECMAScript undefined.
C) It's type must be set to "true".
D) It must contain executable content, such as a <prompt> or <goto>.

Justification: VXML specification section 2.3.2. Of course, a <block> *can* still be executed even if it lacks executable content within it.

Objective: Identify the structure of the major elements of a VoiceXML application. (eg.

What VoiceXML elements activate a platforms speech recognizer component to listen to words and patterns input by a user?

A) <grammar>, <menu>, <value>, <choice>,
B) <grammar>, <option>, <menu>, <field>
*C) <grammar>, <option>, <choice>, <field>
D) <grammar>, <menu>, <choice>,<option>,

Justification: Note that <link> and <menu> do not have an inherent method to define *voice* input grammars, only dtmf.

Objective: Identify the structure of the major elements of a VoiceXML application. (eg. menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)
Item: VXML.3.3.k
Reviewed by: Garrett King - No problems, Dustin - no issues

What is the best methodology to use in order to define the document-scoped values for language and locale used by the text-to-speech and speech recognizer engines?

A) <form xml:lang="en-us">
*B) <vxml xml:lang="en-us">
C) <grammar xml:lang="en-us">
D) <vxml base="en-us">

Justification:

Objective: Identify the structure of the major elements of a VoiceXML application. (eg.

menu, form, field, transfer, subdialog, grammar, prompt, block, filled, vxml, catch, link)
Item: VXML.3.3.L
Reviewed by: Garrett King - No problems, Dustin - no issues

Considering the following application:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">


<catch event="error.semantic">
 <audio src="semantic_error.wav"/>
</catch>

<catch event="error.badfetch">
 <audio src="badfetch404_error_1.wav"/>
</catch>


<form id="F1">
 <catch event=error.badfetch.404">
  <audio src="badfetch404_error_2.wav"/>
 </catch>

 <block>
 <error>
  <audio src="error.wav"/>
 </error>


  <prompt>
   Preparing to go to another document.
  </prompt>
 <!-- URL below returns a http 404 response code -->
  <goto next="unreachableURL.xml" />
 </block>
</form>
</vxml>
```

What audio file is rendered to the user when the document fetch fails?

* A) "error.wav"
B) "semantic_error.wav"
C) "badfetch404_error_1.wav"
D) "badfetch404_error_2.wav"

Justification: Events are always trapped where locally-scoped handlers take precedence.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.a.1
Reviewed by: √-MHenry, Mike McTear √, Dustin Hayre √

Which of the following statements best describes the purpose of the <menu> element?

A. An element that duplicates the functionality of accepting DTMF responses to navigate through different prompt options.

*B. An element that duplicates the functionality of the field, grammar and goto elements.

C. An element that duplicates the functionality of providing multiple prompts for one field element.

D. An element that duplicates the functionality of the form, block and prompt elements.

Justification for correct answer: The menu element is a substitution for the combination of field grammar and goto elements.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.b.1
Reviewed by: √-MHenry, *Mike McTear* √, *Dustin Hayre* √

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.b.1

Given the following code fragment:

```
<form id="Form1">
  <record name="RECORDING" beep="true" finalsilence="3s">
    <prompt>
      Please state your name after the tone.
    </prompt>
    <filled>
     <prompt>Your name is <value expr="RECORDING"/></prompt>
    </filled>
  </record>
</form>
```

What is stored in the RECORDING variable and what happens to the

contents of the variable at the end of the application?

A. A TTS translation of the spoken audio is stored in the RECORDING variable and it can be submitted with a get request in the name list at the end of the application.

B. A TTS translation of the spoken audio is stored in the RECORDING variable and it is stored on the local server for retrieval at a later time.

*C. An audio recording is stored in the RECORDING variable and it must be explicitly submitted via a post method prior to the end of the application or the audio is lost.

D. An audio recording is stored in the RECORDING variable and it is stored on the local server for retrieval at a later time.

Justification for correct answer: The record element captures spoken audio from the caller and stores it in a variable. The audio is stored until the application exits and is lost unless it is submitted to an external source.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.c.1
Reviewed by: √-MHenry, *Mike McTear* √, *Dustin Hayre* √

What is the purpose of the <field> element?

*A. To collect an input item from the user.

B. To define a VXML variable.

C. To define a grammar which the interpreter will use to match spoken input.

D. To allow the developer to detail actions to take when a grammar is matched.

Justification for correct answer: The field element is used to collect information from the user in a dialog.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.d.1
Reviewed by: √-MHenry, *Mike McTear* √, *Dustin Hayre* √

Given the following code fragment:

```
<form id="Form1">
   <transfer name="TRANSFER" type="bridge" dest="tel:+18005551212">
      <filled>
         <if cond="TRANSFER == 'busy'">
           <prompt>Destination is busy</prompt>
            <exit/>
         </if>
         <if cond="TRANSFER == 'noanswer'">
            <prompt>No answer at the destination</prompt>
            <exit/>
         </if>
      </filled>
   </transfer>
   <block>
      <goto next="Form2"/>
   </block>
</form>
```

What best describes how the application will execute?

 A. The call was transferred to 18005551212 and then the application exited.

 B. The call was transferred to 18005551212 .The destination was busy or no one answered, the appropriate prompt was played and then application exited. If the destination answered the application exited.

*C. The call was transferred to 18005551212. If the destination was busy or no one answered the appropriate prompt was played and the application exited. If the destination answered the application continued to Form2 when the transfer was completed.

D. The call was transferred to 18005551212. If the destination was busy or no one answered the appropriate prompt was played and the application continued to Form2. If the call was answered the application exited.

Justification for correct answer: A bridged transfer allows for execution to continue after the transfer has completed. If the far end of the transfer is busy or is unanswered the application will play a prompt and exit. If the call is answered the application will continue to Form2 when the transfer completes.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.e.1
Reviewed by: √ - MHenry *Mike McTear* √, *Dustin Hayre* √

What is the purpose of the <prompt> element?

 A. To output audio file content to caller.

*B. To output text-to-speech to the caller.

 C. To capture voice or DTMF input from the caller.

 D. To provide a tone indicating the start of a recording.

Justification for correct answer: The prompt element is used to output TTS to the caller.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)

What is the purpose of the <block> element?

*A. A container for executable content.

B. A wrapper element for playing multiple prompts.

C. To block application execution until user input is received.

D. To assign a value to a VXML variable.

Justification for correct answer: The block element is used to wrap executable content where the parent element would not permit it.

Which of these statements best describes the purpose of the <filled> element?

A. Enables a dialog that instructs the interpreter collect information from the user.

*B. Denotes actions to take when a user-input grammar is matched.

C. Denotes actions to take when a VXML variable is assigned a value.

D. Indicates a value to be assigned to a VXML variable.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.h.1
Reviewed by: √-MHenry *Mike McTear* √, *Dustin Hayre* √

Which of these statements best describes the purpose of the <vxml>
element?

 A. An element which encapsulates all field items and all control items.

 B. Enables a dialog that instructs the interpreter collect information from the user.

*C. States that a document is a VoiceXML application.

 D. A container element for defining all application level scoped variables.

Justification for correct answer: The VXML element is the root element of a document that denotes it as a VoiceXML application.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.i.1
Reviewed by: X MHenry, *Mike McTear* √, *Dustin Hayre* √

Which of these statements best describes the purpose of the <form> element?

*A. An element which encapsulates all field items and all control items.

B. Enables a grammar that instructs the interpreter to collect information from the user.

C. Denotes actions to take when a grammar is matched.

D. An element used to call another dialog to provide a method for reusing common dialogs.

Justification for correct answer: B is a bogus answer. C and D describe other elements.

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.j.1
Reviewed by: √ -MHenry Mike McTear √, *Dustin Hayre* √

Given the following code fragment:

```
<form id="Form1">
   <field name="NUMBER" type="digits?minlength=1;maxlength=1">
     <prompt>Please enter a number from 0 to 9</prompt>
     <catch event="noinput nomatch">
        <reprompt/>
     </catch>
     <filled>
        <assign name="Number" expr="lastresult$.interpretation"/>
        <goto next="#Form2"/>
     </filled>
   </field>
</form>
```

Which of these statements best describes the purpose of the <catch> element?

A. It captures the user input and stores it for the filled element where it is assigned to the VXML variable
   "Number".

B. It captures the user input and if the user enters a number from 0 to 9 the prompt is played again.

*C. If there is no user input or the digits grammar is not matched it captures the noinput or nomatch event
   and the prompt is played again.

D. If there is no user input or the digit grammar is not matched it captures the noinput or nomatch event
   and application execution moves on to Form2.

Justification for correct answer:

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.k.1
Reviewed by: √-MHenry Mike McTear √, *Dustin Hayre* √

Which of these statements best describes the purpose of the <reprompt> element?

A. To repeat the most recent prompt a specified number of times.

*B. To play the most recent prompt again and begin listening for caller input again.

C. To play the most recent prompt again and skip caller input.

D. To repeat the next prompt a specified number of times.

Justification for correct answer:

Objective: (VXML 3.4) Identify the purposes of the elements of a VoiceXML application. (eg. menu, record, form, field, transfer, subdialog, grammar, prompt, reprompt, block, filled, vxml, catch, link)
Item: 3.4.I.1
Reviewed by: √ - MHenry Mike McTear √, *Dustin Hayre* √

Which of these statements best describes the purpose of the <subdialog> element?

 A. Denotes a second dialog inside a field element that lets the interpreter collect information from the user.

 B. Executes an application or document scoped grammar and event handler for caller input.

*C. Used to call a dialog to provide a means for reusing common dialogs within an independent application
     context.

 D. Defines an application scoped dialog that can be called from any field element within the application
     context.

Justification for correct answer:

Given the following code fragment choose the correct field attribute to fill in the block so that an ECMAScript variable contains the result:

```
<form id="Form1">
  <field [_____] type="boolean">
        <prompt> Please say yes or no </prompt>
        <filled>
         <prompt>You said <value expr="ANSWER"/></prompt>
        </filled>
  </field>
</form>
```

A. expr="ANSWER"

B. cond="ANSWER"

C. id="ANSWER"

*D. name="ANSWER"

Justification for correct answer:

Given the following code fragment choose the correct field attribute to fill in the block so that the field is visited:

```
<form id="Form1">
  <field name="ANSWER" [_____] type="boolean">
   <prompt> Please say yes or no </prompt>
   <filled>
     <prompt>You said <value expr="ANSWER"/></prompt>
   </filled>
  </field>
</form>
```

 A. cond=""

 B. cond="visit"

*C. cond="true"

 D. cond="false"

Justification for correct answer:

Given the following code fragment choose the correct choice attribute to fill in the block so that when choice one is matched the execution proceeds to Form_1:

```
<menu id="MENU_1">
  <prompt> Say choice one to proceed to form one. </prompt>
  <choice [_____]>
    Choice one
  </choice>
</menu>

<form id="Form_1">
  <block>
    <prompt> In form one. </prompt>
  </block>
</form>
```

 A. expr="#Form_1"

 B. goto="#Form_1"

*C. next="#Form_1"

D. event="#Form_1"

Objective: (VXML.3.5.0) Use the attributes of VoiceXML elements. (eg. Name within field, Next within choice, cond within a field, next within goto)
Item: VXML.3.5.0.d.1
Reviewed by: √ - MHenry Mike McTear √, Dustin Hayre √

Given the following code fragment choose the correct choice attribute to fill in the block so that the Choice1Event is caught:

```
<catch event="Choice1Event">
  <prompt> Choice one event caught. </prompt>
</catch>

<menu id="MENU_1">
  <prompt> Say choice one to trigger the catch event. </prompt>
  <choice [_____]>
   Choice one
  </choice>
  <choice next="#Form1">
   Choice two
  </choice>
</menu>

<form id="Form_1">
  <block>
   <prompt> In form one. </prompt>
```

```
    </block>
  </form>
```

*A. event="Choice1Event"

 B. goto="Choice1Event"

 C. next="Choice1Event"

 D. fire="Choice1Event"

Justification for correct answer:

Objective: (VXML.3.5.0) Use the attributes of VoiceXML elements. (eg. Name within field, Next within choice, cond within a field, next within goto)
Item: VXML.3.5.0.e.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Given the following code fragment choose the correct goto attribute to fill in the block so that execution proceeds to Form2:

```
<form id="Form1">
  <block>
    <prompt>
      Thank you for taking the VoiceXML Developer Certification.
    </prompt>
    <goto [_____]/>
  </block>
</form>

<form id="Form2">
  <block>
    <prompt>Goodbye.</prompt>
  </block>
```

</form>

A. expr="Form2"

*B. next="#Form2"

C. expr="#Form2"

D. next="Form2"

Given the following code fragment choose the correct goto attribute to fill in the block so that execution proceeds to Form2:

```
<var name="nextForm" expr="'#Form2'"/>
<form id="Form1">
  <block>
   <prompt>
     Thank you for taking the VoiceXML Developer Certification.
   </prompt>
   <goto [_____]/>
  </block>
</form>
```

```
<form id="Form2">
  <block>
    <prompt>Goodbye.</prompt>
  </block>
</form>
```

A. expr="#nextForm"

B. next="nextForm"

*C. expr="nextForm"

D. next="#nextForm

Justification for correct answer:

Given the following code fragment choose the correct attribute so that execution continues to the value of the variable.

```
<var name="nextForm" expr= "'#Form2'"/>

<form id="Form1">
  <field name="NUMBER" type="digits?minlength1;maxlength2">
    <prompt> Please enter a number between 0 and 99 </prompt>
    <filled>
      <prompt> Your number is <value expr="NUMBER"/></prompt>
```

```
      <goto [_____]/>
    </filled>
  </field>
</form>
```

A. name="nextForm"

B. value="nextForm"

*C. expr="nextForm"

D. next="nextForm

Justification for correct answer:

Given the following code fragment choose the correct attribute so that execution continues to Form2 if the entered value is greater than 50.

```
<form id="Form1">
  <field name="NUMBER" type="digits?minlength=1;maxlength=2">
   <prompt> Please enter a number between 0 and 99 </prompt>
   <filled>
    <prompt> Your number is <value expr="NUMBER"/></prompt>
    <if [_____]>
     <goto next="Form2"/>
    </if>
        <goto next="Form3"/>
   </filled>
  </field>
</form>
```

A. value="NUMBER > 50"

*B. cond="NUMBER > 50"

C. expr="NUMBER > 50"

D. NUMBER="> 50"

Justification for correct answer:

Given the following code fragment choose the correct code block so that execution continues to Form2 if the entered value is between 20 and 40 and Form3 if the number is greater than 50.

```
<form id="Form1">
  <field name="NUMBER" type="digits?minlength=1;maxlength=2">
   <prompt> Please enter a number between 0 and 99 </prompt>
    <filled>
     <prompt> Your number is <value expr="NUMBER"/></prompt>
     [_____]
    </filled>
  </field>
</form>
```

A. <if expr="NUMBER > 20 && NUMBER < 40">
   <goto next="#Form2"/>
  <elseif expr="NUMBER > 50"/>
   <goto next="#Form3"/>

   <goto next="#Form4"/>
  </if>

B. <if value="NUMBER > 20 && NUMBER < 40">
   <goto next="#Form2"/>
  <elseif value="NUMBER > 50"/>
   <goto next="#Form3"/>

   <goto next="#Form4"/>
  </if>

*C. <if cond="NUMBER >= 20 && NUMBER <= 40">
   <goto next="#Form2"/>
  <elseif cond="NUMBER > 50"/>
   <goto next="#Form3"/>

   <goto next="#Form4"/>
  </if>

D. <if cond="NUMBER < 20 && NUMBER > 40">
   <goto next="#Form2"/>
  <elseif cond="NUMBER > 50"/>
   <goto next="#Form3"/>

   <goto next="#Form4"/>
  </if>

Justification for correct answer:

Given the following code fragment choose the correct code block to insert so that execution skips to Form2 without executing any of the code in Form1 if the value of a variable myVar is "blue".

```
<form id="Form1">
 <block>
   [_____]
 </block>
 <field name="NUMBER" type="boolean">
   <prompt> Please say yes or no </prompt>
   <filled>
     <prompt> You said <value expr="NUMBER"/></prompt>
   </filled>
 </field>
</form>
```

A. `<goto cond="myVar=='blue'" next="#Form2"/>`

B. `<if value="myVar=='blue'">`
   `<goto next="#Form2"/>`
   `</if>`

C. `<if expr="myVar=='blue'">`
   `<goto next="#Form2"/>`
   `</if>`

*D. `<if cond="myVar=='blue'">`
   `<goto next= "#Form2"/>`
   `</if>`

Justification for correct answer: A. <goto> does not have a condition attribute.
B. <if> does not have a value attribute.
C. <if> does not have an expr attribute.

Objective: (VXML.3.6.0) Use expressions and conditions to alter the execution of a
VoiceXML application, change variable values and perform conditional processing.
(e.g. Expr attribute, cond attribute, if/else/elseif, block, filled)
Item: VXML.3.6.0.e.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Given the following code fragment choose the correct code block to insert so that the filled element is visited only if both fields are filled.

```
<form id="Form1">
 <field name="ANSWER1">
  <grammar xml:lang="en-us" root="color">
       <rule id="color">
     <one-of>
       <item> Red   </item>
       <item> Green </item>
       <item> Blue  </item>
     </one-of>
    </rule>
  </grammar>

  <prompt>
    Which color do you favor Red, Green or Blue?
  </prompt>
 </field>

 <field name="ANSWER2" type="boolean">
  <prompt>
    Do you like fruit?
  </prompt>
 </field>

 [_____]

</form>
```

A. <filled>
   <prompt> You answered both questions. </prompt>
   </filled>

B. <filled expr="ANSWER1 && ANSWER2">
      <prompt> You answered both questions. </prompt>
   </filled>

*C. <filled namelist="ANSWER1 ANSWER2">
   <prompt> You answered both questions. </prompt>
   </filled>

D. <filled cond="ANSWER1 && ANSWER2">
    <prompt> You answered both questions. </prompt>
   </filled>

Justification for correct answer: A. Does not distinguish that both questions were answered.
B. <filled> does not have an expr attribute.
D. <filled> does not have a cond attribute.

Given the following code fragment choose the correct attribute so that the prompt is visited.

```
<form id="Form1">
  <block>
    <prompt [_____]> Thank you for your time.  Goodbye. </prompt>
  </block>
</form>
```

A. cond=""

B. cond="visit"

C. cond="false"

*D. cond="true"

Justification for correct answer: The cond attribute must be true for the prompt to be visited

Given the following code fragment, what will happen when "I don't know" is uttered after the prompt "Are you sure your ready?"

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<vxml version="2.1">

<form id="F1" scope="document">
<grammar xml:lang="en-us" root="firstrule" scope="document">
   <rule id="firstrule">
        <item>
        I don't Know
        <tag> out.MySlot="unsure"</tag>
        </item>
   </rule>
</grammar>

   <field name="F_1">
   <grammar xml:lang="en-us" root="secondrule">
        <rule id="secondrule">
                <item> Definitely </item>
        </rule>
   </grammar>

        <prompt>
                Are you sure you're ready?
        </prompt>
   </field>

   <filled namelist="F_1">
        <goto next="#F2" />
   </filled>

</form>

<form id="F2">
   <block>
```

```
        <prompt>
                Thats the spirit
        </prompt>
        <exit/>
    </block>
</form>

<form id="F3">
    <block>
        <prompt>
                Do or do not.
        </prompt>
    </block>
</form>
</vxml>
```

A) Silence and the application will exit
B) The application will reprompt due to no match in the grammar
C) The prompt "Do or do not" will be played
*D) The prompt "Thats the spirit" will be played

Objective: Use grammar scoping and field modality to constrain user input.
Item: VXML.3.7.b.1
Reviewed by: √ -MHenry, Dustin -no issues

Given the following code snippet, what will happen when "Definitely" is uttered after the prompt "Are you sure you're ready?"

```
<?xml version="1.0" encoding="UTF-8" ?>
<vxml version="2.1">

<form id="F0">
<grammar xml:lang="en-us" root="myrule" scope="document">
    <rule id="myrule">
        <item>
        I don't Know
        <tag> out.MySlot="unsure";</tag>
```

```xml
        </item>
    </rule>
</grammar>

<filled namelist="MySlot">
    <goto next="#F3" />
</filled>

<form>
<form id="F1">
    <field name="F_1">
    <grammar xml:lang="en-us" root="myrule">
        <rule id="myrule">
                <item> Definitely </item>
        </rule>
    </grammar>

        <prompt>
                Are you sure your ready?
        </prompt>
    </field>

    <filled namelist="F_1">
        <prompt>
                You said it.
        </prompt>
    </filled>

    <field name="MySlot" />
</form>

<form id="F2">
    <block>
        <prompt>
                Thats the spirit
        </prompt>
        <exit/>
    </block>
</form>

<form id="F3">
    <block>
        <prompt>
                Do or do not
```

```
            </prompt>
        </block>
    </form>
</vxml>
```

A) Silence and the application will exit
B) The application will reprompt due to no match in the grammar
C) The prompt "Do or do not" will be played
*D) The prompt "You said it" will be played

Given the blow xml application, *what will occur when the caller says "morning" during execution of field "F2"?*

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

<form id="F1">
    <field name="F_1">
        <grammar xml:lang="en-us" version="1.0" root="myrule" mode="voice">
            <rule id="myrule"><item>morning</item></rule>
        </grammar>
        <prompt>
            Whats the best time to go for a run? Morning, afternoon or night?
        </prompt>
        <filled>
            <prompt>
                Interesting
            </prompt>
        </filled>
    </field>

    <field name="F_2">
        <grammar xml:lang="en-us" version="1.0" root="myrule" mode="voice">
```

```
                    <rule id="myrule"><item>Not at all</item></rule>
        </grammar>
                <prompt>
                        Are you sure?
                </prompt>

                <filled>
                        <prompt>
                                Well, thats your opinion.
                        </prompt>
                </filled>
    </field>
</form>
</vxml>
```

*A) TTS will output "Interesting"
B) Silence
C) The application will exit
D) TTS will output "Well, thats your opinion"

Objective: Use grammar scoping and field modality to constrain user input.
Item: VXML.3.7.d.1
Reviewed by: √-MHenry - Revised

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

        <link dtmf="2" event="helping">
                <grammar mode="voice" version="1.0" root="r5">
                <rule id="rh" scope="public">
                <one-of>
                        <item>help</item>
                </one-of>
                </rule>
                </grammar>
        </link>
```

```
        <catch event="helping">
                <prompt>
                        That wasnt so hard.
                </prompt>
        </catch>

<form id="F_1">
        <field>
                <prompt>
                If you need help simply ask.
                </prompt>

                <grammar xml:lang="en-us" root="TOPLEVEL">
                        <rule id="TOPLEVEL">
                        <item>
                                Dummy
                        </item>
                        </rule>
                </grammar>

        </field>
</form>
</vxml>
```

Given the above code, what input will result in the link grammar being triggered?

A) Helping and DTMF input of 2
*B) Help and DTMF input of 2
C) Help and Helping
D) Help, Helping or DTMF input of 2

What would occur when "Lets go" is uttered by the user during dialog execution?

```xml
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">
        <link next="MyNextPage.vxml">
        <grammar xml:lang="en-us" root="TOPLEVEL">
                <rule id="TOPLEVEL">
                        <item>
                                Lets go!
                        </item>
                </rule>
        </grammar>
    </link>

    <form id="F1">
        <field name="F_1">
                <prompt>
                        Would you like to leave the page?
                </prompt>
                <grammar xml:lang="en-us" root="myrule">
                        <rule id="myrule">
                                <item>
                                        Yes
                                        <tag>out.F_1 = "dummy"</tag>
                                </item>
                        </rule>
                </grammar>
        </field>

        <filled>
                <prompt>
                        Leaving at warp nine
                </prompt>
        </filled>
    </form>
</vxml>
```

*A) The application would transition to MyNextPage.vxml
B) Silence followed by a reprompt of the field
C) TTS would respond with "Leaving at warp nine"
D) The application would exit.

Given the following VoiceXML document, what utterance(s) would result in a valid match for the active grammars in the field "F_1"?

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">
        <link next="MyNextPage.vxml">
        <grammar xml:lang="en-us" root="TOPLEVEL">
                <rule id="TOPLEVEL">
                        <item>
                                one
                        </item>
                </rule>
        </grammar>
    </link>

    <form id="Form1">
                <grammar xml:lang="en-us" root="myrule">
                        <rule id="myrule">
                                <item>
                                        two
                                </item>
                        </rule>
                </grammar>
                <block>
                 <goto next="#Form2"/>
                </block>
    </form>

    <form id="Form2">
                <grammar xml:lang="en-us" root="myrule">
                        <rule id="myrule">
                                <item>
                                        three
                                </item>
                        </rule>
                </grammar>
        <field name="F_1">
```

```
            <prompt>
                    How many fingers am I holding up?
            </prompt>
            <grammar xml:lang="en-us" root="myrule">
                    <rule id="myrule">
                            <item>
                                    four
                            </item>
                    </rule>
            </grammar>
    </field>

    <filled>
            <prompt>
                    "Can I put <value expr="F_1"/>  fingers in your belly button?"
            </prompt>
    </filled>
  </form>
</vxml>
```

A) One and Four
* B) One, Three and Foud
C) Two and Four
D) Two and Three

Considering the following grammar fragment:

<item>

Mumbai Airport
  <tag> out="BOM";</tag>
</item>

What application variable would be used to access the returned slot value upon a user input that matches the defined utterance?

* A) lastresult$.interpretation
B) lastresult$.utterance
C) lastresult$.confidence
D) lastresult$.inputmode

Justification:

Which shadow variables are available in the application execution context upon an event being thrown, and then trapped within a <catch> handler?

A) "_cond", and "_event"
*B) "_event", and "_message"
C) "_confidence", and "_slot"
D) "_next", and "_eventexpr"

Justification:

What shadow variables are populated with values upon the completion of a bridged call between two parties?

A) [name]$.interpretation, [name]$.duration, [name]$.inputmode
*B) [name]$.duration, [name]$.utterance, [name]$.inputmode
C) [name]$.confidence, [name]$.inputmode, [name]$.duration
D) [name]$.size, [name]$.duration, [name]$.recording

Justification: VXML specification section 2.3.7.1

Objective: Use shadow variables and standard application variables. (e.g. disambiguate user input, return a confidence score)
Item: VXML.3.8.d
Reviewed by: Garrett King - No problems, Dustin - no issues

In cases where user input matches multiple utterances within a grammar, the interpreter will always select the one:

A) With the highest lastresult$.inputmode score
B) With the lowest lastresult$.confidence score
*C) With the highest lastresult$.confidence score
D) With the lowest lastresult$.interpretation score

Justification:

Objective: Use shadow variables and standard application variables. (e.g. disambiguate user input, return a confidence score)
Item: VXML.3.8.e

Upon a successful input to a <record> dialog, the following shadow variables are available upon completion of input:

A) lastresult$.confidence, lastresult$.interpretation, lastresult$.confidence
B) lastresult$.confidence, lastresult$.duration, lastresult$.size
* C) lastresult$.duration, lastresult$.size, lastresult$.maxtime, lastresult$.termchar
D) lastresult$.duration, lastresult$.method, lastresult$.inputmode

Justification: VXML specification section 2.3.6

In a VoiceXML dialog that contains the <mark> element, which shadow variables will be defined upon a barge-in to a voice prompt?

A) marksize, markconfidence
B) markaudio, marktime
C) markduration, marksize
*D) markname, marktime

Justification: VXML 2.0 specification, section 4

The "session.connection.remote.uri" application variable will trap information about the call session pertaining to:

*A) The caller ID value
B) The called ID value
C) The type of internet connection that the call session uses (http versus https)
D) Application-to-application information transmitted from the called party.

Justification:

The "session.connection.local.uri" application variable will trap information about the call session pertaining to:

A) The caller ID value
*B) The called ID value
C) The type of internet connection that the call session uses (http versus https)
D) Application-to-application information transmitted from the called party.

Justification:

Application information sent during connection setup can be accessed by the [_____] session variable.

A) session.application.root
B) session.connection.id
*C) session.connection.aai
D) session.connection.originator

Justification: VXML specification section 5.1.4

Revised/Rewitten Test questions 2.0

Given the following VoiceXML code fragment:

<menu>

```
  <prompt>
   Welcome to the Three Stooges hotline.
   To speak to Moe, press 1.
   To speak to Larry, press 2.
   To speak to Curley, press 3.
   To speak to Shemp, press 4.
  </prompt>

   <choice dtmf="1"  [ _____ ]/>
</menu>
```

Which of the following attributes, when placed in the blank in the example above, would allow navigation to the relevant forms?

   A. next="#Moe"
   B. link="#Moe"
   C. expr="#Moe"
   D. form="#Moe"

Justification: "next" is the only allowable navigation attribute for the <choice> element.

Objective: (VXML.3.10) Identify and use the navigational mechanisms within a VoiceXML document. Item: VXML.3.10.b.1
Reviewed by: Garrett King - Slightly confusing. Possibly reword as "transition to another dialog from within dcoument currently being executed", Dustin - no issues

Which two attributes of the <goto> element, can be used to transition to another <field> dialog in the same form? (Choose two.)

   A. next
   B. expr
   C. *nextitem
   D. * expritem

Justification: nextitem & expr item are the correct attributes to use when transitioning between dialogs within the same form.

Given the following fragment from an application root document of a VoiceXML application:

```
<link dtmf="*" event="help">
 <grammar mode="voice" version="1.0" root="TopLevel">
   <rule id="TopLevel" scope="public">
    <item>help</item>
   </rule>
 </grammar>
</link>
```

What happens when the user speaks "help" while visiting an item in an application leaf document?

   A. Nothing
   B. * The best qualified help event handler (based on the scope of the item visited) is invoked
   C. The default help event handler in the root document is always invoked
   D. The platform specific help event handled will be invoked.

Justification: Per the VXML 2.0 specification, a locally scoped event handler takes precedence over any others.

Given the following fragment from a document in a VoiceXML application:

```
<var name="document.assistance" value="'mainHelp'"/>
<link dtmf="*" expr="'#' + document.assistance">
  <grammar mode="voice" version="1.0" root="root">
   <rule id="root" scope="public">
    <one-of>
     <item> help </item>
    </one-of>
   </rule>
</grammar>
</link>


<form id="main">
    <field name="ready" type="boolean">
        <prompt>Are you ready?</prompt>
    </field>
</form>

<form id="mainHelp">
        <block>
          <prompt>You are being transferred to an operator.</prompt>
          <goto next="operator.vxml"/>
        </block>
</form>
```

What happens first when the user speaks "help"?

A. * The <link> grammar is matched, the VoiceXML browser will speak "You are being transferred to an operator" and the caller will be shunted to to the "mainHelp" <form>, then sent to the "operator.vxml" document for further VoiceXML execution.
B. The <link> grammar is matched, then an error. semantic will be thrown as the child elements of the <link> are executed.
C. The VoiceXML browser will speak "An error of type badfetch has occurred. Goodbye.".
D. Nothing, as the succeeding <field> element expects a user input in boolean format.

Justification:

Given the following fragment from a document in a VoiceXML application:

```
<form id="news">
        <field name="news_topic"›
                <prompt>
                 welcome to the news information service.<break/>
                what would you like to hear about?
                </prompt>
                <grammar mode="voice" version="1.0" root="root"›
                 <rule id="root">
                  <one-of>
                    <item>entertainment</item>
                    <item>sports</item>
                    <item>international</item>
                  </one-of>
                 </rule>
                </grammar>
                <filled>
                 <if cond="news_topic == 'entertainment'">
                  <goto nextitem="entertainment"/>
                 <elseif cond="news_topic == 'sports'">
                  <goto nextitem="sports"/>
                 <elseif cond="news_topic == 'international'">
                  <goto nextitem="international"/>
                 <else/>
                  <throw event="nomatch"/>
                 </if>
          </filled>
        </field>

        <field name="entertainment"›
         <prompt>please select movies, music or other.</prompt>
          ...
         </field>
         <field name="sports"›
         <prompt>please select baseball, football or tennis.</prompt>
          ...
        </field>
        <field name="international">
           <prompt>please select europe, middle east or africa.</prompt>
```

```
        ...
      </field>
  </form>

  <form id="entertainment>
  <block>
   <prompt>welcome to the entertainment news service.</prompt>
  </block>
  </form>

  <form id="sports">
   <block>
    <prompt>welcome to the sports news service.<prompt>
   </block>
  </form>

  <form id="international"›
   <block>
    <prompt>welcome to the international news service.</prompt>
   </block>
  </form>
```

What would occur in the VoiceXML execution immediately after the caller speaks "sports"?

A. The caller would be shunted to the "sports" <form> and the "welcome to the sports news service" prompt would be rendered to the caller.

*B. The caller would be shunted to the "sports" <field> and the "please select baseball, football or tennis" prompt would be rendered to the caller.
C. An "error.semantic" would be thrown.

D. The initial prompt "welcome the the news information service…" would be replayed to the caller."

Justification: The conditional statements in the <filled> element direct the caller to a form-item, not a <form>.

Objective: (VXML.3.10) Identify and use the navigational mechanisms within a VoiceXML document.

Given the following VoiceXML document ("name.vxml"):

```
<vxml version="2.0">
<var name="document.no_input_count" expr="0"/>

<form id="get_name>

<field name="user_name">
<grammar src="names.grxml" root="myRule"/>
  <prompt>To register, please say your first name</prompt>
   <noinput>
    I'm sorry, I didn't hear that.
    <assign name="document.no_input_count" expr="document.no_input_count + 1"/>
    <goto next="name.vxml"/>
   </noinput>
   <filled>
     <prompt>Thank you</prompt>
   </filled>
 </field>

</form>
</vxml>
```

What is the value of the no_input_count variable when the user's name is captured after two noinput events?

* A. 0
B. 1
C. 2
D. undefined

Justification: After trapping the noinput event, the document is then reloaded, thereby clearing the value of all previously assigned variable values.

Can an event generated within a subdialog be handled by the calling dialog, and why?

* A. Yes, if the calling dialog specifies a corresponding event handler and the event is explicitly returned by the subdialog.

B. No, an event generated within a subdialog can never be handled by the calling dialog, as their execution contexts are entirely separate.

C. Yes, if the subdialog specifies a an application root document.

D. Yes, if the calling dialog specifies a corresponding event handler, and both the dialog and the subdialog exist in the same document.

Justification:

Can the <goto> element be used to transition from one document to a specific form item in another document, and if so, under what conditions?

* A. Yes, if the "next" attribute specifies the name of the form and the name of the item in the other document

B. Yes, if the "nextitem" attribute specifies the name of the item in the other document and the src attribute specifies the name of the form

C. Yes, if the "nextitem" attribute specifies the name of the form and the name of the item in the other document as a fragment

D. No, there is no way to transition from one document to a specific form item in another document.

Justification:

Objective: (VXML.3.11) Identify and use the navigational mechanisms between VoiceXML documents.
Item: VXML.3.11.c.1
Reviewed by: Garrett King - No problems, Dustin - reduce the number of correct answers to 2

Which of the following VoiceXML fragments, when executed, will result in a document fetch operation being enacted? (Choose two.)

A. <goto next="#start"/>

B. <submit src="start.xml" method="get"/>

* C. <link next="http://www.myServer.com/myDialog.vxml#start"/>

D. <transition next="http://www.myServer.com/myDialog.vxml" method="post"l>

Justification:

Given the following code fragment:

```
<field name="collectMonth" type="number">
  <prompt>What day of the month?</prompt>
  [ _____ ]
</field>
```

Which code fragment should be inserted in the blank to ensure that the day of month is less than or equal to 31 and require the user to reenter it.

A.
```
<if cond="day_of month &gt; 31">
  <assign name="day_of_month" expr="undefined"/>
</if>
```

B.
```
<if cond="day_ofmonth &gt; 31">
  <clear namelist="day_ofmonth"/>
</if>
```

*C.
```
<filled>
  <if cond="day_ofmonth &gt; 31">
   <clear namelist="day_of_month"/>
  </if>
</filled>
```

D.
```
<filled>
  <if cont="day_of month &gt; 31">
   <reprompt/>
  </if>
</filled>
```

Justification: The form-item variable must be cleared in order to revisit the field and reprompt the user.

Objective: Validate user input using some of the following: VoiceXML tags; ECMAScript; Single field, multiple fields. For example: The day of the month must be between 1 and 31, or the correct number of digits in a credit card.
Item: VXML.3.12.b.1
Reviewed by: Garrett King - No problems, Dustin - no issues

Given the following <filled> element:

```
<filled mode="all">
 <if cond="day_of_month &gt; 29 &amp;&amp.; month == 'February'">
  <clear namelist="day_of_month month"/>
 </if>
</filled>
```

At which locations in the following document would it be the most appropriate to insert the <filled> element and it's contents to ensure that all conditions can be met by user input?

```
<vxml version="2.1">
[ _____ A _____ ]
<form id="collectDate">
 <field name="month">
  <prompt>What month?</prompt>
   <grammar src="http://www.example/com/month.grxml"/>
  [ _____ B _____]
  </field>

  <field name = "day_of_month" type="number">
   <prompt>What day of the month?</prompt>
*  [ _____ C _____]
  </field>
  * [ _____ D _____]
 </form>
```

Justification: Both form-items must be populated with a variable via user input, and as such the only locations this would be applicable would be at the form scope, or within the second field. Note that the original test material indicated that "C" is wrong, when it is in fact completely valid (and correct).

Objective: Objective: (VXML3.12) Validate user input using some of the following: VoiceXML tags; ECMAScript; Single field, multiple fields. For example: The day of the month must be between 1 and 31, or the correct number of digits in a credit card.

Item: VXML3.12a1
Reviewed by: Mike McTear √, MHenry X, Dustin Hayre √

Given the following code fragment:

```
<field name="month_of_year" type="number">
  <prompt>What month of the year?</prompt>
  [_____]
</field>
```

Which code fragment should be inserted in the blank to ensure that the month_of_year is less than or equal to 12 and require the user to reenter it.

A. ```
<if expr="true">
        <assign name="month_of_year" expr="undefined"/>
   </if>
```

B. ```
<if cond="month_of_year &gt; 12">
        <clear namelist="month_of_year"/>
   </if>
```

C. ```
<filled>[SEP]
        <cond="month_of_year > 12">
        </cond>
   </filled>
```

*D. ```
<filled>[SEP]
        <if cond="month_of_year &gt; 12">
           <clear namelist="month_of_year"/>
        </if>
```

```
      </filled>
```

Objective: Objective: (VXML3.12) Validate user input using some of the following: VoiceXML tags; ECMAScript; Single field, multiple fields. For example: The day of the month must be between 1 and 31, or the correct number of digits in a credit card.

Item: VXML3.12b1
Reviewed by: X- MHenry, Mike McTear √, Dustin Hayre √

Given the following <filled> element:
```
  <filled mode="all">[SEP]
        <if cond="day_of_month &gt; 29 &amp;&amp; month == 'February'">
        <clear namelist="day_of_month month"/>[SEP]
        </if>
  </filled>
```

Where can it be placed in the following <form>? (Choose two.)
```
[_____A_____][SEP]
<form id="examplel">
  <field name="month">
        <prompt>What month?</prompt>
        <grammar src="http://www.example/com/month.grxml"/>
    [_____B_____][SEP]
  </field>[SEP]
  <field name = "day_of_month" type="number">
        <prompt>What day of the month?</prompt>
        [_____C_____]
  </field>
```

[_____D_____]
</form>

A.
B.
C
D.*

Objective: (VXML3.12) Validate user input using some of the following: VoiceXML tags; ECMAScript; Single field, multiple fields. For example: The day of the month must be between 1 and 31, or the correct number of digits in a credit card.

Item: VXML3.12c1
Reviewed by: MHenry √ Mike McTear √ Dustin Hayre √

Which dialog can be produced by the following <form>?

```
<form id = "example">[SEP]
  <field name = "amount" type="number">
        <prompt> How much does it cost? </prompt>
        <filled>
          <if cond = "amount &gt; 600">
            <clear namelist = "amount"/>
          </if>
        </filled>
  </field>
  <block>
        <prompt> You said <value expr = "amount"/> </prompt>
  </block>
</form>
```

A. Computer: How much does it cost?
    User: 900
    Computer: You said 900[SEP]
B. Computer: How much does it cost?
    User: 900
    Computer: How much does it cost?
    User: 700
    Computer: You said 700
*C. Computer: How much does it cost?
  User: 700
    Computer: How much does it cost?
    User: 500
    Computer: You said 500
D. Computer: How much does it cost?
    User: 800
    Computer: How much does it cost?
    User: (no response)
    Computer: You said 800.

Justification for correct answer: Any value over 600 causes the value to be cleared and the prompt to reprompt only answer C contains a value less than 600.

Objective: (VXML3.12) Validate user input using some of the following: VoiceXML tags; ECMAScript; Single field, multiple fields. For example: The day of the month must be between 1 and 31, or the correct number of digits in a credit card.
Item: VXML3.12d1
Reviewed by: X- MHenry, Mike McTear √, Dustin Hayre √

Given the following VoiceXML code fragment:
```
<field name="credit_card_number" type="digits">
 <prompt> Enter your credit card number </prompt>
 <filled>
   [_____]
```

```
    </filled>
</field>
```

What should be inserted into the blank to determine whether the number of digits in the credit_card_number field is less than 12 and, if so, have the user reenter it?

A.
```
<if cond="length(credit_card_number) &lt; 12">
    <prompt>
      Your credit card number does not have enough digits
    </prompt>
    <goto next="#credit_card_number"/>
</if>
```

B.
```
<if expr="credit_card_number">
    <prompt>
      Your credit card number does not have enough digits
    </prompt>[SEP]
    <assign name="credit_card_number" expr="undefined"/>
</if>
```

*C.
```
<if cond="credit_card_number.length &lt; 12">
    <prompt>
      Your credit card number does not have enough digits
    </prompt>[SEP]
    <clear namelist="credit_card_number"/>
    </if>
```

D.
```
<if cond="credit_card_number.length < 12">
    <prompt>[SEP]
      Your credit card number does not have enough digits
    </prompt>[SEP]
    <clear namelist="credit_card_number"/>
</if>
```

Justification for correct answer: A. length is not a defined ECMA script function. B. The <if> element in B uses an improper expr attribute. D. The less than symbol will cause a syntax error.

Which statement validates that the variable value for "amount" is less than 500?

 A. <if "amount < 500">

*B. <if cond = "amount < 500">

 C. <if cond = "amount < 500">

 D. <cond = "amount < 500">

Justification for correct answer: All answers except C contain obvious syntax errors

Which statement validates the variable value for "speed" is between 35 and 55?

 A. <cond = "35 < && speed < 55">

*B. <if cond = "35 < speed && speed < 55">⌷SEP⌷

C. <if cond = "35 &lt speed && speed < 55">

D. <if cond = "35 < speed and speed < 55">

Justification for correct answer: All answers except B contain obvious syntax errors

---

Given the following VoiceXML code fragment:

```
<form id="F1">
 <var name="action" expr="'validate'"/>
 <initial name="collectinfo">
  …
 </initial>

 <field name="cardnum">
  …
 </field>

 <field name="cardtype">
  ...
 </field>
 <submit next="http://www.myServer.com/process/doCard.jsp"/>
</form>
```

Which, if any, variables are submitted to doCard.jsp?

A. validate, cardnum, cardtype
B. collectinfo, cardnum, cardtype, validate
*C. action, cardnum, cardtype
D. No variables will be submitted.

Justification:

Objective: (VXML.3.13) Submit data to a back-end service (not to include dynamic generation of documents).
Item: VXML.3.13.b.1
Reviewed by: Garrett King - "will be sent via" instead of "will be senbt sent via" ,
Dustin - no issues but A should be marked as correct

Recorded audio data that is submitted to another document for post-processing will be sent sent via:

*A) method="post"
B) method="get"
C) method="put"
D) method="https"

Justification: Recorded audio data will always use method=post.

Objective: (VXML.3.13) Submit data to a back-end service (not to include dynamic generation of documents).
Item: VXML.3.13.c.1
Reviewed by: Garrett King - No problems, Dustin - no issues (except a 20s fetch? thanks, satan)

If it is expected that a <data> call will take under 25 seconds of time to process, a VoiceXML application should specify the following settings to ensure that an error is not thrown:

A) <data src="target.jsp" maxwait="25s" filler="holdmusic.wav">
* B) <data src="target.jsp" fetchtimeout="25s">
C) <data src="target.jsp" keepalive="25s">
D) <data src="target.jsp" fetchaudio="hold.wav" wait="25s">

Justification:

Objective: Using CCXML, route to a specific VoiceXML application based on specific incoming call data.
Item: VXML.3.14.a.1
Reviewed by: √-MHenry, Dustin - see review notes - Revised

Which event variable will provide the callerID for the inbound caller?

*A) event$.connection.remote
B) event$.connection.called
C) event$.connection.From
D) event$.connection.info

Objective: Using CCXML, route to a specific VoiceXML application based on specific incoming call data.
Item: VXML.3.14.b.1
Reviewed by: √-MHenry - Revised

What value can be placed into the underlined portion to trigger the dialogprepare element for callerid 1238675309?

<transition event="connection.alerting" state="init">
     <assign name="FromHeader" expr="'*1238675309*'"/>

```
    <if cond="FromHeader == _____ ">
        <dialogprepare src="dialog.vxml'" dialogid="mydialog" />
    </if>
</transition>
```

*A) event$.connection.remote
B) event$.connection.called
C) event$.connection.From
D) event$.connection.info

Objective: Using CCXML, route to a specific VoiceXML application based on specific incoming call data.
Item: VXML.3.14.c.1
Reviewed by: √-MHenry

Based on the excerpt of code below, What session variable could be used in order to route the call based on the initiation of the application session?

```
<transition event="connection.alerting" state="init">
    <if cond="'newcall' == _____ ">
        <dialogprepare src="inbound.vxml'" dialogid="mydialog" />
    </if>
    <if cond="'external' == _____ ">
        <dialogprepare src="outbound.vxml'" dialogid="mydialog" />
    </if>
    <if cond="'createccxml' == _____ ">
        <dialogprepare src="newdoc.vxml'" dialogid="mydialog" />
    </if>
</transition>
```

*A) session.startupmode
B) session.uri
C) session.start
D) session.initiator

What method call will establish a connection after a connection.alerting event has been thrown?

A)
*B)
C)
D) <transition/>

What will be the flow of events from the below CCxml application on an inbound call?

```
<?xml version="1.0" encoding="UTF-8"?>
<ccxml version="1.0">
        <var name="app_state" expr="'initial'" />
        <var name="in_connID" />
```

```
        <eventprocessor statevariable="app_state">
                <transition state="initial" event="connection.alerting">
                        <accept/>
                        <assign name="in_connID" expr="event$.connection.connectionid" />
                </transition>

                <transition state="'initial'" event="connection.connected">
                        <send name="'continue'" target="session.id" delay="'3000ms'" />
                </transition>

                <transition state="continue" event="continue">
                        <exit/>
                </transition>
        </eventprocessor>
</ccxml>
```

A) connection.alerting -> connection.connected -> continue -> connection.disconnected
B) connection.alerting -> connection.connected -> ccxml.loaded -> connection.disconnected
C) ccxml.loaded -> connection.connected -> continue -> connection.disconnected
*D) ccxml.loaded -> connection.alerting -> connection.connected -> continue ->
connection.disconnected

Objective: Use the CCXML event model for advanced call control. (eg. outbound calls,
event handling)
Item: VXML.3.15.c.1
Reviewed by:√-MHenry - Revised

What will be the flow of events from the below CCxml application on an outbound call?

```
<?xml version="1.0" encoding="UTF-8"?>
<ccxml version="1.0">
```

```
        <var name="app_state" expr="'initial'" />
        <var name="in_connID" />

        <eventprocessor statevariable="app_state">
                <transition event="ccxml.loaded" state="'initial'">
                <createcall dest="'tel:+14072223333'" connectionid="myOutboundConnectionID"
        timeout="'45s'" />
                </transition>

                <transition state="'initial'" event="connection.connected">
                        <send name="'continue'" target="session.id" delay="'3000ms'" />
                </transition>

                <transition state="continue" event="continue">
                        <exit/>
                </transition>
        </eventprocessor>
</ccxml>
```

A) ccxml.loaded -> connection.alerting -> connection.connected -> continue ->
connection.disconnected
*B) ccxml.loaded -> connection.progressing -> connection.connected -> continue ->
connection.disconnected
C) connection.progressing -> connection.connected -> ccxml.loaded ->
connection.disconnected
D) ccxml.loaded -> connection.connected -> continue -> connection.disconnected

---

Objective: (VXML.3.16) Use VoiceXML call control elements (i.e., Transfer and disconnect).
Item: VXML3.16.a.1 (original content)
Reviewed by: X- MHenry, Mike McTear √, Dustin Hayre √

Given the VoiceXML code fragment:

```
<transfer name="mytransfer" dest="tel:1234567" bridge="true" transferaudio="music.wav">
  <filled>
    <if cond="mytransfer == 'busy' || mytransfer == 'noanswer'>
      <assign name="reason" expr="'failure'"/>
      <goto next="#form2"/>
```

```
    <else/>
      <assign name="reason" expr="'cancel'"/>
      </disconnect>
    </if>
  </filled>
  <prompt> Thank you. </prompt>
  </transfer>
```

Which two statements about this transfer element are true if the caller cancels the transfer attempt?

*A. it attempts a bridge transfer while playing the file music.wav

 B. it attempts a bridge transfer and plays the prompt "Thank you" after the transfer

*C. it attempts a bridge transfer, assigning reason to 'cancel' and disconnects

 D. it attempts a bridge transfer, assigning reason to 'cancel' if the transfer number is busy

Objective: (VXML.3.16) Use VoiceXML call control elements (i.e., Transfer and disconnect).
Item: VXML3.16.b.1
Reviewed by: √-MHenry, Mike McTear √, Dustin Hayre √

Given the VoiceXML code fragment:

```
<form id="transfer_caller">
  <transfer name="mytransfer" dest="tel:1234567" bridge="true">
    <filled>
```

```
    <if cond="mytransfer == 'busy' || mytransfer == 'noanswer'>
     <assign name="reason" expr="'failure'"/>
     <disconnect/>
     </if>
   </filled>
   <goto next="#Form2"/>
   </transfer>
</form>

<form id="Form2">
 <block>
   <prompt>
     Thank you for your call.
   </prompt>
   <disconnect/>
 </block>
</form>
```

What happens after a successful transfer?

 A. The variable reason is assigned the value failure and the caller is disconnected.

 B. The variable reason is assigned the value failure and the application proceeds to Form2 where the caller hears "Thank you for your call" and then the caller is disconnected.

*C. The application proceeds to Form2 and the caller hears "Thank you for your call" and then the caller is disconnected.

 D. The caller is disconnected.

Justification for correct answer: Any successful transfer will cause the block element to execute and the execution to proceed to form2.

Objective: (VXML.3.16) Use VoiceXML call control elements (i.e., Transfer and disconnect).
Item: VXML3.16.c.1
Reviewed by: √-MHenry, Mike McTear √, Dustin Hayre √

Given the VoiceXML code fragment:

```
<form id="transfer_caller">
  <catch event="connection.disconnect.hangup">
    <log>Disconnect event detected</log>
    <exit/>
  </catch>
  <transfer name="mytransfer" dest="tel:1234567" bridge="true">
    <filled>
      <if cond="mytransfer == 'busy' || mytransfer == 'noanswer'>
        <assign name="reason" expr="'failure'"/>
        <disconnect/>
      </if>
    </filled>
    <goto next="#Form2"/>
  </transfer>
</form>

<form id="Form2">
  <block>
    <prompt>
      Thank you for your call.
    </prompt>
    <disconnect/>
  </block>
</form>
```

What happens if the transfer number is busy?

A. The variable reason is assigned the value failure and the application proceeds to Form2 where the caller hears "Thank you for your call." and is disconnected.

*B. The variable reason is assigned the value failure and the caller is disconnected. "Disconnect event detected" is written to the application log and the application exits.

C. "Disconnect event detected" is written to the application log and the application exits.

D. The variable reason is assigned the value failure and the caller is disconnected.

Justification for correct answer: The busy result causes the if block to execute assigning the value failure to reason. The disconnect event is caught by the catch element and writes Disconnect event detected to the log and calls exit.

The [_____] attribute is used to identify the root document of a VoiceXML application:

A) root
B) main
C) parent
* D) application

Justification:

A variable declared in a root document may be accessed in leaf documents:

A) Only if the root document contains no forms.
*B) In the same way as any other variable would be referenced.
C) By using an import statement at the start of the leaf document.

D) If the attribute "global" was set to "true" when the variable was declared.

Justification: _____

To define a new globally-scoped value for variable 'x' within a leaf document, the application should specify:

*A) <assign name="application.x" expr="'new value"/>
B) <assign name="super.x" expr="'new value"/>
C) <assign name="x" expr="'new value"/>
D) <assign name="document.x" expr="'new value"/>

Justification: _____

Given the following set of utterances:

 cheap
 very cheap
 inexpensive

expensive

Which grammar rule matches them all?

*A: <rule id="r1" scope="public">

              <one-of>
                <item>inexpensive</item>
                <item><item repeat="0-1">very</item>cheap</item>
                <item>expensive</item>
              </one-of>
          </rule>

B: <rule id="r1" scope="public">
              <one-of>
                <item>inexpensive</item>
                <item><item repeat="1">very</item>cheap</item>
                <item>expensive</item>
              </one-of>
          </rule>

C: <rule id="r1" scope="public">
              <one-of>
                <item>inexpensive</item>
                <item><item count="0-1">very</item>cheap</item>
                <item>expensive</item>
              </one-of>
          </rule>

D: <rule id="r1" scope="public">
              <one-of>
                <item>inexpensive</item>
                <item><item>very</item><item>cheap</item></item>
                <item>expensive</item>
              </one-of>
          </rule>

Justification:
    B*:* <item repeat="1"> will not allow case where 'very' is optional e.g. in 'cheap'
    C: <item count="0-1"> is not valid VXML for options in grammar rules
    D: <item><item>very</item><item>cheap</item></item> will not allow case where
    'very' is optional e.g. in 'cheap'

Given the following set of utterances:

Book me a flight to Miami
I want to book a flight to New York
Book me a flight to New York City
I want to book a flight to Anchorage

Which grammar rule matches them all?

A: <rule id="r1" scope="public">
                <one-of>
                <item>Book me a flight to</item>
                <item>I want to book a flight to</item>
                <one-of>
                  <item>Miami</item>
                  <item>New York <item repeat="1">City</item></item>
                  <item>Anchorage</item>
                </one-of>
              </one-of>
        </rule>

B: <rule id="rl" scope="public">
                <one-1f>
                 <item>Book me a flight to</item>
                  <item>I want to book a flight to</item>
                </one-of>
                <one-of>
                  <item>Miami</item>
                  <item>New York <item repeat="*">City</item></item>

```
                <item>Anchorage</item>
            </one-of>
    </rule>


*C:     <rule id="r1" scope="public">
            <one-of>
              <item>Book me a flight to</item>
              <item>I want to book a flight to</item>
            </one-of>
            <one-of>
              <item>Miami</item>
              <item>New York <item repeat="0-1">City</item></item>
              <item>Anchorage</item>
            </one-of>
        </rule>



D:  <rule id="r1" scope="public">
            <one-of>
            <item>
              <one-of>
                <item>Book me a flight to</item>
                <item>I want to book a flight to</item>
              </one-of>
            </item>
            <item>
              <one-of>
                <item>Miami</item>
                <item>New York <item repeat="0-1">City</item></item>
                <item>Anchorage</item>
              </one-of>
            </item>
            </one-of>
    </rule>
```

> *Justification:*
> A: <item repeat="1">City</item> will not allow case where 'city' is optional
> B: <item repeat="*"> is not valid VXML
> D: The first <one-of> means that only one of the embedded <item> with a <one-of> is
>   selected so that something like 'Book me a flight to' or 'Miami' would be accepted by
>   the grammar

Given the following utterances:

Book a flight to New York
Book a flight to New York City
Book a flight to the Big Apple

and the following grammar rule:

   <rule id="r1" scope="public"> <item>Book a flight to</item>

       [_____ |

   </rule>

Which code fragment should be inserted in the blank so that the rule matches the set of utterances?

   *A.   <one-of>
                <item>the Big Apple</item>
      <item>New York <item repeat = "0-1">City</item><item>
      </one-of>

   B.   <choice-of>
                <item>the Big Apple /item>
                <item>New York<item count="0-1">sunny</item> </item>
                </choice-of>

   C.   <choice-of>
                <item>the Big Apple /item>

```
                    <item>New York<item repeat="0-1"> City </item> </item> </choice-of>

        D.          <one-of>
                     <item>the Big Apple /item>
                      <item>New York<item repeat="*">City</item> </item>
                      </one-of>
```

Objective: [list] (VXML.3.19) Use scoping to limit rule access among grammars and VoiceXML dialogs (i.e., public, private and root rules).
Item: VXML.3.19.a. 1
Reviewed by: X- MHenry, X-DSchake
Revised Material: √
 x
Original Material: x

Consider the following code:

```
<form>
    <catch event = "exit">
        <prompt> Exit message A .</prompt>
    </catch>
    <field name = "get_value" type = "number">
        <prompt> say a number </prompt>
        <catch event = "exit">
            <prompt> Exit message B </prompt>
        </catch>
    </field>
</form>
```

What happens if the user says "help" in response to the prompt "say a number"?

A. The user hears "Exit message A."

*B. The user hears "Exit message B."

C. The user hears "Exit message B. Exit message A."

D. The user hears "Exit message A. Exit message B."

Justification:
Scope precedence: <field> has priority

Objective: [list] **(VXML.3.19) Use scoping to limit rule access among grammars and VoiceXML dialogs (i.e., public, private and root rules).**
Item: **VXML.3.19.b. 1**
Reviewed by: √ - MHenry, √ DSchake
Revised Material: x
x
Original Material: √

When the scope of a rule in a grammar is not specified, the scope is

A.   static

B.   public

*C.   private

D.   inherited from the grammar's root rule

Objective: [list] (VXML.3.19) Use scoping to limit rule access among grammars and VoiceXML dialogs (i.e., public, private and root rules).
Item: VXML.3.19.c. 1
Reviewed by: X - MHenry
Revised Material: x
  x
Original Material: √ - Question revised slightly from original

What is required in order to reference a rule in an external grammar that is not the root rule?

*A. The scope of the rule referenced should be set to public and the rule should be named

   explicitly

B. The scope of the rule referenced should be set to private and the rule should be named

   explicitly

C. The rule referenced should be an immediate child of the grammar's root rule

D. The rule referenced should be identified as the root rule of the grammar in the grammar header

Justification:

Objective: (VXML.3.20) Write and invoke reusable dialog components using the

Given the following code fragment:

```
<form id="month">
  <var name="year" value="2014"/>
  <subdialog name = "month_name" src="#get_month">
    [_____]
    <filled>
      <log>The month and year is
        <value expr="month_name.month"/>
        <value expr="year"/>
      </log>
    </filled>
  </subdialog>
</form>

<form id="get_month">
  <var name="year"/>
    <field name = "month">
      <prompt> What month in <value expr="year"/>? </prompt>
        <grammar type="application/grammar+xml"
          src="www.voicexml.org/month.grxml"/>
    </field>
  <return namelist = "month"/>
</form>
```

What can be placed at the block to pass along the "year" to the subdialog?

  A. <assign subdialog="year"/>

  B. <var name="year" expr="year"/>

 *C. <param name="year" expr="year"/>

  D. <value expr="year"/>

Objective: (VXML.3.20) Write and invoke reusable dialog components using the subdialog element.
Item: VXML.3.20.b.1 (original content)
Reviewed by: √ MHenry, Mike McTear √, Dustin Hayre √

A single subdialog is invoked multiple times from the same application. What happens to the local variables in the subdialog?

*A. The local variables are lost when the subdialog returns.

 B. The subdialog code must explicitly clear the local variables before returning.

 C. The subdialog code must explicitly clear the local variables at the beginning of the subdialog invocation.

 D. The subdialog code must explicitly clear each variable before it solicits a new value from the user.

Justification for correct answer: Since the subdialog lives in it's on context all local variables are lost when the subdialog returns.

Objective: (VXML.3.20) Write and invoke reusable dialog components using the

Given the following code fragment:

```
<form id="Form1">
 <catch event="connection.disconnect.hangup">
  <log>The caller disconnected</log>
  <exit/>
 </catch>
 <subdialog name = "NUMBER" src="#get_number">
  <filled>
    <prompt>You entered <value expr="NUMBER.number"/></prompt>
  </filled>
 </subdialog>
</form>

<form id="get_number">
 <field name="number" type="digits">
  <catch event="connection.disconnect.hangup">
    [_____]
  </catch>
  <prompt>Please enter a number</prompt>
  <filled>
    <return namelist="number"/>
  </filled>
 </field>
</form>
```

What can be placed at the block so that the calling form will catch the subdialogs connection.disconnect.hangup event?

 A. <return namelist="connection.disconnect.hangup"/>

 B. <throw event="connection.disconnect.hangup"/>

*C. <return event="connection.disconnect.hangup"/>

 D. <throw namelist="connection.disconnect.hangup"/>

What does the function below return for a value of 3?

```
<script>
<![CDATA[
    function func(num)
    {
        return (n &lt; 1)? 1 : n * func(n-1);
    }
]]>
</script>
```

A) 1
B) 0
* C) 6
D) 2

What would the correct syntax be for referencing an external script file?

A) <script target="MyScript.js"/>
B) <script location="MyScript.js"/>
*C) <script src="MyScript.js"/>
D) <script uri="MyScript.js" />

What is the proper way to call this function within a prompt

```
function test() {
        return ("Hello World");
}
```

A) <prompt>ruleFunction()</prompt>
B) <prompt><value src="ruleFunction()" /></prompt>
C) <prompt>"ruleFunction()"</prompt>
*D) <prompt><value expr="ruleFunction()" /></prompt>

Considering the below VoiceXML document:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

        <catch event="MyUserDefinedEvent">
        <prompt>
                _____2_____
        </prompt>
        </catch>
```

```
        <form id="F_1">
                <block>
                <prompt>
                        Getting ready to throw an event to be caught.
                </prompt>

                <throw event="MyUserDefinedEvent" _____1_____ />
                </block>
        </form>
</vxml>
```

What property can be set with the custom event to add a custom message which will be played during the prompt of the catch event?

* A. 1) message="'custom message'" 2) <value expr="_message" />.
B. 1) prompt="'custom message'" 2) <value expr="_prompt" />.
C. 1) say="'custom message'" 2) <value expr="_say" />.
D. 1) dialog="'custom message'" 2) <value expr="_dialog" />.

Objective: Throw and catch a custom event.
Item: VXML.3.22.b.1
Reviewed by: √-MHenry -Revised

What will be output on the second reprompt?

```
<form id="F1">
        <field name="F_1" type="digits">
        <prompt count="1">
                Whats your phone number?
        </prompt>
        <prompt count="3">
                Did you say something?
        </prompt>
         ...
        </field>
</form>
```

A) Whats your phone number?
B) Did you say something?
C) I am sorry I didn't hear that
*D) There will be nothing said

Objective: Throw and catch a custom event.
Item: VXML.3.22.c.1
Reviewed by: √-MHenry, √ - Dustin - Revised

What will be output from the following after 4 noinput events?

```
<form id="F1">
        <field name="F_1" type="boolean">
        <prompt count="1">
                Do you like cake?
        </prompt>
        <prompt count="2">
                Is it that difficult of a question?
        </prompt>
        <prompt count="3">
                Does a cat have your tongue?
        </prompt>

        <catch event="promptcount4">
         <prompt>Do you have marbles in your mouth?</prompt>
        </catch>

        <noinput>
        <prompt>
                Saying nothing will get you no where
        </prompt>
        </noinput>

        </field>
</form>
```

A) Do you like Cake?
B) Is that a difficult question?
C) Do you have marbles in your mouth?
*D) Nothing but silence will be played

Objective: Override a default event handler.
Item: VXML.3.23.a.1
Reviewed by: √-MHenry - Revised

```xml
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

        <form id="F1">
        <field name="F_1">
        <noinput count="1">
                <prompt>
                        Wait for it.
                </prompt>
        </noinput>

        <noinput count="2">
                <prompt>
                        Hold.
                </prompt>
        </noinput>

        <noinput count="3">
                <prompt>
                        Keep holding.
                </prompt>
        </noinput>

        <grammar xml:lang="en-us" root="TOPLEVEL">
        <rule id="TOPLEVEL">
        <item> another dummy grammar </item>
        </rule>
```

```
            </grammar>

            <prompt>
            Hold your breath
            </prompt>

            <filled>
                    <prompt>
                    Easier to hold your breath when you arent talking.
                    </prompt>
            </filled>
</field>
</form>
</vxml>
```

Under what conditions will the prompt "Keep holding." be heard by the caller?

A) When the total count of no inputs has reached 3 for the entire application
B) This will only be executed within the fourth field within a vxml document
*C) When the total count of no inputs has been 3 for the given field
D) Only executed when there are more than 3 grammars active.

<div style="border:1px solid">

Objective: Override a default event handler.
Item: VXML.3.23.b.1
Reviewed by: √-MHenry -Revised

</div>

Which attribute for the <noinput> element will allow for conditional logic during recognition to determine the type of noinput returned?

*A) cond
B) if
C) test
D) compare

Given the following snippet of code:

```
<field name="cake_survey">
  <grammar type="application/srgs+xml" src="numbers.grxml"/>
  <prompt>How much wood could a woodchuck chuck?</prompt>
  <prompt count="2">
        Any guess is better than no guess. How much wood could a woodchuck chuck?
  </prompt>
  <noinput>
        Not even a guess? Try again.
        <reprompt/>
  </noinput>
</field>
```

What prompt will be played to the user if the user remains silent after the initial prompt of "How much do you enjoy cake?"

A) Silence will be played to the caller
B) "How much wood could a woodchuck chuck?"
*C) "Any guess is better than no guess. How much wood could a woodchuck chuck?"

D) "How much wood could a woodchuck chuck? Any guess is better than no guess. How much wood could a woodchuck chuck?"

What VoiceXML element will throw a custom event and has proper syntax?

A) <throw event="'CustomEvent'" />
*B) <throw event="CustomEvent" />
C) <event value="CustomEvent" />
D) <event value="'CustomEvent'" />

MHenry Review Notes: *None.*

Which element will allow the ability to trap events that are generated within VoiceXML execution?

*A) <catch>
B) <event>
C) <trap>
D) <transition>

Which of the following will successfully catch the event "newEventTransition"?

A) <catch cond="false" event="newEventTransition"></catch>
B) <catch cond="false" transition="newEventTransition"></catch>
C) <catch transition="newEventTransition"></catch>
*D) <catch event="newEventTransition"></catch>

Given the below code, what will occur if the user does not respond to the initial prompt?

```
<vxml version="2.1">
<form>
   <catch event="noinput">
         <exit/>
   </catch>

   <field name="F_1" type="boolean">
        <prompt> Did you enjoy the movie? </prompt>
        <noinput count="2">
                 <reprompt>
        </noinput>
   </field>
   <catch event="noinput" count="1">
        <prompt>
                 I did not hear what you said
        </prompt>
   </catch>
</form>
</vxml>
```

A) The application will exit
B) The browser will respond with "Did you enjoy the movie"
*C) The browser will repsond with "I did not hear what you said"
D) Nothing will happen and the browser will do nothing until input is received.

What will be the value of variable "x" after the first noinput event is generated?

```
<vxml version="2.1">
<var name="x" expr="0"/>
<form>
   <block>
        <assign name="x" expr="5"/>
   </block>
   <noinput>
        <assign name="x" expr="x + 3"/>
   </noinput>
   <field name="F_1" type="boolean">
        <prompt>
                Can you guess what I am thinking?
        </prompt>
        <noinput>
                <assign name="x" expr="x + 7"/>
                <log expr="'***********************' + x" />
        </noinput>
   </field>
</form>
</vxml>
```

*A) 12
B) 3
C) 8
D) 7

Where will the application transition to after the user utters the phrase "help"

```
<vxml version="2.1">
<var name="base" expr="'leafdoc.vxml'"/>
<var name="here" expr="'#gethelp'"/>

<link expr="base+here">
   <grammar mode="voice" type="application/srgs+xml"
                                  version="1.0" root="help">
        <rule id="help">
                <item>help</item>
        </rule>
   </grammar>
</link>
<form>
   <block>
        <var name="base" expr="rootdoc.vxml"/>
   </block>
   <field name="cont" type="boolean">
        <prompt>Are you ready?</prompt>
   </field>
</form>
</vxml>
```

A) The first menu or form in leafdoc.xml
B) The first menu or form in rootdoc.vxml
C) The form identified as gethelp in rootdoc.vxml
*D) The form identified as gethelp in leafdoc.vxml

Which of the following does NOT demonstrate correct usage of the logging element?

A) <log>The callers input was recognized</log>
*B) <log cond="acct_num">The callers input was recognized</log>
C) <log label="account">The callers input was recognized</log>
D) <log expr="acct_num">The callers input was recognized</log>

Which of the following will output the value of VoiceXML variable "myVar"?

A) <log>myVar</log>
B) <log cond="true" expr="myVar">
C) <log category="3">T<var name="myVar"/></log>
*D) <log expr="myVar"></log>

Which of the following will output "Hello World"

A) <log var="Hello World"/>
B) <log name="rose">Hello World</log>
*C) <log expr=" 'Hello World' "/></log>
D) <log expr="Hello World"></log>

Objective: [list] (VXML.3.27) Match a grammar rule to a specific set of input and output criteria
Item: VXML.3.27.b. 1
Reviewed by: MHenry
Revised Material: x
** _x_**
Original Material: √

Which grammar rule matches the input "Elizabeth" and the output "Liz"?

A.   <rule id = "name"›
                <one-of>
                <item>Elizabeth</item>
                <item>Liz</item>
            </one·-of>
        </rule>

*B. <rule id = "name"›
        <item>Elizabeth<tag>out="Liz";</tag></item>
        </rule>

C.   <rule> id = "name"›
        <item>Elizabeth<tag>Liz</tag></item>
            </rule>

D.   <rule> id = "name"›
                <item>Elizabeth
                <tag>assign name="Liz"</tag></item>
                </rule>

Changd to b.1

Objective: [list] (VXML.3.27) Match a grammar rule to a specific set of input and output criteria
Item: VXML.3.27.c. 1
Reviewed by: X- MHenry
Revised Material: x
 x
Original Material: √

Given the input "I want to take out money from my checking account", the required output:
action = "withdraw"   acct = "checking"
and the top-level rule:

```
<rule id="transfer">
<item> I want to </item>
<ruleref uri="#action"/>
<item>money</item>
<ruleref uri="#acct"/>
</rule>
```

Which pair of sub-rules produces the required output?

```
        A.      <rule id = "action">
        <item>take out <tag> out = "withdraw"; </tag> </item>
        </rule>

        <rule id = "acct">
        <one-of>
         <item>checking<tag> out = "from my checking account"; </tag> </item>
         <item>savings<tag> out = "from my savings account"; </tag> </item>
        </one-of>
        </rule>
```

```
B*. <rule id = "action">
        <item>take out <tag> out = "withdraw"; </tag> </item>
        </rule>


        <rule id = "acct">
        <one-of>
        <item> from my checking account <tag> out = "checking"; </tag> </item>
        <item>from my savings account<tag> out = "savings"; </tag> </item>
        </one-of>
        </rule>

C. <rule id = "action">
        <item>withdraw <tag> out = "take out"; </tag> </item>
        </rule>


        <rule id = "acct">
        <one-of>
        <item> from my checking account <tag> out = "checking"; </tag></item>
        <item>from my savings account <tag> out = "savings"; </tag></item>
        </one-of>
</rule>

D. <rule id = "action">
        <item>take out <tag> out = "withdraw"; </tag> </item>
        </rule>


        <rule id = "acct">
        <one-of>
        <item> from my checking account <tag> out = "savings"; </tag></item>
        <item>from my savings account<tag> out = "checking"; </tag></item>
        </one-of>
</rule>
```

Justification:
A: Requires input "checking" and outputs "from my checking account"
C: Input is "withdraw" with output "take out"
D: Input "checking" outputs "savings". Or input "savings" outputs "savings".

Changed to c.1

Given the input "cheeseburger," which rule will produce the output meal = 014?

A.

<rule id = "meal">

<one-of>

<item>cheeseburger <tag> assign name="cheeseburger" expr="014" </tag></item>

<item>hamburger<tag> assign name="hamburger" expr="027" </tag></item>

<item>garden burger<tag> assign name="garden burger" expr="034" </tag></item>

<one-of>

</rule>

B.

<rule id = "meal">

<one-of>

<item>cheeseburger <tag> out="cheeseburger = 014" </tag></item>

<item>hamburger<tag> out="hamburger = 027" </tag></item>

<item>garden burger<tag> out="garden burger = 034" </tag></item>

<one-of>

```
</rule>


C.

<rule id = "meal">

<one-of>

<item>014 <tag> out="cheeseburger" </tag></item>

<item>027<tag> out=" hamburger" </tag></item>

<item>034<tag> out="garden burger" </tag></item>

<one-of>

</rule>


*D.

<rule id = "meal">

<one-of>

<item>cheeseburger <tag> out="014" </tag></item>

<item>hamburger<tag> out="027" </tag></item>

<item>garden burger<tag> out="034" </tag></item>

<one-of>

</rule>
```

Justification:
B, C, D: Incorrect notation.

Which is a grammar rule that accepts a shirt size of small, medium, or large?

A.   <rule id = size"›
                        <one-of>
            small
            medium
            large
                     </one-of>
</rule>

   B.   <rule id = "size"›
            <one-of>
                    <option> small </option>
                    <option> medium </option>
                    <option> large </option>
            </one-of>
          </rule>

   *C. <rule id = "size"›
      <one-of>
                     <item> small </item>
            <item> medium </item>
            <item> large </item>
            </one-of>
          </rule>

    D. <rule id = "size">
                 <select>
                     <item>
                  small</item>
                     <item> medium

```
</item> <item> large
</item> </select>
</rule>
```

Objective: [list] (VXML.3.28) Write an SRGS XML grammar.
Item: VXML.3.28.b. 1
Reviewed by: X- MHenry, √ DSchake
Revised Material: x
 x
Original Material: √ **- some minor typos corrected**

Which is a grammar rule for a seven-digit telephone number?

A.   <rule id = "phone_number>

```
<one-of>
        <item> 0 </item>
        <item> 1 </item>
        <item> 2 </item>
        <item> 3 </item>
        <item> 4 </item>
        <item> 5 </item>
        <item> 6 </item>
        <item> 7 </item>
        <item> 8 </item>
        <item> 9 </item>
</one-of>
</rule>
```

*B. <rule id = "phone_number>
```
        <item repeat="7-7"> <ruleref uri = "#digits"/></item>
        </rule>
```

```
            <rule id = "digits"›
                <one-of>
                        <item> 0 </item>
                        <item> 1 </item>
                        <item> 2 </item>
                        <item> 3 </item>
                        <item> 4 </item>
                        <item> 5 </item>
                        <item> 6 </item>
                        <item> 7 </item>
                        <item> 8 </item>
                        <item> 9 </item>
                    </one-of>
            </rule>




    C. <rule id = "phone_number">
                    <ruleref uri = "digits"/>
                    <ruleref uri = "phone_number"/>
            </rule>

            <rule id= "digits"›
                    <ruleref = "phone_number">
                    <one-of>
                            <item> 0 </item>
                            <item> 1 </item>
                            <item> 2 </item>
                            <item> 3 </item>
                            <item> 4 </item>
                            <item> 5 </item>
                            <item> 6 </item>
                            <item> 7 </item>
                            <item> 8 </item>
                            <item> 9 </item>
                    </one-of>
            </rule>
    D.  <rule id = "phone_number">
            <one-of>
            <item repeat="7">0 </item>
            <item repeat="7">1 </item>
            <item repeat="7">2 </item>
```

```
            <item repeat="7">3 </item>
            <item repeat="7">4 </item>
            <item repeat="7">5 </item>
            <item repeat="7">6 </item>
            <item repeat="7">7 </item>
            <item repeat="7">8 </item>
            <item repeat="7">9 </item>
          </one-of>
      </rule>
```

Justification:
A: This rule will only return one digit
B: the 'digits' rule calls the phone_number rule recursively but with no restriction to allow for 7 digits only
D: This rule selects one item and repeats it seven times e.g. 1111111

You have a grammar rule named color that contains 7 values, and a grammar rule named size that contains 6 values.

Which grammar rules will recognize 42 color-size pairs?

```
    *A. <rule id = "pairs">
                    <ruleref uri= "#color"/>
                    <ruleref uri= "#size"/>
            </rule>

      B.       <rule id= "pairs">
                    <one-of>
                            <ruleref uri= "#color"/>
                            <ruleref uri= "#size"/>
                    </one-of>
```

```
        </rule>

C.      <rule id= "pairs">
            <one-of>
            <ruleref uri= "#size"/>
            <ruleref uri= "ftcolor"/>
            </one-of>
      </rule>


   C.      <rule id= "pairs">
               <one-of>
               <item> <ruleref uri= "#color"/> <ruleref uri= "#size"/> </item>
               <item> <ruleref uri= "#size"/> <ruleref uri= "#color"/> </item>
               </one-of>
           </rule>
```

Justification:
B: This rule will only select either a color or a size
C: 'ftcolor' does not reference a color rule
D: This rule selects one item consisting of a color and a size or an item consisting of a size and a color.

Objective: [list] (VXML.3.28) Write an SRGS XML grammar.
Item: VXML.3.28.d. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: x
 x
Original Material: √

Which grammar rule recognizes exactly these phrases?

good

very good
very very good
very very very good

A. <rule id = "good">
    <item repeat="3-"> very </item>
    good
</rule>

B. <rule id = "good">
    <item repeat="1-"> very </item>
    good
</rule>

*C. <rule id = "good">
    <item repeat="0-3"> very </item>
    good
</rule>

D. <rule id = "good">
    <item repeat="1-3"> very </item>
    good
</rule>

Justification:
A: This rule will repeat 'very' 3 or more times.
B: This rule will repeat 'very' one or more times, will not allow zero repeats
D: This rule will repeat 'very' between 1 and 3 times, will not allow zero repeats

---

Which grammar rule accepts the following phrases?

San Francisco California
San Francisco in the state of California
San Francisco in the state of sunny California

Philadelphia Pennsylvania
Philadelphia in the state of Pennsylvania
Philadelphia in the great state of Pennsylvania

A. <rule id = "location">
        <ruleref uri = "#city"/>
        <ruleref uri = "GARBAGE"/>
        <ruleref uri = "#state"/>

    </rule>

*B. <rule id = "location">
        <ruleref uri = "#city"/>
        <ruleref special = "GARBAGE"/>
        <ruleref uri = "#state"/>
    </rule>

C. <rule id = "location">
        <ruleref uri = "#city"/>
        <ruleref special = "VOID"/>
        <ruleref uri = "#state"/>
    </rule>

D. <rule id = "location">
    <ruleref uri = "#city"/>
    <ruleref special = "#GARBAGE"/>
    <ruleref uri = "#state"/>
    </rule>

Justification:
MMcTear A: Re-written to avoid issue with NULL. Should be 'special', not 'uri'
C: VOID defines a rule that can never be spoken.
D: # is not used with GARBAGE.

Objective: [list] **(VXML.3.28) Write an SRGS XML grammar.**
Item: **VXML.3.28.f. 1**
Reviewed by: X- MHenry, √ DSchake
Revised Material: x

You have an external grammar stored at "http://www.mygrammar.com/example3.grxml" that contains a public rule named "states".

Which grammar rule directly invokes the 'states' rule?

    A. <rule>
                <ruleref uri = "http://www.mygrammar.com/example3.grxml"/>
        </rule>

   *B. <rule>
                <ruleref uri = "http://www.mygrammar.com/example3.grxml#states"/>
        </rule>

    C.   <rule>
                <ruleref uri =
        "http://www.mygrammar.com/example3.grxml.states"/>
        </rule>

    D.   <rule>
                <ruleref uri =
        "http://www.mygrammar.com/example3.grxml/states"/>
        </rule>

Justification:
A: The "states" rule is not referenced.
C: The "states" rule should be referenced using #.
D: The "states" rule should be referenced using #.

Objective: [list] **(VXML.3.29) Given a scenario, write a hierarchy of grammar rules.**
Item: **VXML.3.29.a. 1**

Given the following rules for 'size' and 'color' and a rule for 'clothes' specified in an external grammar 'inventory.grxml':

```
<rule id="size" scope="public">
<one-of>
   <item>small</item>
   <item>medium</item>
   <item>large</item>
   </one-of>
</rule>

<rule id="color" scope="public">
<one-of>
   <item>red</item>
   <item>blue</item>
   <item>green</item>
 </one-of>
</rule>
```

Which grammar root rule would match the utterance "large green shirt"?

A. `<rule id="root" scope="public">`
`<ruleref src="#size"/>`
`<ruleref src="#color"/>`
`<ruleref src="http://www.acme.com/inventory.grxml#clothes"/>`
`</rule>`

*B. `<rule id="root" scope="public"›`
`<ruleref uri="#size"/>`
`<ruleref uri="#color"/>`
`<ruleref uri="http://www.acme.com/inventory.grxml#clothes"/>`
`</rule>`

C.

`<rule id="root" scope="public">`
`<ruleref name="#size"/>`
`<ruleref name="#color"/>`
`<ruleref name="http://www.acme.com/inventory.grxml#clothes"/>`
`</rule>`

D.   `<rule id="root" scope="public">`
        `<ruleref import="#size"/>`
        `<ruleref import="#color"/>`
        `<ruleref import="http://www.acme.com/inventory.grxml#clothes"/>`
        `</rule>`

Justification:
A: 'src' is not correct way to reference a grammar rule.
C: 'name is not correct way to reference a grammar rule.
D: 'import is not correct way to reference a grammar rule.

Objective: [list] **(VXML.3.29) Given a scenario, write a hierarchy of grammar rules.**
Item: **VXML.3.29.b. 1**
Reviewed by: X- MHenry, X-DSchake
Revised Material: x
  x
Original Material: √ *: with minor corrections*

Given the following rules for 'size' and 'color' and a rule for 'clothes' specified in an external grammar 'inventory.grxml':

```
<rule id="size" scope="public">
  <one-of>
  <item>small</item>
  <item>medium</item>
  <item>large</item> </one-of>
</rule>

<rule id="color" scope="public">
  <one-of>
  <item>red</item>
  <item>blue</item>
  <item>green</item>
  </one-of>
</rule>
```

Which grammar root rule would match the utterance: "small blue shirt"?

A. <rule id="root" scope="public">
    <ruleref import="#size"/>
    <ruleref import="#color"/>
    <ruleref import="http://www.acme.com/inventory.grxml#clothes"/>
    </rule>

*B. <rule id="root" scope="public">
    <ruleref uri="#size"/>
    <ruleref uri="#color"/>
    <ruleref uri="http://www.acme.com/inventory.grxml#clothes"/>
    </rule>

C. <rule id="root" scope="public">
    <ruleref special="#size"/>
    <ruleref special="#color"/>
    <ruleref special="http://www.acme.com/inventory.grxlm?clothes"/>
    </rule>

D. <rule id="root" scope="public">
    <ruleref url="#size"/>
    <ruleref url="#color"/>
    <ruleref url="http://www.acme.com/inventory.grxml?clothes"/>
    </rule>

Justification:
A: 'import' is not correct way to reference a grammar rule.
C: 'special' is not correct way to reference a grammar rule, should use # instead of ?
D: 'url' is not correct way to reference a grammar rule, should use # instead of ?

Objective: [list] (VXML.3.29) Given a scenario, write a hierarchy of grammar rules.
Item: VXML.3.29.c. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: √ In original 1 and 3 were the same, and 2 and 4 were the same
 x
Original Material: x

Given the following SRGS code fragment:

<rule id="clothes" scope="public">

```
  <one-of>
  <item>shirt</item>
  <item>pants</item>
  </one-of>
 </rule>
```

Which grammar root rule will match "white shirt" and "white pants"?

*A. <rule id="root" scope="public"›
    white
    <ruleref uri="#clothes"/>
    </rule>

B. <rule id="root" scope="public">
    white
    <rule uri="clothes"/>
    </rule>

C. <rule id="root" scope="public"›
    white
    <rule src="#clothes"/>
    </rule>

D. <rule id="root" scope="public">
    white
    <ruleref uri="#pants"/>
    </rule>

Justification:
B: # should be used to reference the rule 'clothes'.
C: 'uri' is used to reference a grammar rule
D: 'pants' is not a rule, the reference should be to 'clothes'

Given the following grammar:

> <grammar version = "1.0" xmlns=http://www.w3.org/2001/06/grammar xml:lang="en-US" root="t_shirt">
>
> <rule id = "t_shirt">
>   <ruleref uri = "#color"/>
>   <ruleref uri = "#size"/>
> </rule>
>
> <rule id = "color"›
>   <one-of>
>   <item> green </item>
>   <item> blue </item>
>   </one-of>
> </rule>
> <rule id = "size"›
>   <one-of>
>   <item> large </item>
>   <item> medium </item>
>   </one-of>
> </rule>

</grammar>

Which speech input produces the associated output?

	Speech input:		Output:
A.	large green	*produces*	large green
B.	blue medium	*produces*	medium blue
* C.	blue large	*produces*	blue large
D.	medium green	*produces*	medium green

Justification:
A: The top level rule specifies color before size..

B: The output should match the input – 'blue medium'
D: The top level rule specifies color before size.

Given the following grammar:

    <grammar version = "1.0" xmlns=http://www.w3.org/2001/06/grammar xml:lang="en-US"
    tag-format="semantics/1.0" root="city">

    <rule id = "city">
            <one-of>
                  <item> Seattle </item>
                   <item> Emerald City <tag>out="Seattle"; </tag></item>
                  <item> Portland </item>
                   <item> Rose City <tag>out="Portland"; </tag> </item>
            </one-of>
    </rule>
</grammar>

Which speech input produces the associated output?

	Speech input:		Output:
*A	Emerald City	*produces*	Seattle
B.	Seattle	*produces*	Emerald City
C.	Portland	*produces*	Rose City
D.	Rose City	*produces*	Rose City

Objective: [list] (VXML.3.30) Given specific input and a grammar, determine the resulting output.*Item:* VXML.3.30.c. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: √
 x
Original Material: x

Given the following grammar:

```
<grammar version = "1.0" xmlns=http://www.w3.org/2001/06/grammar xml:lang="en-US"
root="car">

<rule id = "car">
            <item>a</item>
            <item repeat="0-3">very</item>
            <item>cheap</item>
            <item>car</item>
</grammar>
```

Which speech input produces the associated output?

	Speech input:		Output:
A.	a very cheap car	*produces*	a cheap car
B.	a cheap car	*produces*	no match
*C.	a very very very cheap car	*produces*	a very very very cheap car
D.	a very cheap car	*produces*	no match

Justification:
A: it produces 'a very cheap car'
B: it produces 'a cheap car'
D: it produces 'a very cheap car'

Objective: [list] (VXML.3.31) Given specific input and output, choose the correct grammar.
Item: VXML.3.31.a. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: √
 x
Original Material: x

Which grammar rule accepts the following input and produces the indicated output?

Spoken input	Text output
New York	New York
Big Apple	New York
Washington	Washington
The Capital	Washington

A.   \<rule id = "city>
            \<one-of>
                    \<ruleref uri= "#NewYork">
                    \<ruleref uri= "Washington"›
            \</one-of>
            \</rule>

    \<rule id = "NewYork>
        \<one-of>
                \<item> New York \</item>
                \<item> Big Apple \</item>
                \</one-of>
    \</rule>

    \<rule id = "Washington"›
        \<one-of>
                \<item> Washington \</item>

```
                    <item> The Capital </item>
                    </one-of>
            </rule>

    B.        <rule id = "city">
                <one-of>
                        <item> New York </item>
                        <item> Big Apple </item>
                </one-of>
            </rule>

            <rule id = "Washington">
                <one-of>


                        <item> Washington </item>
                        <item> The Capital </item>
                </one-of>
            </rule>

*C. <rule id = "city">
                <one-of>
                        <item> New York </item>
                        <item> Big Apple <tag>out="New York"; </tag></item>
                        <item> Washington </item>
                        <item> The Capital <tag>out="Washington"; </tag></item>
                </one-of>
            </rule>

        D. <rule id = "city">

                <one-of>
                        <item> New York </item>
                        <item> Big Apple
                            <tag>
                                <assign name="city" value="New York"/>
                            </tag>
                        </item>
                        <item> Washington </item>
                        <item> The Capital
                            <tag>
                                <assign name="city" value="New York"/>
                            </tag>
                        </item>
                </one-of>
            </rule>
```

Objective: [list] (VXML.3.31) Given specific input and output, choose the correct grammar.
Item: VXML.3.31.b. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: √
 x
Original Material: x

Which grammar rule accepts the following input and produces the indicated output?

Spoken Input	Text Output
Paris	Paris
Paris France	France
Paris Canada	Canada

A. <rule id = "city">
    <item> Paris </item>
    <one-of>
        <item> France</item>
        <item> Canada </item>
    </one-of>
</rule>

B. <rule id = "city">
 <ruleref special = <one-of>
    <item> France <item> Canada </one-of>
  </rule>

C.   `<rule id = "city"›`
      `<one-of>`
          `<item> Paris </item>`
          `<item> France </item>`
          `<item> Canada </item>`
          `</one-of>`
        `</rule>`

*D. `<rule id = "city"›`
      `<one-of>`
          `<item> Paris </item>`
          `<item> Paris France<tag> out="France"; </tag></item>`
          `<item> Paris Canada<tag> out="Canada"; </tag>`
          `</item>`
         `</one-of>`
         `</rule>`

Justification:
A: Does not accept 'Paris France' or 'Paris Canada' as input'
B: Does not accept 'Paris France' or 'Paris Canada' as input, also ruleref special is not valid
C: Does not accept 'Paris France' or 'Paris Canada' as input

Objective: [list] (VXML.3.31) Given specific input and output, choose the correct grammar.
Item: VXML.3.31.c. 1
Reviewed by: √ - MHenry, √ DSchake
Revised Material: x
 √
Original Material: x

Which grammar rule accepts the following input and produces the indicated output?

Spoken Input	Text Output
Michael	Michael
Mike	Michael

Jonathan   Jonathan
Johnny   Jonathan

A.   <rule id = "name"›
         <one-of>
             <item>Michael</item>
             <item>Jonathan</item>
              <item>Mike</item>
             <item>Johnny</item>
          </one-of>
      </rule>

*B. rule id = "name"›
        <one-of>
                <item>Michael</item>
                <item>Mike<tag>out="Michael";</tag></item>
                <item>Jonathan</item>
                <item>Johnny<tag> out="Jonathan"; </tag>
                </item>
              </one-of>
                </rule>

C.   <rule id = "name"›
            <one-of>
              <item>Michael</item>
              <item>Mike<tag>Michael</tag></item>
              <item>Jonathan</item>
              <item>Johnny<tag>Jonathan</tag>
              </item>
            </one-of>
         </rule>

D.   <rule id = "name"›
       <one-of>
            <item>Michael</item>
            <item>Mike <tag>assign name="Michael"</tag></item>
            <item>Jonathan</item>
            <item>Jonathan<tag>assign name="Jonathan"</tag></item>
            </one-of>
           </rule>

Objective: (VXML.3.33) Use a combination of VoiceXML and SSML tags to create a prompt with alternate text.
Item: VXML3.33.b.1
Reviewed by: √ MHenry, Mike McTear √, Dustin Hayre √

Given the following:
 Audio file: tel.wav text for the audio file: "Your telephone number is"
 Audio file: correct.wav text for the audio file: "Is that correct?"
 VoiceXML variable: tel_no value of tel_no: "8005551212"

 Goals:

 Play to the caller "Your telephone number is 8 hundred 5 5 5 1 2 1 2. (pause for 1 second) Is that correct ?'
The text for each of the audio file should be played in case the audio file cannot be found.
 Use the VoiceXML variable for the telephone number.

Which code fragment achieves the desired result?

  A. <audio src="tel.wav"> "tel.wav" </audio>
    <say-as interpret-as="number" format="telephone">
     tel_no
    </say-as>[SEP]
    <break strength="weak"/>[SEP]
    <audio src="correct.wav"> Is that correct? </audio>

 *B. <audio src="tel.wav"> Your telephone number is </audio>
    <say-as interpret-as="number" format="telephone">
     <value expr="tel_no"/>

```
</say-as>⌐SEP⌐
<break time="l000"/>
<audio src="correct.wav"> Is that correct? </audio>
```

C.
```
<audio src="tel.wav"> Your telephone number is </audio>
  <say-as interpret-as="number" format="digits">
    8005551212
  </say-as>
  <break time="ls"/>
  <audio src="correct.wav">
    <value expr="correct.wav"/>
  </audio>
```

D.
```
<audio src="tel.wav"> Your telephone number is </audio>
  <say-as interpret-as="number" format="telephone">
    <value expr="tel_no"/>
  </say-as>⌐SEP⌐
  <break time="l second"/>
  <audio src="correct.wav"> Is that correct? </audio>
```

Justification for correct answer: Answer A does not have the tel_no variable contained in a value block. Answer C has the telephone number hard coded and is also not contained in a value block. Answer D has an improper value for the break time.

Given the following VoiceXML code fragment:

`<prompt> Please enter your telephone number now. </prompt>`

Which code plays the above prompt in a male voice with an emphasis on the word "now"?

A. ```
<prompt>
    <voice name="mike">
  Please enter your telephone number <emp> now </emp>.
    </voice>
 </prompt>
```

B. ```
<prompt>
    <voice gender="female">
  Please enter your telephone number <emphasis> now </emphasis>.
    </voice>
 </prompt>
```

*C. ```
<prompt>
  <voice gender="male">
   Please enter your telephone number <emphasis> now </emphasis>.
    </voice>
 </prompt>
```

D. ```
<prompt>
  <voice gender="male">
     Please enter your telephone number <emp> now </emp>.
    </voice>
 </prompt>
```

Justification for correct answer: Answer C contains the correct gender value and emphasis tags.

Given the following VoiceXML code fragment:
`<prompt>`[SEP]

I am now going to ask you to count to 5.
[＿＿＿＿＿]⌊SEP⌋
Times Up!
</prompt>⌊SEP⌋

Which code should be placed in the empty brackets to synthesize a pause of 5 seconds?

 A. <break length="5s"/>

*B. <break time="5s"/>

 C. <break duration="5000"/>

 D. <break time="5 seconds"/>

Justification for correct answer: time is the correct attribute to use with break and seconds are represented with a lower case s not the entire word seconds.

Objective: (VXML.3.33) Use a combination of VoiceXML and SSML tags to create a prompt with alternate text. **item: VXML.3.33.e.1 (No existing question from previous documentation)** **Reviewed by: √-MHenry, Mike McTear √, Dustin Hayre √**

Given the following examples, which fragment causes the text to speech to be read back at a slower than normal rate.

A. <prompt>
   <prosody time="long">
     I am talking to you at a slower rate.
   </prosody>
  </prompt>

 B. <prompt>

```
        <speed expr="slow">
      I am talking to you at a slower rate.
        </speed>
    </prompt>

*C. <prompt>
    <prosody rate="slow">
      I am talking to you at a slower rate.
    </prosody>
    </prompt>

 D. <prompt>
        <prosody duration="long">
      I am talking to you at a slower rate.
    </prosody>
    </prompt>
```

> *Justification for correct answer: The prosody element is used to change the presentation of TTS and the correct attribute for changing the speed at which the TTS is read back is rate.*

Objective: (VXML.3.33) Use a combination of VoiceXML and SSML tags to create a prompt with alternate text.
item: VXML.3.33.f.1 (No existing question from previous documentation)
Reviewed by: X- MHenry, Mike McTear √, Dustin Hayre √

Given the following prosody element:

```
<prosody duration="[_____]">
  I am happy to speak with you today.
</prosody>
```

Which one of the following can be placed in the blank as a valid value for the duration attribute:

 A. short

*B. 3s

C. x-short

D. longer

Justification for correct answer: The duration attribute takes a value in seconds or milliseconds.

Objective: (VXML.3.33) Use a combination of VoiceXML and SSML tags to create a prompt with alternate text.
item: VXML.3.33.g.1 (No existing question from previous documentation)
Reviewed by: √- MHenry, Mike McTear √, Dustin Hayre √

Which of the following statements best describes the reason for using a <phoneme> element?

A. Provides a phone number for a call transfer.

B. Provides a means of raising or lowering the volume of the spoken text.

C. Restrict input to DTMF only.

*D. Provides a phonetic pronunciation for the spoken text.

Justification for correct answer: The phoneme element allows the developer to use phonetic alphabets to provide pronunciation for TTS.

Given the following VoiceXML code fragment:

```
 <var name="counter" expr="0"/>
<var name="second_counter" expr="counter+10"/>

<form id="forml">
 <block>
  <script>
   <![CDATA[
    counter = counter+100;
    second_counter = second_counter + 100;
    ]]>
  </script>
 </block>
 <field name="fieldl" type="digits?length=2">
  <prompt> please say some digits </prompt>
  <filled>
   <assign name="second_counter" expr="counter"/>
   <script>
    <![CDATA[
     second_counter = second_counter + 200;
     ]]>
   </script>
   <log expr="'second counter = ' + second_counter"/>
  </filled>
 </field>
</form>
```

 What is the value of the second counter variable when the VoiceXML application executes in full?

A) 10
B) 110
C) 200

*D) 300

Justification: variable value is reassigned in second script

Given the following VoiceXML document:

```
<vxml xmlns="http://www.w3.org/2001/vxml" version="2.1">
 <var name="v1" expr="'35'"/>
 <var name="v2" expr="'404'"/>
<form>
 <block>
  <assign name="v1" expr="v2 + 16"/>
  <assign name="v2" expr="v1 + 12"/>
  <log expr="'!! document.v1 = ' + document.v1"/>
  <log expr="'!! document.v2 = ' + document.v2"/>
 </block>
</form>
</vxml>
```

What is the value of the document-scoped variable "v1" when the VoiceXML finished executing in full?

A) 51
* B) 420
C) 47
D) 28

Justification: Math, bitches.

Given the following VoiceXML document:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">
  <var name="v1" expr="0"/>
  <var name="v2" expr="0"/>
 <form>
  <block>
   <assign name="v1" expr="407"/>
   <assign name="document.v2" expr="321"/>
  </block>
  <block>
   <log expr="'!! document.v1 = ' + document.v1"/>
  </block>
 </form>
</vxml>
```

What is the value assigned to the variable "document.v1" within the <log> element?

A) 407
* B) 0
C) 321
D) undefined

Justification: Assignment of value to this variable in the first block is irrelevant, as it does not assign a document scoped value.

Objective: (VXML.3.35) Set and access variables in VoiceXML and ECMAScript.
Item: VXML.3.35.d.1
Reviewed by: Garrett King - No problems, Dustin - no issues

Given the following VoiceXML code:

```
1:  <vxml version="2.1">
2:  <var name="v1" expr="62"/>
3:  <var name="child.v1" expr="788"/>
4:  <var name="application.v1" expr="645"/>
5:  <form>
6:   <block>
7:    <prompt> Hello World! </prompt>
8:   </block>
9:  </form>
10: </vxml>
```

Which line will be flagged as the one containing an error when this VoiceXML document is executed?

A) Line 1
B) Line 2
*C) Line 3
D) None of the above.

Justification: Assigning an arbitrary variable name prefix is disallowed.

Given the following VoiceXML code:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">

<catch event="error. semantic">
 <prompt>caught an error semantic event</prompt>
</catch>

<catch event="error.badfetch">
 <prompt>caught an error bad fetch event</prompt>
</catch>

<var name="var2" expr="10"/>

<form id="forml">
 <block>
  <assign name="counter" expr="10"/>
  <script>
        counter = counter + 200;
  </script>

  <prompt>
   The counter value is <value expr="counter"/>
  </prompt>
 </block>
</form>
</vxml>
```

What will the caller hear when this VoiceXML code is executed?

A) "The counter value is 10"
B) "The counter value is 210"

*C) "Caught an error semantic event"
D) "Caught an error bad fetch event"

Justification: As the variable "counter" is being assigned a value without being previously declared, and error.semantic event will be generated & trapped.

Given the following VoiceXML code segment:

```xml
<?xml version="1.0" encoding="UTF-8"?>

<vxml version="2.0">
 <var name="counter" expr="0"/>

 <form id="forml">
  <block>
   <script>
    counter = counter+1;
   <script>

   <goto next="#form2"/>
  </block>
 </form>

<form id="form2">
  <block>
   <assign name="counter" expr="counter+2"/>
   <if cond="counter &lt; 10">
    <goto next="#form1"/>
    <else/>
     <prompt> the value of the counter is <value expr="counter"/></prompt>
   </if>
  </block>
 </form>
</vxml>
```

What is the value of the "counter" variable when this VoiceXML document executes?

A) 5
B) 10
C) 11
*D) 12

Justification: Math once again. The conditional statement requires the app to loop until the value is greater than 10, and the var is incremented by 2 each loop.

Which of the following is the correct property that will cause audio files to be preloaded from the server.

 A. <property name="audiofetch" value="safe">

 B. <property name="fetchaudio" value="prefetch">

*C. <property name="audiofetchhint" value="prefetch">

 D. <property name="fetchaudiohint" value="safe">

Justification for correct answer: A, B and D are all incorrect attributes. A and D also would not preload the audio files.

Which of the following is the correct property that will cause documents to be fetched when needed.

 A. <property name="documentfetch" value="safe">

*B. <property name="documentfetchhint" value="safe">

 C. <property name="fetchdocumenthint" value="safe">

 D. <property name="documentfetch" value="prefetch">

Justification for correct answer: A, C and D are all incorrect attributes, also D will preload the document if the attribute were correct.

Objective: (VXML.4.1.0) Use fetching and caching properties and attributes.
Item: VXML.4.1.0.c.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Which of the following is the correct property that will cause audio to be cached on the server for two minutes.

 A. <property name="audiocacheage" value="120s">

*B. <property name="audiomaxage" value="120s">

 C. <property name="audiocachelength" value="120s">

 D. <property name="cacheaudioage" value="120s">

Justification for correct answer: A, C and D are all incorrect attributes.

Which of the following is the correct property that will cause documents to be cached on the server for thirty seconds.

 A. <property name="maxdocumentage" value="30s">

 B. <property name="documentage" value="30s">

*C. <property name="documentmaxage" value="30s">

 D. <property name="documentagemax" value="30s">

Justification for correct answer: A, B and D are all incorrect attributes.

Given the following code fragment choose the appropriate attribute to fill in the blank which will instruct the server to fetch the audio when the document is initialized.

```
<form id="form1">
 <block>
  <prompt>
```

```
          <audio src="myaudiofile.wav" [_____]>
      </prompt>
    </block>
 </form>
```

A. audiofetch="prefetch"

B. fetchaudio="prefetch"

C. fetchhint="safe"

*D. fetchhint="prefetch"

Justification for correct answer: A and B are incorrect attributes, C will not preload the audio file when the document is initialized.

Objective: (VXML.4.1.0) Use fetching and caching properties and attributes.
Item: VXML.4.1.0.f.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Given the following code fragment choose the appropriate attribute to fill in the blank which will instruct the server to cache the audio for one hour.

```
 <form id="form1">
  <block>
    <prompt>
      <audio src="myaudiofile.wav" [_____]>
    </prompt>
  </block>
 </form>
```

A. audiomaxage="3600s"

B. maxage="1h"

*C. maxage="3600s"

D. audiomaxage="60m"

Objective: (VXML.4.2.0) Identify errors and fixes in ECMAScript code.
Item: VXML.4.2.0.a.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Given the following ECMAScript identify the error and choose the corrections.

```
function sumNumbers(number) {
  var result = 0;
  if (number>0)
    for (var i=1;i<=number;i++) {
      result = result + i;
        }
  }
  return (result);
 }
```

Choose 2

A. for (var i=1;i<=number;i=i+1) {

*B. if (number>0) {

C. var result == 0;

D result == result + i;

Objective: (VXML.4.2.0) Identify errors and fixes in ECMAScript code.
Item: VXML.4.2.0.b.1
Reviewed by: √ - MHenry Mike McTear √, Dustin Hayre √

Given the following ECMAScript identify the error and choose the correction.

```
function concatenate(word1, word2)
  var concatenated;
    if (typeof(word1) == "string" && typeof(word2) == "string") {
        concatenated = word1.concat(word2);
      }
  return (concatenated);
}
```

A. concatenated == word1.concat(word2);

B. return (word1);

*C. function concatenate(word1, word2) {

D. if (typeof(word1) == "string" || typeof(word2) == "string") {

Given the following ECMAScript choose the one with no errors.

```
*A. function area(width, height) {
        var area;
        if (width > 0 && height > 0) {
          area = width * height;
        }
        return (area);
   }
```

```
B. function area(width, height) {
        var area;
        if (width >> 0 && height >> 0) {
          area = width * height;
        }
        return (area)
   }
```

```
C. function area(width, height) {
        var area;
        if (width > 0 && height > 0) {
          area == width * height;
        }
        return (area);
   }
```

```
D. function area(width, height) {
        var area;
        if width > 0 && height > 0
          area = width * height;
        }
        return (area);
   }
```

Objective: (VXML.4.3.0) Identify errors and fixes in VoiceXML code.
Item: VXML.4.3.0.a.1
Reviewed by: √-MHenry Mike McTear √, DHayre √

Which of the following code fragments contains no errors:

A.
```
<form id="Form1">
 <block>
   <var name="SecurityCodeNext" expr="#Form2"/>
   <prompt>Hello.<prompt>
 <block>
 <field name="SecurityCode" type="digits?length=4">
  <prompt>
    Please enter your four digit security code.
  <prompt>
  <catch event="noinput nomatch">
    <reprompt/>
  <catch>
  <filled>
    <log expr="'Security Code:' + SecurityCode"/>
    <goto expr="SecurityCodeNext"/>
  <filled>
 </field>
</form>
```

*B.
```
<form id="Form1">
 <block>
   <var name="SecurityCodeNext" expr="'#Form2'"/>
```

```
      <prompt>Hello.</prompt>
    </block>
    <field name="SecurityCode" type="digits?length=4">
      <prompt>
        Please enter your four digit security code.
      </prompt>
      <catch event="noinput nomatch">
        <reprompt/>
      </catch>
      <filled>
        <log expr="'Security Code:' + SecurityCode"/>
        <goto expr="SecurityCodeNext"/>
      </filled>
    </field>
  </form>
```

C.
```
<form id="Form1">
  <var name="SecurityCodeNext" expr="'#Form2'"/>
  <prompt>Hello.</prompt>
  <field name="SecurityCode" type="digits?length=4">
    <prompt>
      Please enter your four digit security code.
    </prompt>
    <catch expr="noinput nomatch">
      <reprompt/>
    </catch>
    <filled>
      <log cond="'Security Code:' + SecurityCode"/>
      <goto cond="SecurityCodeNext"/>
    </filled>
  </field>
</form>
```

 D.
```
<form id="Form1">
  <block>
    <var name="SecurityCodeNext" expr="'Form2'"/>
    <prompt>Hello.<prompt>
  </block>
  <field name="SecurityCode" type="digits?length=4">
    <prompt>
      Please enter your four digit security code.
    <prompt>
```

```
  <catch event="noinput nomatch">
   <reprompt/>
  </catch>
  <filled>
   <log value="'Security Code:' + SecurityCode"/>
   <goto value="SecurityCodeNext"/>
  </filled>
 </field>
</form>
```

Objective: (VXML.4.3.0) Identify errors and fixes in VoiceXML code.
Item: VXML.4.3.0.b.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre √

Given the following code fragment identify the errors:

```
<form id="Form1">
 <block>
  <prompt>
   <audio expr="hello.wav">Hello</audio>
  </prompt>
  <goto next="Form2"/>
 </block>
</form>
```

 A. The <prompt> element should be contained within the audio element.

B. The <audio> element should use a value attribute not an expr attribute.
*C. The next attribute of the <goto> element requires a # symbol.
 D. The <form> element should use a name attribute not an id attribute.

Justification for correct answer:
A. The <prompt> element is correct and should not be enclosed in the <audio> element.
B. The <audio> element uses the correct attribute expr.
D. The <form> element uses the correct attribute id.

Objective: (VXML.4.3.0) Identify errors and fixes in VoiceXML code.
Item: VXML.4.3.0.c.1
Reviewed by: √-MHenry Mike McTear √, Dustin Hayre X

Given the following code fragment identify the errors:

```
<form id="Form1">
  <block>
    <var name="SecurityCodeNext" expr="'#Form2'"/>
    <audio expr="hello.wav">
      <prompt>Hello.</prompt>
    </audio>
  </block>
  <field name="SecurityCode" type="digits?length=4">
    <prompt>
      Please enter your four digit security code.
    </prompt>
    <catch event="noinput nomatch">
      <reprompt/>
    </catch>
    <filled>
      <log expr="'Security Code:' + SecurityCode"/>
      <goto expr="SecurityCodeNext"/>
    </filled>
  </field>
</form>
```

Choose 2:

A. The log element should have a value attribute not an expr attribute.
*B. The audio element should be contained inside the prompt element.
C. The var element should have a value attribute not an expr attribute.
D. The goto element should contain a next attribute not an expr attribute.

Justification for correct answer:
A. The <log> element uses the correct attribute expr.
B. The <prompt> element is not a child of the <audio> element.
C. The <var> element uses the correct attribute expr.
D. The <goto> element uses the correct attribute expr.

Objective: 5.1.a: fetching using the <data> element
Item: VXML.5.1.a
Reviewed by: Garrett King - No problems, Dustin - no issues

Considering the form-item data specified below:

```
<form id="F1">
 <block>
  <data name="fetchPlanets" src="MyData.xml" />
 </block>
</form>
```

What variable value would be used to expose the Document Object Model for the XML content that is fetched by the <data> element:

A. <assign name="fetchData" expr="F1.documentElement"/>
B. <assign name="fetchData" expr="myData.documentElement"/>
*C. <assign name="fetchData" expr="fetchPlanets.documentElement"/>
D. None of the above.

Justification: If the <data> name attribute is specified, the interpreter exposes the DOM through the ECMAScript variable corresponding to the value of the name attribute.

In the following VoiceXML content, what would the expected result when the application executes:

```
<vxml version = "2.1">
 <var name="fetchPlanets" />
 <form id="F1">
  <block>
   <data name="fetchPlanets" srcexpr="MyData.xml" />
    <assign name="document.fetchPlanets" expr="fetchPlanets.documentElement" />
    <log expr="document.fetchPlanets"/>
   </block>
 </form>
</vxml>
```

A. An error.badfetch event is generated and application execution ends.
B. The values of all nodes fetched from MyData.xml is populated to the "document.fetchPlanets" variable.
* C. An error.semantic is generated and application execution ends.
D. the "fetchPlanets" variable is assigned a value of "MyData.xml".

Justification: If srcexpr cannot be evaluated, error.semantic is thrown.

What is the proper method to specify a source expression for the <data> element for the
following target:

 <var name="fetchTarget" expr="'http://MainServer.com/sourceFile.xml'"/>

A. <data name="fetchNames" srcexpr=" 'fetchTarget' " />
B. <data name="fetchNames" srcexpr="http://MainServer.com/sourceFile.xml" />
C. <data name="fetchTarget" srcexpr="fetchNames" />
* D. <data name="fetchNames" srcexpr="fetchTarget" />

Justification: The interpreter evaluates the srcexpr attribute as an ECMAScript expression when
the <data> element needs to be executed. The result of evaluating the srcexpr attribute is the
URI to be fetched.

When the following execution of the <data> tag occurs:

```
<vxml version = "2.1">
 <var name="fetchPlanets" />
 <form id="F1">
  <block>
   <data name="fetchPlanets"/>
    <assign name="document.fetchPlanets" expr="fetchPlanets.documentElement" />
    <log expr="document.fetchPlanets"/>
   </block>
```

```
 </form>
</vxml>
```

What would be the expected result during execution?

* A. An error.badfetch would be thrown.
B. The "document.fetchPlanets" variable would be populated with an empty string value.
C. The "document.fetchPlanets" variable would be populated with an empty string value, and an error.semantic would be thrown.
D. The "document.fetchPlanets" variable would be populated with an string value based upon the content that is fetched, and execution would inherently cease once the <log> statement is printed.

Justification: Exactly one of "src" or "srcexpr" must be specified; otherwise, an error.badfetch event is thrown.

Objective: fetching using the <data> element
Item: VXML.5.1.e
Reviewed by: Garrett King - No problems, Dustin - no issues

When execution reaches the second <form> in the below VoiceXML application, what value would be applied to the "myResult" variable?

```
<vxml version = "2.1" encoding="UTF-8">
 <form id="F1">
 <var name="fetchPlanets" />
 <var name="myResult"/>

  <block>
   <data name="fetchPlanets" src="MyData.xml" />
   <goto next="#F2"/>
  </block>
 </form>

<form id="F2">
```

```
<script>
<![CDATA[
 function GetData(d, t) {
  return (d.getElementsByTagName(t).item(0).firstChild.data);
 }
]]>
</script>

 <block>
  <assign name="document.fetchPlanets" expr="fetchPlanets.documentElement" />
  <assign name="myResult" expr="GetData(fetchPlanets, 'child1')"/>
 </block>
</form>
</vxml>
```

```
== MyData.xml ==
<?xml version="1.0" ?>
<xml>
<parent>
<child1>Mercury</child1>
<child2>Venus</child2>
<child3>Earth</child3>
<child4>Mars</child4>
</parent>
</xml>
```

A. Earth
B. Mercury
C. An empty string
*D. No value would be applied; an error.semantic would be thrown.

Justification: The <data> element shares the same scoping rules as the <var> element. The <assign> in the 2nd form above occurs out-of-variable scope.

Objective: fetching using the <data> element

In the application code below, once the <data> element executes, how will control be returned to the VoiceXML document to then execute the contents within block name "B_2" once the data fetch has been completed?

```
<vxml version = "2.1">
 <var name="fetchPlanets" />
 <form id="F1">
  <block name="B_1">
   <data name="fetchPlanets" src="MyData.xml" />
    <assign name="document.fetchPlanets" expr="fetchPlanets.documentElement" />
   </block>

   <block name="B_2">
    <log expr="document.fetchPlanets"/>
   </block>
 </form>
</vxml>
```

A. The developer would need to insert <goto next="#B_2"/> within the "B_1" block.
B. The developer would need to insert <goto nextitem="B_2"/> within the "B_1" block.
C. The "MyData.xml" document would need a <goto nextitem="B_2"/> added to return execution back to the invoking document.
*D. None of the above.

Justification: The <data> element allows a VoiceXML application to fetch arbitrary XML data from a document server without transitioning to a new VoiceXML document.

What is the proper method to specify a source expression for the <data> element for the

following target:

```
<var name="fetchTarget" expr="'http://MainServer.com/sourceFile.xml'"/>
```

A. <data name="fetchNames" srcexpr="'fetchTarget'" />
B. <data src="fetchNames" srcexpr="'http://MainServer.com/sourceFile.xml'" />
C. <data src="fetchNames" srcexpr="fetchTarget" />
* D. <data name="fetchNames" srcexpr="fetchTarget" />

Justification: The interpreter evaluates the srcexpr attribute as an ECMAScript expression when the <data> element needs to be executed. The result of evaluating the srcexpr attribute is the URI to be fetched.

Objective: fetching using the <data> element
Item: VXML.5.1.h
Reviewed by: Garrett King - No problems, Dustin - no issues

For the following application code:

```
<form id="F1">
 <block>
  <var name="myVar" expr="'22 + 5'"/>
  <data name="fetchPlanets" src="http://myServer.com/applications/MyData.php"
namelist="myVar" method="get"/>

 </block>
</form>
```

What would the expected querystring resulting from the <data> call to "MyData.php"?

A. http://myServer.com/applications/MyData.php
B. http://myServer.com/applications/MyData.php?myVar=27
C. http://myServer.com/applications/MyData.php?myVar=225
*D. http://myServer.com/applications/MyData.php?myVar=22+%2B+5

Justification: Like the <submit> element, when an ECMAScript variable is submitted to the server its value is first converted into a string before being submitted.

When execution reaches the second <form> in the below VoiceXML application, what value would be applied to the "fetchPlanets" variable?

```
<vxml version = "2.1" encoding="UTF-8">
 <form id="F1">
 <var name="fetchPlanets" />
 <var name="myResult"/>

  <block>
   <data name="fetchPlanets" src="MyData.xml" />
   <goto next="#F2"/>
  </block>
 </form>

<form id="F2">
 <script>
  <![CDATA[
   function GetData(d, t) {
    return (d.getElementsByTagName(t).item(0).firstChild.data);
   }
  ]]>
 </script>

  <block>
   <assign name="document.fetchPlanets" expr="fetchPlanets.documentElement" />
   <assign name="myResult" expr="GetData(fetchPlanets, 'child1')"/>
   <log expr="'fetchPlanets = ' + fetchPlanets"/>
  </block>
 </form>
```

</vxml>

== MyData.xml ==
```
<?xml version="1.0" ?>
<xml>
<parent>
<child1>Mercury</child1>
<child2>Venus</child2>
<child3>Earth</child3>
<child4>Mars</child4>
</parent>
</xml>
```

A. Venus
B. Mercury
* C. An empty string
D. No value would be applied; an error.semantic would be thrown.

Justification: The <data> element shares the same scoping rules as the <var> element. The <assign> in the 2nd form above occurs out-of-variable scope.

Objective: Using the <foreach> element
Item: VXML.5.2.a
Reviewed by: Garrett King - No problems, Dustin - no issues

Which of the following code fragments represent an acceptable parent element relationship for the <foreach> element:


```
A.  <form id="F1">
     <foreach item="planets" array="arraySolarSystem">
      <log expr="planets" />
     </foreach>
    </form>
```

B. `<return namelist="myVar">`
    `<foreach item="planets" array="arraySolarSystem">`
     `<log expr="planets" />`
    `</foreach>`
   `</return>`

* C. `<block name="B_1">`
    `<foreach item="planets" array="arraySolarSystem">`
     `<log expr="planets" />`
    `</foreach>`
   `</block>`

D. `<assign name="myVar" expr="planets">`
    `<foreach item="planets" array="arraySolarSystem">`
     `<log expr="planets" />`
    `</foreach>`
   `</assign>`

E. All of the above.

F. None of the above.

Justification: "The `<foreach>` element may appear within executable content and within `<prompt>` elements."

Objective: Using the `<foreach>` element
Item: VXML.5.2.b
Reviewed by: Dustin - no issues Garrett King - No problems

During execution, the following code fragment would result in the following behavior to the end-caller:

`<block>`

```
 <script>
  var arraySolarSystem = ["Mercury", "Venus", "Earth",
 "Mars", "Jupiter", "Saturn", "Uranus", "Neptune" ];
 </script>

 <prompt>
  The planets in our solar system are:
 </prompt>

 <prompt>
  <foreach item="allPlanets">
   <value expr="allPlanets" />
  </foreach>
 </prompt>
</block>
```

A. Text-to-Speech renders the output of "The planets in the solar system are Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

* B. An error.badfetch would be thrown, and a platform-specific error message would be rendered to the caller.

C. Text-to-Speech renders the output of "The planets in the solar system are var arraySolarSystem Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

D. Text-to-Speech renders the output of "The planets in the solar system are All Planets" to the caller.

Justification: Both "array" and "item" must be specified; otherwise, an error.badfetch event is thrown.

Objective: Using the <foreach> element
Item: VXML.5.2.c
Reviewed by: Dustin - similar to previous question, no other issues Garrett King - No problems

During execution, the following code fragment would result in the following behavior to the end-caller:

```
<block>
 <script>
   var arraySolarSystem = ["Mercury", "Venus", "Earth",
  "Mars", "Jupiter", "Saturn", "Uranus", "Neptune" ];
 </script>

 <prompt>
  The planets in our solar system are:
 </prompt>

 <prompt>
  <foreach array="arraySolarSystem">
   <value expr="allPlanets" />
  </foreach>
 </prompt>
</block>
```

A. Text-to-Speech renders the output of "The planets in the solar system are Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

* B. An error.badfetch would be thrown, and a platform-specific error message would be rendered to the caller.

C. Text-to-Speech renders the output of "The planets in the solar system are var arraySolarSystem Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

D. Text-to-Speech renders the output of "The planets in the solar system are All Planets" to the caller.

Justification: Both "array" and "item" must be specified; otherwise, an error.badfetch event is thrown.

Objective: Using the <foreach> element
Item: VXML.5.2.d
Reviewed by: Dustin - no issues Garrett King - No problems

During execution, the following code fragment would result in the following behavior to the end-caller:

```
<block>
 <script>
   var arraySolarSystem = ["Mercury", "Venus", "Earth",
  "Mars", "Jupiter", "Saturn", "Uranus", "Neptune" ];
 </script>

 <prompt>
  The planets in our solar system are:
 </prompt>

 <prompt>
  <foreach item="allPlanets" array="SolarSystem">
   <value expr="allPlanets" />
  </foreach>
 </prompt>
</block>
```

A. Text-to-Speech renders the output of "The planets in the solar system are Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

* B. An error.semantic would be thrown, and a platform-specific error message would be rendered to the caller.

C. Text-to-Speech renders the output of "The planets in the solar system are var arraySolarSystem Mercury, Venus, Earth, Mars, Jupiter Saturn, Uranus, Neptune, Pluto" to the caller.

D. Text-to-Speech renders the output of "The planets in the solar system are All Planets" to the caller.

Justification: The array attribute must be an ECMAScript expression that evaluates to an array; otherwise an error.semantic is thrown. In this case, the array attribute of the <foreach> element

references an undeclared variable/array name.

Objective: Using the <foreach> element
Item: VXML.5.2.e
Reviewed by: Dustin - no issues Garrett King - No problems

In the following code fragment, which elements would be permissible to specify as a child of <foreach>:

```
<prompt>
 <foreach item="allPlanets" array="SolarSystem">

 </foreach>
</prompt>
```

A. <break>
B. <audio>
C. <mark>
D. <prosody>
* E. All of the above
F. None of the above

Justification: When <foreach> appears within a <prompt> element, it may contain only those elements valid within <enumerate> (i.e. the same elements allowed within <prompt> less <meta>, <metadata>, and <lexicon>).

Objective: Using the <foreach> element
Item: VXML.5.2.f
Reviewed by: Dustin - very similar to previous question, but no other issues Garrett

In the following code fragment, which elements would be permissable to specify as a child of <foreach>:

```
<prompt>
 <foreach item="allPlanets" array="SolarSystem">

 </foreach>
</prompt>
```

A. <lexicon>
B. <grammar>
C. <catch>
D. <if>
E. All of the above.
* F. None of the above.

Justification: When <foreach> appears within a <prompt> element, it may contain only those elements valid within <enumerate> (i.e. the same elements allowed within <prompt> less <meta>, <metadata>, and <lexicon>).

Objective: Using the <foreach> element
Item: VXML.5.2.g
Reviewed by: Dustin - no issues Garrett King - No problems

In the following code fragment, which elements would be permissable to specify as a child of <foreach>:

```
<prompt>
 <foreach item="allPlanets" array="SolarSystem">

 </foreach>
</prompt>
```

* A. <break>
B. <lexicon>
* C. <paragraph>
D. <if>
E. All of the above.
F. None of the above.

Justification: When <foreach> appears within a <prompt> element, it may contain only those elements valid within <enumerate> (i.e. the same elements allowed within <prompt> less <meta>, <metadata>, and <lexicon>).

Objective: Using <disconnect namelist="">
Item: VXML.5.3.a
Reviewed by: Dustin - no issues Garrett King - No problems

In the below code sample, what variables would be sent back to the invoking CCXML context upon execution?

```
<block>
 <var name="60s_pop" expr="'The Doors'"/>
 <var name="70s_pop" expr="'Carole King'"/>
 <var name="80s_pop" expr="'Debbie Gibson'"/>
 <exit namelist="60s_pop"/>
 <disconnect namelist="80s_pop"/>
</block>
```

A. "60s_pop"
B. "60s_pop", "70s_pop", "80s_pop"
* C. "60s_pop", "80s_pop"
D. "60s_pop", "70s_pop"

Justification: The <disconnect> namelist and the <exit> namelist are processed independently. If the interpreter executes both a <disconnect> namelist and an <exit> namelist, both sets of variables are available to the interpreter context.

Objective: Using <disconnect namelist="">
Item: VXML.5.3.b
Reviewed by: Garrett King - No problems

In the below code sample, what variables would be sent back to the invoking CCXML context upon execution?

```
<block>
 <var name="70s_pop" expr="'Carole King'"/>
 <var name="80s_pop" expr="'Debbie Gibson'"/>
 <var name="90s_pop" expr="'Nirvana'"/>

 <exit namelist="60s_pop"/>
 <disconnect namelist="90s_pop"/>
</block>
```

* A. "90s_pop"
B. "60s_pop", "70s_pop", "80s_pop"
C. "60s_pop", "80s_pop"
D. "60s_pop", "70s_pop"

Justification: The <disconnect> namelist and the <exit> namelist are processed independently. If the interpreter executes both a <disconnect> namelist and an <exit> namelist, both sets of variables are available to the interpreter context.

Objective: Using <disconnect namelist="">
Item: VXML.5.3.c
Reviewed by: Garrett King - No problems

In the below code sample, what variable names would be sent back to the invoking CCXML application upon processing the <disconnect> element:

```
<block>
 <var name="70s_pop" expr="'Carole King'"/>
 <var name="80s_pop" expr="'Debbie Gibson'"/>
 <var name="90s_pop" expr="'Nirvana'"/>

 <exit namelist="60s_pop"/>
 <disconnect namelist="60s_pop"/>
</block>
```

A. "70s_pop"
B. "60s_pop"
C. "60s_pop", "70s_pop", "80s_pop", "90s_pop"
* D. None

Justification: The <disconnect> namelist and the <exit> namelist are processed independently. If the interpreter executes both a <disconnect> namelist and an <exit> namelist, both sets of variables are available to the interpreter context.

Objective: Using the <mark> element
Item: VXML.5.4.a
Reviewed by: Garrett King - No problems

Upon execution of the following code, which <mark> shadow variables should be available when the form-item is filled with a variable (Select all that apply)?:

```
  <field name="moon">
   <prompt>
     When you hear the name Saturns smallest moon, please say 'stop'.
     <break time="2000ms"/>
```

```
    <mark name="Mimas"/>
     Mimas
    <break time="500ms"/>

    <mark name="Enceladus"/>
     Enceladus
    <break time="500ms"/>

    <mark name="Tethys"/>
     Tethys
    <break time="500ms"/>

    <mark name="Iapetus"/>
     Iapetus
    <break time="500ms"/>
   </prompt>

   <grammar type="application/srgs+xml" src="stop.grxml"/>
   <filled>

   </filled>
  </field>
```

* A. lastresult$.markname
* B. lastresult$.marktime
C. lastresult$.marksize
D. lastresult$.markrecord
E. lastresult$.marktone
F. lastresult$.mark

Justification:

Using the <mark> element
Item: VXML.5.4.b
Reviewed by: Garrett King - No problems

If during execution the caller says "that one" when the text-to-speech string for "Jupiter" is playing, what would the value of the "marktime" shadow variable be set to:

```
<form>
    <field name="planets">
     <prompt>
      When you hear the name the largest planet in our solar system, say 'that one'.
      <break time="2000ms"/>

       <mark id="Mercury"/>
        Mercury
       <break time="500ms"/>

       <mark id="Earth"/>
       Earth
       <break time="500ms"/>

       <mark id="Mars"/>
        Mars
       <break time="500ms"/>

       <mark id="Jupiter"/>
        Jupiter
       <break time="500ms"/>

       <mark id="Uranus"/>
        Uranus
       <break time="500ms"/>
     </prompt>

     <grammar type="application/srgs+xml" src="choice.grxml"/>

      <filled>
       <log expr="'planets$.marktime = ' + planets$.marktime"/>
      </filled>

   </field>
  </form>
```

A. Approximately 1500ms or less
B. Approximately 2000ms or less
C. Approximately 4000ms or less

* D. None of the above

Justification: Exactly one of "name" and "nameexpr" must be specified; otherwise, an error.badfetch event is thrown.

Using the \<mark\> element
Item: VXML.5.4.c
Reviewed by: Garrett King - No problems

If during execution the caller says "that one" when the text-to-speech string for "Mercury" is playing, what would the value of the "markname" shadow variable be set to:

```
<vxml version="2.1">
<var name="currentMark" expr=""/>

<form>

  <block>
   <assign name="document.currentMark" expr="'pos1'"/>
   <prompt>
     When you hear the name the smallest planet in our solar system, say 'that one'.
     <break time="2000ms"/>
   </prompt>

   <assign name="document.currentMark" expr="'pos2'"/>
    <prompt>
      <mark nameexpr="document.currentMark"/>
      Mercury
      <break time="2000ms"/>
    </prompt>

   <assign name="document.currentMark" expr="'pos3'"/>
    <prompt>
      <mark nameexpr="document.currentMark"/>
      Earth
      <break time="2000ms"/>
    </prompt>
```

```
      <assign name="document.currentMark" expr="'pos4'"/>
       <prompt>
         <mark nameexpr="document.currentMark"/>
          Mars
         <break time="2000ms"/>
       </prompt>

      <assign name="document.currentMark" expr="'pos5'"/>
       <prompt>
         <mark nameexpr="document.currentMark"/>
          Jupiter
         <break time="2000ms"/>
       </prompt>

      <assign name="document.currentMark" expr="'pos6'"/>
       <prompt>
         <mark nameexpr="document.currentMark"/>
          Uranus
         <break time="2000ms"/>
       </prompt>
     </block>

    <field name="planets">
     <grammar type="application/srgs+xml" src="choice.grxml"/>

      <filled>
       <log expr="'planets$.marktime = ' + moon$.marktime"/>
      </filled>
    </field>
  </form>
</vxml>
```

A. "pos1"
* B. "pos2"
C. "pos3"
D. "pos4"

Justification: At this point during execution, the document scoped variable for nameexpr is set to "pos2".

Upon a grammar match in a form-item which additional shadow variables would be set in the application$.lastresult object as a result of enabling the recordutterance property:

A. filename, URI
* B. recording, recordingsize, recordingduration
C. recordingtranscription, recording
D. recordingsize, recording

Justification: If the recordutterance property is set to true in the current scope, the following three shadow variables are set on the application.lastresult$ object whenever the application.lastresult$ object is assigned: recording, recordingsize, recordingduration.

What is the proper method to disable utterance recording in a VoiceXML dialog:

A. <recordutterance value="0"/>
B. <property name="recordutterance" value="0"/>
* C. <property name="recordutterance" value="false"/>
D. <audio expr="recordutterance" value="100"/>

Justification: The only allowable <property> values for recordutterance are true|false.

Objective: Using the recordutterance <property>
Item: VXML.5.5.c
Reviewed by: Garrett King - No problems

What is the proper way to enable utterance recording in a VoiceXML dialog:

A. <recordutterance value="1.0"/>
* B. <property name="recordutterance" value="true"/>
C. <property name="recordutterance" value="100"/>
D. <audio expr="recordutterance" value="0"/>

Justification: The only allowable <property> values for recordutterance are true|false.

Objective: Using the script srcexpr attribute
Item: VXML.5.6.a
Reviewed by: Garrett King - No problems

What is the proper attribute to use when specifying a dynamic expression value for a <script> URI:

A) src
* B) expr
C) srcexpr
D) eval

Justification: VXML 2.0/2.1 specification designates "srcexpr" as the correct attribute.

Objective: Using the script srcexpr attribute
Item: VXML.5.6.b
Reviewed by: Garrett King - No problems

Considering the following application code and associated javascript:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">
 <form id="F1">

  <var name="t1" expr="66"/>
  <var name="myScript" expr="'calcSum.js'"/>

  <block name="B1">
   <script srcexpr="myScript"/>
  </block>

  <block name="B2">
   <assign name="myScript" expr="newSum.js"/>
   <script src="calcSum.js" srcexpr="myScript"/>
   <log expr=" 'mySum = ' + mySum"/>
  </block>
 </form>
</vxml>
```

```
// calcSum.js
var y = 109;
var mySum = t1 + y;
```

```
// newSum.js
var x = 323;
var mySum = x + t1;
```

What would the value of "mySum" equate to after execution in block "B2"?

A) 564
B) 389
C) 175
* D) None of the above

Justification: The second invocation of <script> specifies both a "src" and a "srcexpr" which would result in an error.badfetch.

Objective: Using the script srcexpr attribute
Item: VXML.5.6.c
Reviewed by: Garrett King - No Problems

Considering the following application code and associated javascript:

```
<?xml version="1.0" encoding="UTF-8"?>
<vxml version="2.1">


 <var name="myScript" expr="'calcSum.js'"/>
 <script srcexpr="myScript"/>


 <form id="F1">
  <var name="t1" expr="101"/>
  <block name="B1">
   <log expr="'mySum = ' + mySum"/>
  </block>

  <block name="B2">
```

```
  <assign name="myScript" expr="newSum.js"/>
  <script srcexpr="myScript"/>
  <log expr="'mySum = ' + mySum"/>
 </block>


  <block name="B3">
   <script srcexpr="myScript"/>
   <log expr="'mySum = ' + mySum"/>
  </block>
 </form>
</vxml>


// calcSum.js
var y = 89;
var mySum = t1 + y;
//190


// newSum.js
var x = 23;
var mySum = x + t1;
// 124
```

What would the value of "mySum" equate to after execution in block "B3"?

A) 314
B) 124
* C) 190
D) None of the above

Justification: As the srcexpr is evaluated each time it is invoked, it would execute "calcSum" in block B3 via the form-scoped variable, as the specification for "newSum" in B2 is a form-item scoped variable.

Objective: Using transfer type
Item: VXML.5.7.a.1
Reviewed by: Garrett King - No problems

Considering the following code fragment:

<transfer dest="tel:+15552128947" type="consultation" connecttimeout="40s"/>

If the far-end number that was dialed returned a "busy" signal, what would happen to the caller?

* A) The caller would continue execution in the current VoiceXML document, as applicable.
B) The caller would be disconnected from the session.
C) The caller would be connected to an IVR conference administration menu that would allow the caller to decide what to do next.
D) None of the above.

Justification: Consultation type transfers allow VoiceXML execution to continue after a disconnect/call reject etc.

Objective: Using transfer type
Item: VXML.5.7.a.2
Reviewed by: Garrett King - No problems

Considering the following code fragment:

<transfer dest="tel:+15552128947" type="blind" connecttimeout="40s"/>

If the far-end number that was dialed returned a "busy" signal, what would happen to the caller?

A) The caller would continue execution in the current VoiceXML document, as applicable.
* B) The caller would be disconnected from the session.
C) The caller would be connected to an IVR conference administration menu that would allow the caller to decide what to do next.
D) None of the above.

Justification: "Blind" type transfers do not allow VoiceXML execution to continue after a disconnect/call reject etc.

Objective: Using transfer type
Item: VXML.5.7.a.3
Reviewed by: Garrett King - No problem

Considering the following code fragment:

`<transfer dest="tel:+15552128947" type="bridged" connecttimeout="40s"/>`

If the far-end number that was dialed returned a "busy" signal, what would happen to the caller?

* A) The caller would continue execution in the current VoiceXML document, as applicable.
B) The caller would be disconnected from the session.
C) The caller would be connected to an IVR conference administration menu that would allow the caller to decide what to do next.
D) None of the above.

Justification: "Bridge" type transfers allow VoiceXML execution to continue after a disconnect/call reject etc.

Objective: Using the ransfer type attribute values
Item: VXML.5.7.c
Reviewed by: Garrett King - No problems

For the "type" attribute of the <transfer> element, which values are allowable to specify the method of transfer to be used?

A) "SIP", "PSTN", and "TDD"

* B) "bridge", "blind", and "consultation"
C) "refer", "bridge", "trunk-to-trunk"
D) "dest", "src", "bridge"

Justification: The only W3C-compliant attribute values for "type" are bridge/blind/consultation.

Objective: consultation transfer events
Item: VXML.5.7.d.1
Reviewed by: Garrett King - No problems

Upon completion of a successful consultation transfer, what event would be thrown to the VXML interpreter?

A) connection.disconnect.hangup
B) connection.connected.consultation
C) connection.connected
* D) connection.disconnect.transfer

Justification: Consultation transfers behave in a similar fashion to a blind transfer. ii the connection is established, the interpreter disconnects from the session, connection.disconnect.transfer is thrown, and document interpretation continues normally.

Objective: consultation transfer events
Item: VXML.5.7.d.2
Reviewed by: Garrett King - No problems

When the called party of a consultation transfer disconnects, what event would be thrown to the VXML interpreter?

A) connection.disconnect.hangup
B) A "near_end_disconnect" is populated to the transfer form item variable value.
C) connection.disconnect.transfer
D) None of the above

Justification: Upon connection to a far-end part in a "consultation" type transfer, the interpreter disconnects. Consequently, the calling party would be disconnected as the call connects, and the VoiceXML session would end before the called party could disconnect the call.

Objective: consultation transfer events
Item: VXML.5.7.d.3
Reviewed by: Garrett King - No problems

What value is the form-item variable set to upon a successful consultation transfer:

A) near_end_disconnect
B) far_end_disconnect
C) call_connected
D) far_end_connected
* E) None of the above

Justification: Upon a successful consultation transfer, the interpreter disconnects and a "connection.disconnect.transfer" event is generated, and the interpreter disconnects. In this case, the form-item variable is set to "undefined"