Quiz Template: Using Mouse Click Events

Which animal says 'meow'? Click on that animal.

By Deborah Nelson
Duke University
Under the direction of Professor Susan Rodger
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Overview

- The purpose of this tutorial is to demonstrate how to use a template for quizzes in which the user clicks on a different object as an answer to each question.

- This template can then be used for different sets of objects. Many of the methods have been provided for you. To enable you to use these methods in any world, they have all been saved to an Alice object that can be imported.

- There are five basic steps to creating your quiz world. But first, understand the format of the quiz.
The format of this quiz:
1) An object, which I refer to as an instructor, will ask each question.
2) For each question, the correct answer is one of the other, visible objects.
3) The user must click on one of the objects to answer the question.
4) The user’s answer is then compared to the correct answer.
5) Once the question has been evaluated, the instructor will repeat these steps for the next questions.
Set Up

- When you build your own quiz world, setting up the objects and camera views is the first step.
- For the sake of this tutorial, a starter world has been provided.
- When you downloaded this tutorial, you should have downloaded the starting world, it is called questionClickStart.a2w. If not, do so now.
- Save it in a directory that you can find again.
Step One

- Open Alice, and open the world questionClickStart.a2w.
- First, click on world in the object tree. Click on the methods tab in the details area.
- Click create new method. Name it `quiz1method`.
- Click on world.my first method. Drag `quiz1Method` into it.
Set the Camera View

- Drag **camera**, set point of view into **quiz1Method**.
- Select Dummy Objects, **quiz1view**. Set duration to 0.

- It is good practice to set the camera position if you will have multiple views in your world.
Import the quiz object

- Click on the File Menu
- Select Import
- Find askQuestionClick.a2c
- You should have downloaded it with this tutorial, if you didn’t, do so
- Click on the import button to add the object to your world.
Where is your object?

- The imported object appears in the object tree
- Remember that it is actually an invisible shape, so you won’t see it in your world screen unless you click on it in the object tree and see the yellow bounding box.
- But we are able to use all of the properties and methods that I’ve written under it
The quizMethodTemplate

- Click on askQuestionsClick in the object tree
- In the methods tab, click edit beside quizMethodTemplate
- The steps for creating your quiz method are provided here. We’ve completed Step 1.
- The quiz1Method that we created is where we will put all of the instructions for the quiz.
- Now, I will walk you through the rest of the steps
Step 0: Fill the list quizChoices

- Now that we’ve imported the quiz Object, before we finish writing quiz1Method, click on the properties tab.
- Open the list variable, quizChoices.
- Add these four objects to your list: cat, bunny, T-rex, cow.
- Click OK.
Purpose of list quizChoices

- The purpose of putting all of the object choices in this list is so that the quiz helper methods will not conflict with any other click events that may be in your world.
Step 2: Setting the Instructor

- Click on the quiz1Method tab
- Click on the properties tab and drag Instructor into your method.
- Select set value, select teacher, the entire teacher.
The Purpose of the Instructor Variable

- The Instructor asks the question, and explains the correct or incorrect answers. By default, it is set to the camera.

- If at any point during your quiz, you want to change which object is the Instructor, simply drag this property variable into your quiz method again method and set the value to another object.
Step 3: Initialize the score variable

- Drag the **Score** variable into your quiz1Method.
- Set the value to 0.

- This step is only necessary if you have multiple quiz methods in your world (which all use the same score variable)
- Otherwise, by default the score is set to 0.
Step 3: Asking the questions

- To ask questions, click on the methods tab.
- Drag `setQuestionAnswer` into your quiz1Method. It looks like this when you drop it:

  ```
  askQuestionsClick.setQuestionAnswer currentQuestion = default string duration = 1 correctAnswer = <None> withTries = true
  ```

- There are four parameters for each of these ask methods.
- The first parameter is for the question, and the second parameter is the duration - how long you want the Instructor to say it.
Setting up the parameters

- Click on the default string, type in the question: “Click on which animal hops”

- Set duration to 2.

- Click on the third parameter, `correctAnswer`, and set to bunny. Then, click on the third parameter, `withTries`, and set it to false.

- When `withTries` is false, the quiz-taker only gets one chance to answer each question
Repeat step 3 for question 2

- For the next three questions, we’re going to repeat step 4, but with different parameters.
- Drag `setQuestionAnswer` into `quiz1method` again.
- For the parameters:
  - Set `currentQuestion` to “Which animal is extinct? Click on it”
  - Set `duration` to 2.
  - Set the `correctAnswer` to T-rex, the entire T-rex
  - Set `withTries` to false.
Third Question

- Drag `setQuestionAnswer` into `quiz1Method` again.

- For the parameters:
  - Set `currentQuestion` to “Click on the animal that says “meow””
  - Set `duration` to 2.
  - Set the `correctAnswer` to cat, the entire cat
  - Set `withTries` to false.
Fourth Question

- Drag `setQuestionAnswer` into `quiz1method` again.

- For the parameters:
  - Set `currentQuestion` to “Which animal provides milk for humans (of all ages)? Click on her.”
  - Set `duration` to 2.
  - Set the `correctAnswer` to cow, the entire cow
  - Set `withTries` to false.
Step 5: Score

- At the end of the quiz, if you want to tell the user how many questions they answered correctly, you can have the Instructor say the score.

- Click on quiz1Template. Drag the instruction to the clipboard. Then click on quiz1method and drag it from the clipboard to the end of your Method.

- Play your world.
How to construct the Score Say instruction

- If copying from the clipboard does not work for you, follow these instructions instead.
- Click on properties tab, drag Instructor into your quiz1Method. Select say, hello
- Click on World in the object tree, go to functions. Drag a joined with b on top of hello, select default string.
Construct score say (cont.)

- Drag the function **what as a string** on top of default string. From the drop down, select expressions, select the **score** variable.

- Click on hello and type “You correctly answered: ”. Then, set duration to 2 seconds.

- Play your world.
Play your world

- Play your world. Remember that whenever you get an answer wrong you are told the correct answer?

- Finish playing your world. For every setQuestionAnswer, change withTries to True.

- Play the world again to see the difference
Full method

- It may not be necessary to share the score, especially if you set withTries to true.

- Here is the full quiz1Method. Notice I set withTries to false again for every instruction.

- Remember that you can have multiple quizzes in your world, simply by following these five steps to create another quiz Method.
Recap

- The steps to creating your quiz method:
  1. Set up your objects and camera views
  2. & 3. Create quiz1Method and set the initial values for Instructor and Score
  4. Ask your questions. Decide what question to ask, duration, the correct Answer, and whether or not to allow the user to Try again
  5. Tell the user their score, if you want to.
To Do: Add more animation

- The fun of creating a quiz world in Alice is the animation. Add animation to your quiz1Method, between each setQuestionAnswer instruction. Here is my final method:

```alice
camera set point of view to quiz1View
askQuestionsClick.instructor set value to teacher
askQuestionsClick.score set value to 0

askQuestionsClick.setQuestionAnswer currentQuestion = Click on which animal hops 
  duration = 2 
  correctAnswer = bunny 
  withTries = false

bunny move up 0.5 meters duration = 0.5 seconds style = abruptly

bunny move down 0.5 meters duration = 0.25 seconds style = abruptly

askQuestionsClick.setQuestionAnswer currentQuestion = Which animal is extinct? Click on it 
  duration = 2 
  correctAnswer = T-rex 
  withTries = false

t-rex turn left 1 revolution duration = 0.5 seconds

askQuestionsClick.setQuestionAnswer currentQuestion = Click on the animal that says "meow" 
  duration = 2 
  correctAnswer = cat 
  withTries = false

cat.head turn left 0.25 revolutions duration = 0.25 seconds style = abruptly

cat.head turn right 0.25 revolutions duration = 0.25 seconds style = abruptly

askQuestionsClick.setQuestionAnswer currentQuestion = Which animal provides a milk for humans (of all ages)? Click on her 
  duration = 3 
  correctAnswer = cow 
  withTries = false

cow.tailSwish times = 2 speed = 2

askQuestionsClick.instructor say You correctly answered: joined with askQuestionsClick.score as a string
```