Building a Scorekeeper

Alice 3 Tricks in Mini Trivia (1/4)

0 → -5 → 20 → 85

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June 2017

About the Mini Trivia Challenge

Mini Trivia is a four-question game created by Vicki Zhang. The author explains four useful topics involved in separate tutorials:

1. scorekeeper
2. asking user for an answer
3. billboard
4. multi-layered object

This tutorial explains how to build a scorekeeper. Start by downloading Mini Trivia_Challenge 1 Scorekeeper_Start
To get started

Find and create a new **TextModel**.

Set **name** to score, and initial **value** to 0.

Drag the text onto a clear spot (shown on next page) using the **Default** handle style.

Resize it by
- changing the data directly
- or using the **Resize** handle style.
Tweak it to roughly this size and location.

Color could be changed, if so inclined:

When satisfied, click on

One new **Property** for Score

- **Goal:** Create a property used to store the value of current score
- **Purpose:** To access the value easily
- **How:** Add new **property** for **TextModel**
  - Value type: **whole number**
  - Name: **currentScore**
  - Initializer: **0**
Note that we are enabling ALL text models this property and the procedures that we will create.

After you added the `currentScore` property, Alice automatically creates a procedure (setCurrentScore) and a function (getCurrentScore). We will use them soon.

currentScore is a property of the TextModel, and used a parameter of this procedure.
Three new Procedures for Score

1. setScore
2. addScore(#) 
3. reduceScore(#)

Notes💡:
• addScore(5) will add 5 to the score, and reduceScore(10) will subtract 10 from the score.
• The # sign in the procedure is a placeholder demanding an input. Consider: If addScore did not have this input, Alice would not know how much to add. This is called a parameter.

Set Score
• Add TextModel Procedure and name it setScore
• This procedure is created for the purpose of setting the content of display
Set Score

Drag in the `setValue` procedure

>>Select “custom TextString”

>>Press “Ok” directly. The result is shown below.

Then click the tiny triangle on the right and select

```
"" + ??? >>
whole number >>
currentScore
```
Set Score Completed

Add Score

• Create a second **Procedure** for the TextModel
• Name it **addScore**
• Add a parameter for this procedure
  • **so that Alice knows how much** to add**
  • Name the parameter **howMuch**
Add Score

• Drag in the `setCurrentScore` procedure and select `currentScore` as the parameter in the dropdown menu.
• We want to add to the `currentScore` by `howMuch`
• The resulting formula should be:
  
  `setCurrentScore to (currentScore + howMuch)`
• Process shown on next page.
Add Score Completed

The point of `addScore` is to update the value of `currentScore` and update the score displayed on the screen by calling `setScore`.

Reduce Score

- This is merely a numerically flipped version of `addScore`.
- Try it yourself first!
- Step-by-step guide on the next slide.
Reduce Score

• Create a second **Procedure** for the TextModel
• Name it **reduceScore**
• Add a parameter for this procedure
  • **so that Alice knows **how much** to reduce**
  • Name the parameter **howMuch**

Reduce Score

• Drag in the **setCurrentScore** procedure and select **currentScore** as the parameter in the dropdown menu.
• We want to subtract **howMuch** from the **currentScore**
• The resulting formula should be:
  
  ```
  setCurrentScore to (currentScore-howMuch)
  ```
• Process shown on next page.
The point of `reduceScore` is to update the value of `currentScore` and update the score displayed on the screen by calling `setScore`.
Scorekeeper Completed!

- Now we just have to plug in the procedures to appropriate places in the game.
- You will have comments in Question A, Question C, Question D, and initializeEventListeners for guidance.

Example: Question A

Step 1:
Go to **scene** and you should find the scene procedures.

Select **questionA** procedure.
Example: Question A

Step 2: Select on the left tool bar TextModel—with \texttt{this.score}, which is the visualized form of our scorekeeper.

Example: Question A

- We can now see all procedures of TextModel on the left, including the ones we created.
- Drag in \texttt{addScore} into the \texttt{doTogether} box, either below or above the comment.
- Select custom whole number and type in 10.
Example: Question A

• Similarly, drag reduceScore in. Make sure you place it at the same level of the comment, i.e. under “else” and outside of do together.
• Select custom whole number and type in 5.

Try it out!

• Run the game and click on the hammer, which corresponds to Question A.
• Comments for Questions B, C and D are found, respectively, in initializeEventListeners, questionC, questionD.

Finish them all for a complete game!