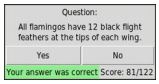
Take-home test for Unit 8

Intro

Task

In this task, we are going to write a program test8.py that implements a graphical quiz game.



You are provided with a text file containing quiz questions animals.txt (source) and a module readquiz.py with a function loadQuestions() able to read Yes/No questions from the questions file. The function returns a list of the form:

```
[
  ['All dogs, cats and birds are colorblind.', False],
  ['Snake skin is covered in scales.', True],
  ['All tigers have stripes.', False],
  ...
]
```

Each element of the list is a pair containing a trivia-style statement string and a True/False value that determines whether the statement is true or not.

Step-by-step implementation:

1. Load questions from the file animals.txt using the module readquiz.py

   You will need at least three global variables: the list of questions, the number of times the player answered, and how many times they were correct:

   ```
   questions = readquiz.loadQuestions()
   total = 0
   ```

```
correct = 0
```

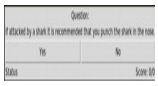
2. Create a Tkinter interface, arranging widgets as close as possible to the following layout (you may use additional Frame widgets to help arrange buttons and labels):

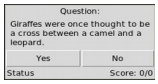
   - When creating a label for the quiz question, you may use a Message widget instead of Label to get a multi-line text label. They are created the same way, but for Message you additionally specify its width:

     ```
     questionLabel = Label(root)

     questionLabel = Message(root, width=200)
     ```

     The difference between Label and Message:



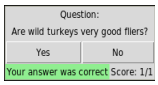


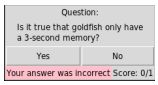
   - The **Status** label in the bottom left is supposed to show if the player's previous answer was correct or incorrect

   - The **Score** label in bottom right is supposed to shows the ratio of correct answers (i.e. Score: correct/total, initially, it should show Score: 0/0).

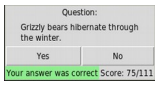
   - The game should start by showing a randomly sampled trivia statement from the list, allowing the player to press a button "**Yes**" or "**No**" if they agree or disagree with the statement.

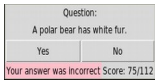
   - To make the game work, add ['command'] functions for the buttons. If a correct button is pressed, it should change the **Status** label to 'Your answer was correct' and its background to 'light green', otherwise change it to 'Your answer was incorrect' and its background to 'pink'. After that, it should load a new question, update globals correct and total, and update the **Score** label to show the updated ratio.





After playing many rounds:





There are many ways to make the buttons work correctly. We can give you one possible solution strategy:

Define two functions for the buttons, describing what should happen when the player presses the correct button, and the incorrect one:

```
def goodAnswer():
  correct += 1
  total += 1
  ## Update Status and Score labels accordingly
  getNewQuestion()

def badAnswer():
  correct += 0
  total += 1
  ## Update Status and Score labels accordingly
  getNewQuestion()
```

The function getNewQuestion() should sample a new question, update the question label, and then reassign the ['command'] functions of the buttons. For example, if the question statement is False, then the **Yes** button should now execute badAnswer, and the **No** button should now execute goodAnswer.

So in the proposed solution strategy, each time we update the question, we also update the behavior of the buttons.