Lab 2

Questioning program

For this lab, you will quiz the user about something, such as the number of players on various team sports, or the number of magic rings given to each race of Middle Earth in the Lord of the Rings. (You get to choose the subject matter for the quiz; pick something that you’re interested in.)

I have written some starter code for you to build on. Open BlueJ, create a new project (I called mine “lab2”), and create a class called Questioner inside this project (there is a “New Class” button). Then go to the course webpage (http://courses.knox.edu/cs141) and copy the initial code for this class from the lab 2 part of the assignments page. This code just sets up an object input to read values from the user. (It uses a Java library class called Scanner, which we’ll talk about in more detail later in the term.)

In order to complete this lab, you need to be able to do two things. The first is to read values from the user, which you can do using the input object. For example, to read an integer from the user, you should do something like the following:

```java
int num = input.nextInt();
```

To read a word, use

```java
String word = input.next();
```

Of course you’ll want to print questions to the user before trying to read these values. For this, we’ll use System.out.print and System.out.println as in the textbook:

```java
System.out.println("You entered the number " + num + ", ")
```

For some of your questions, you’ll also want to see if the user entered the correct answer. You can compare integer answers using ==, but this isn’t correct for comparing String values. That would be too easy... (We’ll talk more about why this is later in the term.) Instead, compare strings using .equals() (pronounced “dot equals”), like this:

```java
System.out.println("Enter two strings");
String s1 = input.next();
String s2 = input.next();
if(s1.equals(s2)) {
    System.out.println("The strings are the same!");
}
```

Writing your program

Now you’re (finally) ready to begin. Add a method called ask to the Questioner class that takes no arguments and returns nothing. It should give the user an initial prompt and then give them the appropriate quiz. For example, a sports quiz might begin with the following prompt:

```java
Type 1 to pick a sport or 2 to pick a number of players
```

If the user enters 1 at this initial prompt, it then asks them

```java
Choose a sport (basketball, curling, or baseball)
```

1 Stolen shamelessly from Prof. Jaime Spacco.
They may enter basketball, curling, or baseball. Any other inputs will cause the program to give the message Invalid choice and then terminate with no further input or output.

After the user enters a sport, it asks them

How many players are in sport?

where sport is replaced with the sport they entered. The user will enter a number; if the number of players they enter is the correct number of players for that team the program prints

Correct

Otherwise, it prints:

Wrong, there are correctNumPlayers players in sport

If the user enters 2 at the initial prompt, it says

Choose the number of players (4, 5, 9)

The user may enter 4, 5 or 9; any other inputs and the program prints the error message “Invalid choice” and terminates with no further input or output.

After the user enters a number of players, they are asked

What sport has numPlayers players?

Depending on whether they answer correctly, the program again praises or corrects them.

Here are some ample transcript of running the program (user inputs are in *italics*):

Type 1 to pick a sport and 2 to pick a number of players

1
Choose a sport (basketball, curling, or baseball)
curling
How many players are in curling?
4
Correct

Another sample transcript:

Type 1 to pick a sport and 2 to pick a number of players

1
Choose a sport (basketball, curling, or baseball)
guitar-hero
Invalid choice!

And yet another:

Type 1 to pick a sport and 2 to pick a number of players

1
Choose a sport (basketball, curling, or baseball)
baseball
How many players are in baseball?
127
Wrong, there are 9 players in baseball

And a last one:

Type 1 to pick a sport and 2 to pick a number of players

-13
Invalid choice