Bonus 4

Requirements:

- Create a Java project named yourStudentId_OOP_Bonus4

- Read instructions and create classes needed. You are supposed to add 3 classes (*Question, choiceQuestiont, and Tester*) to the project. Tester has already written.

- All instance variables are private. Please use public interfaces to access private variables.

Following figure shows the inheritance, attributes and methods for each class. For setter and getter please refer to Figure 1.
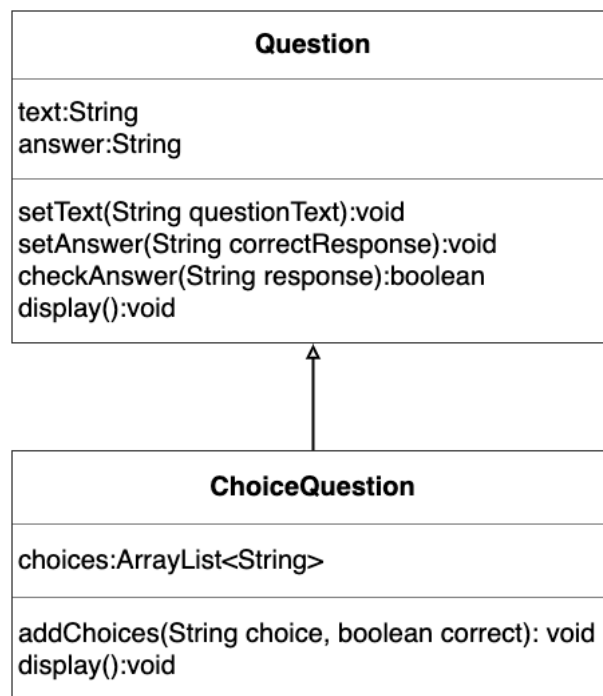

Question
text:String answer:String
setText(String questionText):void setAnswer(String correctResponse):void checkAnswer(String response):boolean display():void

ChoiceQuestion
choices:ArrayList<String>
addChoices(String choice, boolean correct): void display():void

Figure 1.

1. Create *Question* class

Question	
Modifier and type	**Method (or Variable) and description**
Instance variable	
String	text The text of the question.
String	answer The answer to the question.
Constructor	
public Question() Enable to instantiate a Question object with assigning the space to text, and answer.	
Instance methods	
-	2 setters for 2 attributes (setText (...), setAnswer(...)).
boolean	checkAnswer(String response) a. Determine whether the response is the same as the correct answer, if yes, return "true", otherwise the opposite.
void	display() a. Print out the text of the question.

2. Create *ChoiceQuestion* class

ChoiceQuestion	
Modifier and type	**Method (or Variable) and description**
Instance variable	
ArrayList<String>	choices Used to record the choices of the multiple choice question.
Constructor	
ChoiceQuestion() Enable to initialize the *choices* ArrayList.	
void	addChoices(String choice, boolean correct) a. Add the incoming choices to the *choices* ArrayList. b. Determine whether the incoming correct is true. If it is, you should call the corresponding method (i.e., *setAnswer()*) to set the choice as answer of the question.
void	display() a. Use *"super()"* keyword to call the display method of superclass to print out the text of the question. b. Use *"for-loop"* statement to print out the choices of the question. **Example:** What was the original name of the Java language? 1:*7 2:Duke 3:Oak 4:Gosling

The code of the main method

```java
import java.util.Scanner;
public class Tester {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        Scanner input = new Scanner(System.in);
        Tester test = new Tester();

        Question Q1 = new Question();
        Q1.setText("Who was the inventor of Java?");
        Q1.setAnswer("James Gosling");

        ChoiceQuestion Q2 = new ChoiceQuestion();
        Q2.setText("What was the original name of the Java language?");
        Q2.addChoices("*7", false);
        Q2.addChoices("Duke", false);
        Q2.addChoices("Oak", true);
        Q2.addChoices("Gosling", false);

        Q1.display();
        System.out.print("Your answer:");
        System.out.println(Q1.checkAnswer(input.nextLine()));

        System.out.println();

        Q2.display();
        System.out.print("Your answer:");
        System.out.println(Q2.checkAnswer(input.next()));
    }
}
```

Sample output

```
Who was the inventor of Java?
Your answer:Jobs
false

What was the original name of the Java language?
1:*7
2:Duke
3:Oak
4:Gosling
Your answer:3
true
```

Submission: Submit your project as "**.zip file**" via Moodle. No other submissions will be graded.

Reminder: Please zip the whole project.

Deadline: Tomorrow's midnight (for both Mon56 and Tue23)