CS 110 Lab Sheet 2

Lab cycle starting 9th October 2019, Normal Deadline: two weeks after your lab in that cycle.

Here's a program from Chapter 1 of the notes:

```java
import java.util.Scanner;

public class HelloYou {
    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);

        System.out.println("What is your name?");
        String name = in.nextLine();
        System.out.println("Hello " + name + "!");

    }
}
```

Stage 0
If you didn't finish Lab Sheet 1 - especially Stage 8, do that first and get it signed off

Stage 1
Enter the program above and get it to compile and work.

Stage 2
Systematically change the name of the variables in the `HelloYou` program - to see that it doesn't make any difference to Java what you call them. The ones you need to change are 'name' and 'in' - think of some alternative names that still make sense

Stage 3
Extend it so that it 'talks' to you - for example:

```
What is your name?
>John
Hello John !
John, what is your favourite fruit?
>Lemons
I love Lemons too!
```

You will find the '+' operator for joining strings from the last lab sheet useful. It doesn't have to be this *exact* example - actually it would be better if you tried something

different - and carry on for a couple of more lines (maybe ask about hobbies/food/where you are from etc. - feel free to do it in a language other than English if you can).

Stage 4
Make sure the final version of your program from Stage 2 is:
properly indented and sensibly commented - for example, with a comment at the start of the program saying what it does; and one before each question/answer

Challenge Task - if you are finding the main tasks too easy
There are better ways to format strings in Java and line up text in columns - read this:
https://docs.oracle.com/javase/tutorial/essential/io/formatting.html
and rewrite your program from Stage 5.

Stage 5
Enter the following program, run it and see what it does.

```
import javax.swing.JOptionPane;
public class UIHello {
    public static void main(String[] args) {
        String name =
            JOptionPane.showInputDialog("What is your name?");
        System.out.println(name);
    }
}
```

Stage 6
Enter the following program, run it and see what it does.

```
import javax.swing.JOptionPane;

public class UIResponse {
    public static void main(String[] args) {
        JOptionPane.showMessageDialog(null, "Your Name Here",
            "I'm saying Hello...", 0);
    }
}
```

Assessed Stage 7 - Get this signed off (hold up a sheet of paper)
Combine the two programs from Stage 5 and Stage 6 - it should open a window to ask you your name, and then print your name in a window too (instead of just printing it to the console. You will need to read the code in both stages and understand what it is doing, and combine it with the ideas behind Assessed Task 8 from Lab Sheet 1

Challenge Task
The program in Stage 6 and 7 shows an *error image* - work out what you need to do to fix it by replacing it with a more appropriate one. Hint: The answer is (sort of) on this page:
http://tinyurl.com/hacuj5u
and you need to replace the 0 in the program with something else.

Challenge Task
Find out what 'import' does; rewrite your programs from Stage 7 to get rid of the 'import' line. Why might it be better to actually include the 'import' line?