1- [20%] Re-do Problem 3 of Homework 1, using the `JOptionPane` class instead of `Scanner` for text input and output. See the end of Chapter 3 in your book and corresponding lecture slides.

2- [40%] Recall the Java class called `Appointment.java` that you worked on in Homework 1. In this problem, you are asked to modify the `Appointment` class as follows:
   
i. [10%] Modify the `public void setDuration(double newDuration)` method so that it only modifies the appointment’s length if `newDuration` is between half an hour and two hours (0.5 hours and 2 hours included). Otherwise, the duration of the appointment should remain unchanged.

   ii. [10%] Provide a constructor for the appointment class whose declaration begins as follows:

   ```java
   public Appointment(String personsName,
                      String appDay,
                      double appLength)
   ```

   The three arguments to the constructor correspond to
   
   - The name of the person to set up an appointment with
   - The day of the week for the appointment
   - The duration of the appointment

   The constructor should make sure that the duration of the appointment (`appLength`) is between a half hour and two hours. If it is not, it should create an appointment with the default length of one hour.

   [20%] Provide a method whose declaration line is as follows:

   ```java
   public void swapAppointmentWithPerson( Appointment otherApp)
   ```

   The purpose of this method is for the person who has the `Appointment otherApp` to exchange his/her appointment with us. Here is an example of how to use this method:
Suppose app1 is
1 hour appointment on Monday with Maradona

And app2 is
1.6 hour appointment on Monday with Cruyf

When app1.swapAppointmentWithPerson(app2) is called, app1 and app2 are modified as follows:

app1 becomes
1 hour appointment on Monday with Cruyf

And app2 is
1.6 hour appointment on Monday with Maradona

iii. Provide a displayAppointment() method that returns a String containing the entire information about the Appointment. Example return value for this method:

“You have a 1 hour appointment on Monday with Kofi Annan.”

3- [40%] Write a Java application called AppointmentTest2.java that does the following in the sequence given below. The format of the output should be like in the example given in the third page.

i. Lets the user enter three appointments as in Homework 1. Uses the Appointment constructor in Problem 1 for this purpose.

ii. Prints out complete information for all three appointments.

iii. Swaps the appointments of the first person and the second person using the swapAppointmentWithPerson method in Problem 1

iv. Prints out complete information for all three appointments again.

v. Calls setDuration with a negative argument on an appointment object. Calls the displayAppointment() method and prints out the result to show that the duration of the appointment has not been affected.

vi. Calls setDuration with a positive argument on an appointment object. Calls the displayAppointment() method and prints out the result to show that the duration of the appointment has been updated properly.

vii. Assigns the second and third appointments to the first appointment. For instance, if your appointment variables are named app1, app2 and app3, the test program does
app2 = app1;
app3 = app1;

Then the program should call the `displayAppointment()` method on all three appointments and print out the result.

viii. [10% bonus] Asks the user to enter a new appointment. However, if the user enters a duration that is not between 0.5 and 2 hours, it displays an error message and asks the user to re-enter the appointment duration until he/she enters a proper duration. Do not modify the Appointment class.

**Example Output for Question 3:**

Initially:

“You have a 1 hour appointment on Monday with Kofi Annan.”
“You have a 1.5 hour appointment on Monday with Ronaldinho.”
“You have a 2 hour appointment on Monday with Frank Lampart.”

After swapping the first and the second appointments:

“You have a 1 hour appointment on Monday with Ronaldinho.”
“You have a 1.5 hour appointment on Monday with Kofi Annan.”
“You have a 2 hour appointment on Monday with Frank Lampart.”

After setting -1 of duration time to appointment 1:

“You have a 1 hour appointment on Monday with Ronaldinho.”
“You have a 1.5 hour appointment on Monday with Kofi Annan.”
“You have a 2 hour appointment on Monday with Frank Lampart.”

After setting 0.5 of duration time to appointment 1:

“You have a 0.5 hour appointment on Monday with Ronaldinho.”
“You have a 1.5 hour appointment on Monday with Kofi Annan.”
“You have a 2 hour appointment on Monday with Frank Lampart.”

After assigning the first appointment to the second and third:

“You have a 0.5 hour appointment on Monday with Ronaldinho.”
“You have a 0.5 hour appointment on Monday with Ronaldinho.”
“You have a 0.5 hour appointment on Monday with Ronaldinho.”