

EEE 210: Software Engineering

Lab 6 Exercises for Week 7 (19 Feb. – 25 Feb.), Spring 2018

Note:

- Project folder nomenclature: Lab6_*yourname*
- After completion, zip your project folder and upload it to your Moodle account.
- Any queries during the lab should be discussed merely with the Instructor/TA.
- The output of each exercise you complete should be included (as screenshots) in the report named Report6_*yourname*. **Print and submit your report to the TA by the specified deadline.**

Exercise 1:

Write a Java program to implement a three-player dice game with the following rules:

1. Begin with Player A and roll two dice, dice d1 and dice d2.
2. If the sum of the two dice is odd, then accumulate it as the score of Player A. If even, then the score is 0.
3. Then roll d1 and d2 for Player B.
4. If the sum of the two dice is odd, then accumulate it as the score of Player B. If even, then the score is 0.
5. Then roll d1 and d2 for Player C.
6. If the sum of the two dice is odd, then accumulate it as the score of Player C. If even, then the score is 0.
7. Repeat steps 1 to 6 for n rounds, where n is a positive integer provided as input by the user.

Things to keep in mind:

1. You have to implement four classes namely, Player class, Dice class, Game class, and DiceGameTest class.
2. Members of Player class are:
 - i) Instance variables: id, name, and score.
 - ii) Parameterized constructor with arguments as id and name.
 - iii) Method: void updateScore() with argument d1 and d2. This method sums the score for the player.
 - iv) Method: String toString() with no argument. This method prints out the player's name and score value in each iteration.
3. Member of Dice class is:
 - i) Method: int roll() with no argument. This method rolls the dice and returns a random number between 1 and 6 inclusive.
4. Members of Game class are:
 - i) Instance variables: playerA, playerB, playerC, d1, and d2.
 - ii) No-arg constructor which initializes the id and name of each player as well as creates new objects for dice, i.e. d1 and d2.
 - iii) Method: Player winner() with arguments Dice1 and Dice2. This method sums the score for the player.
 - iv) Method: void play() with no argument. This method contains the loop in which the dice is rolled and score is recorded for each player.
5. Member of DiceGameTest class is:
 - i) Method: static void main(String args[]). It is the main method in which an object of class Game is created and the method play() is invoked.