

1 Introduction

As it states on the syllabus, projects are to be done on your own and as with all assignments the sharing of files and code is strictly prohibited and constitutes an act of Academic Misconduct. Furthermore, the use of any electronic medium, such as code repositories, forums, blogs, message boards, email, etc. is strictly prohibited and constitutes an act of Academic Misconduct. You are not to discuss the project with anyone other than the professor. You may use the resources that are on the COSC 117 course web page for this class in MyClasses.

As usual, you will submit all your work through the MyClasses page for this class, under Project #1. Make sure you do the formatting Shift+Ctrl+F (or Shift+Command+F on the Mac) before you submit your work. All you need to submit is the Java code file for the program.

The program itself should, of course, be nicely formatted and commented and should follow all the other rules of good programming style. Use the built-in formatting tool in Eclipse and put in some vertical white space to aid in the readability but don't over do it. Variable names should be representative of their purpose. As always, there must be our standard header comment. All variables must have a comment to their use and major blocks of code should contain brief but descriptive comments to their function.

You do not need to write up a formal algorithm for this project but you should think about what needs to be done, what needs to be stored and what needs to be displayed on the screen, before you begin coding. You may also consider doing the project in stages, that is, get some portions working then add in more functionality incrementally.

The grading of the project will take two forms, a sample run and an inspection of the code. If the program does not run you will receive a zero for that portion. So even if the program is not complete you will get a better grade for a partial program that runs verses a program that does not run. So I would suggest a completion in stages approach, as I mentioned above. The run portion of the grading will test the user interface for usability and conforming to the specifications I have outlined above. The code inspection portion of the grade will involve commenting, readability, correct indentation, variable names, structure and style, correctness, and conforming to specifications.

2 Fizzbin

The game of Fizzbin is a simple card and dice game played between two players. In each round of Fizzbin the two players are dealt a single card and roll one icosahedron (20 sided) die. The cards come from two different decks and could be the same.

Each player can choose to stay with their current card and roll or choose to be dealt a replacement card and/or reroll the die. If the player wants a replacement card it will be dealt off of the players deck so it must be different than the one they previously had.

The value of the player's card and roll is calculated as follows. The Ace is worth 15 points, face cards are all worth 12 points, and all other cards (2-10) are worth their face value. The die roll is worth the value of the roll (1-20). These two values are added together to get the player's score.

The winner of the round is the player with the highest score with one exception. If a player has a score that is less than half the score of the other player the player with the low score wins the round. If the scores between the two players are equal then the round is a draw and neither player wins that round. The game proceeds until one player wins 10 rounds.

The program must check to see if the user has input valid data. For example, if the user needed to input a Y or N and instead input a U the program should tell the user that the input was invalid and ask for the input again. For the error checking, you may assume that the user inputs the correct

data type. A complete run of the game is below. Note that in round 2 we did some invalid inputs.

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Round 1
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Player 1: King of Diamonds Die Roll: 9 Score: 21
Player 2: Jack of Clubs Die Roll: 10 Score: 22

Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: King of Diamonds Die Roll: 18 Score: 30
Player 2: Jack of Clubs Die Roll: 15 Score: 27

Player 1 wins this round.

Score: Player 1: 1 Player 2: 0

Round 2
=====

Player 1: 2 of Spades Die Roll: 6 Score: 8
Player 2: 7 of Hearts Die Roll: 17 Score: 24

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N:
Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: u
Player 2: Do you want to roll again? Y/N: n

Player 1: 2 of Diamonds Die Roll: 5 Score: 7
Player 2: 9 of Diamonds Die Roll: 17 Score: 26

Player 1 wins this round.

Score: Player 1: 2 Player 2: 0

Round 3
=====

Player 1: 3 of Diamonds Die Roll: 6 Score: 9
Player 2: 2 of Spades Die Roll: 6 Score: 8

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: King of Hearts Die Roll: 1 Score: 13
Player 2: King of Clubs Die Roll: 19 Score: 31

Player 1 wins this round.

Score: Player 1: 3 Player 2: 0

Round 4
=====

Player 1: 9 of Spades Die Roll: 6 Score: 15
Player 2: 2 of Diamonds Die Roll: 15 Score: 17

Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: y
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Player 2: Do you want to roll again? Y/N: n

Player 1: 9 of Spades Die Roll: 17 Score: 26
Player 2: 10 of Diamonds Die Roll: 15 Score: 25

Player 1 wins this round.

Score: Player 1: 4 Player 2: 0

Round 5
=====

Player 1: 4 of Spades Die Roll: 17 Score: 21
Player 2: Jack of Diamonds Die Roll: 3 Score: 15

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: 3 of Diamonds Die Roll: 17 Score: 20
Player 2: Jack of Diamonds Die Roll: 15 Score: 27

Player 2 wins this round.

Score: Player 1: 4 Player 2: 1

Round 6
=====

Player 1: 3 of Diamonds Die Roll: 15 Score: 18
Player 2: 3 of Spades Die Roll: 8 Score: 11

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: Jack of Clubs Die Roll: 15 Score: 27
Player 2: Jack of Clubs Die Roll: 10 Score: 22

Player 1 wins this round.

Score: Player 1: 5 Player 2: 1

Round 7
=====

Player 1: Ace of Hearts Die Roll: 5 Score: 20
Player 2: 8 of Spades Die Roll: 4 Score: 12

Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: Ace of Hearts Die Roll: 2 Score: 17
Player 2: 6 of Clubs Die Roll: 12 Score: 18

Player 2 wins this round.

Score: Player 1: 5 Player 2: 2

Round 8
=====

Player 1: King of Hearts Die Roll: 1 Score: 13
Player 2: Jack of Clubs Die Roll: 15 Score: 27
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Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: n

Player 1: King of Hearts  Die Roll: 2    Score: 14
Player 2: Jack of Clubs  Die Roll: 15   Score: 27

Player 2 wins this round.

Score:  Player 1: 5    Player 2: 3

Round 9
=====

Player 1: 4 of Clubs  Die Roll: 10    Score: 14
Player 2: Ace of Hearts  Die Roll: 2    Score: 17

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: Jack of Hearts  Die Roll: 5    Score: 17
Player 2: Ace of Hearts  Die Roll: 20   Score: 35

Player 1 wins this round.

Score:  Player 1: 6    Player 2: 3

Round 10
=====

Player 1: 10 of Clubs  Die Roll: 15    Score: 25
Player 2: 5 of Clubs  Die Roll: 1    Score: 6

Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: 10 of Clubs  Die Roll: 15    Score: 25
Player 2: 5 of Spades  Die Roll: 14   Score: 19

Player 1 wins this round.

Score:  Player 1: 7    Player 2: 3

Round 11
=====

Player 1: 5 of Hearts  Die Roll: 2    Score: 7
Player 2: Ace of Hearts  Die Roll: 8    Score: 23

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: King of Diamonds  Die Roll: 14    Score: 26
Player 2: Ace of Hearts  Die Roll: 9    Score: 24

Player 1 wins this round.

Score:  Player 1: 8    Player 2: 3

Round 12
=====
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Player 1: 5 of Hearts Die Roll: 11 Score: 16
Player 2: 7 of Spades Die Roll: 11 Score: 18

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: n

Player 1: 3 of Hearts Die Roll: 11 Score: 14
Player 2: 5 of Hearts Die Roll: 11 Score: 16

Player 2 wins this round.

Score: Player 1: 8 Player 2: 4

Round 13
=====

Player 1: 3 of Hearts Die Roll: 19 Score: 22
Player 2: 7 of Spades Die Roll: 1 Score: 8

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: 9 of Spades Die Roll: 19 Score: 28
Player 2: 9 of Hearts Die Roll: 19 Score: 28

This round was a draw.

Score: Player 1: 8 Player 2: 4

Round 14
=====

Player 1: 8 of Spades Die Roll: 11 Score: 19
Player 2: 7 of Hearts Die Roll: 9 Score: 16

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: 7 of Hearts Die Roll: 11 Score: 18
Player 2: Jack of Hearts Die Roll: 14 Score: 26

Player 2 wins this round.

Score: Player 1: 8 Player 2: 5

Round 15
=====

Player 1: 6 of Spades Die Roll: 11 Score: 17
Player 2: Jack of Diamonds Die Roll: 4 Score: 16

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: 7 of Clubs Die Roll: 11 Score: 18
Player 2: Jack of Diamonds Die Roll: 20 Score: 32

Player 2 wins this round.

```
Score:  Player 1: 8   Player 2: 6

Round 16
=====

Player 1: 4 of Spades  Die Roll: 19   Score: 23
Player 2: 7 of Clubs  Die Roll: 19   Score: 26

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: n

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: n

Player 1: 6 of Hearts  Die Roll: 19   Score: 25
Player 2: 6 of Spades  Die Roll: 19   Score: 25

This round was a draw.

Score:  Player 1: 8   Player 2: 6

Round 17
=====

Player 1: Queen of Hearts  Die Roll: 2   Score: 14
Player 2: Ace of Hearts  Die Roll: 1   Score: 16

Player 1: Do you want a different card? Y/N: n
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: n
Player 2: Do you want to roll again? Y/N: y

Player 1: Queen of Hearts  Die Roll: 2   Score: 14
Player 2: Ace of Hearts  Die Roll: 18   Score: 33

Player 1 wins this round.

Score:  Player 1: 9   Player 2: 6

Round 18
=====

Player 1: 7 of Spades  Die Roll: 1   Score: 8
Player 2: 5 of Spades  Die Roll: 6   Score: 11

Player 1: Do you want a different card? Y/N: y
Player 1: Do you want to roll again? Y/N: y

Player 2: Do you want a different card? Y/N: y
Player 2: Do you want to roll again? Y/N: y

Player 1: Ace of Spades  Die Roll: 11   Score: 26
Player 2: King of Spades  Die Roll: 12   Score: 24

Player 1 wins this round.

Score:  Player 1: 10   Player 2: 6

Final Score
=====

Player 1: 10   Player 2: 6
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