CECS 174 - Assignment 13

Dice Games

Create a dice game program that uses the Dice class that was given in Lecture Notes 24. Type the Dice class into a class file called 'Dice.java', but do not modify the code. In the same project folder, create a second class file and name it 'Assign13.java', this is where you will write your code.

Part A – Points – The player rolls a pair of dice, the sum of these two dice is their point value. The player continues to roll the dice until they match that same initial point value, at which point the game ends. Keep track of the number of times they rolled before the game ended. Display their score and return to the main menu. Allow the user to go back to the main menu at any time.

Part B – Yacht-Z – The player rolls a set of 3 dice. If two of the dice are the same then they receive 1 point for a pair. If all of the dice are the same, then the player receives 3 points for a 3-of-a-kind. If the dice values are in a series (the dice do not need to be in order for it to be a series of three), then they receive 2 points. Allow the player to choose to continue playing, keep a running sum of their points until they return to the main menu.

Use the Dice class to create dice objects as needed. Create a menu so the user may choose to play Part A, Part B, or to quit the program. Perform error checking and use methods appropriately to create your program.

Sample Output:

```
Dice Games:
1. Points
2. Yacht-Z
3. Quit
1

Points –
Rolling Dice...Your point = 6
Roll Dice? (Y/N) Y
Rolling Dice... The sum is 3.
Roll Dice? (Y/N) Y
Rolling Dice... The sum is 8.
Roll Dice? (Y/N) Y
Rolling Dice... The sum is 4.
Roll Dice? (Y/N) Y
Rolling Dice... The sum is 9.
Roll Dice? (Y/N) Y
Rolling Dice... The sum is 6.
You got 4 points.  Game over.

Dice Games:
1. Points
2. Yacht-Z
3. Quit
2
```

```
Yacht-Z -
Rolling Dice...D1=2,D2=4,D3=3
You got a series of 3!
Score = 2 points.
Play again? (Y/N) Y

Rolling Dice...D1=3,D2=1,D3=1
You got a pair!
Score = 3 points.
Play again? (Y/N) Y

Rolling Dice...D1=4,D2=4,D3=4
You got 3 of a kind!
Score = 6 points.
Play again? (Y/N) Y

Rolling Dice...D1=3,D2=6,D3=1
Awww.  Too Bad.
Score = 6 points.
Play again? (Y/N) N

Final Score = 6 points
```

CECS 174 – Extra Credit – 2 points

Pig

Incorporate the game Pig into your program for Assignment 13. Use the same Dice class to create the game Pig for two players, the user and the computer. The two players alternate turns and each has a score. At any time during a player's turn, the player is faced with two options:

1. <u>roll</u> - If the player rolls a:
   - 1: the player receives a zero for that turn and the play passes to the next player.
   - 2 through 6: the number is added to the player's turn total and the player's turn continues.

2. <u>hold</u> - The turn total is added to the player's total score and it becomes the next player's turn.

After the computer's first roll, have it randomly decide whether to roll or to hold on any subsequent turn. The first player to score 100 or more points wins.

Example Output:

```
Dice Games:                         Turn Total = 8
1. Points                           Player 2 holds
2. Yacht-Z                          End of Player 2's Turn
3. Pig
4. Quit                             - Pig -
3                                   1.  Roll
                                    2.  Hold
- Pig -                             3.  Show Score
1.  Roll                            4.  Exit
2.  Hold                            1
3.  Show Score                      You rolled a 2
4.  Exit                            Turn Total = 2
1                                   - Pig -
You rolled a 4                      1.  Roll
Turn Total = 4                      2.  Hold
                                    3.  Show Score
- Pig -                             4.  Exit
1.  Roll                            1
2.  Hold                            You rolled a 5
3.  Show Score                      Turn Total = 7
4.  Exit                            - Pig -
1                                   1.  Roll
You rolled a 1                      2.  Hold
Turn Total = 0                      3.  Show Score
End of Player 1's Turn              4.  Exit
Player 2 rolled a 3                 3
Turn Total = 3                      Player 1 = 0
Player 2 rolled a 5                 Player 2 = 8
```