

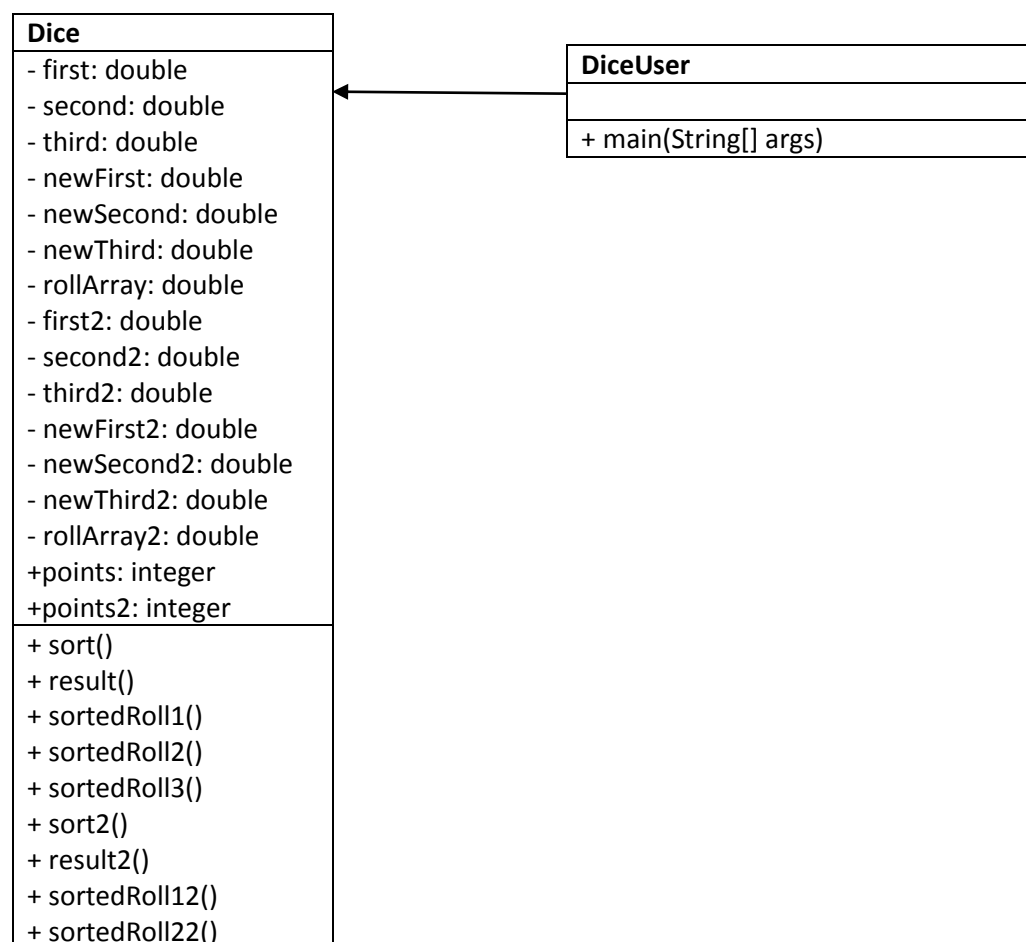
Arrays

Analysis

The Arrays program will have two users inputting scores from rolling dice. It will read in these scores, order them, then decide how many points the rolls deserve, compare these scores and determine a winner. The winner of each round, total number of rounds won for each player, total points of each player, the average points of each player and the player with the highest points will also be outputted.

Design

There will be two classes; Dice and DiceUser. DiceUser will get the scores from the users and pass them to the Dice class. It will also output the scores and other results calculated within the Dice class, but it will calculate the total points and average points scored by the users. The Dice class will compare the numbers given by both users and order them to determine what points they get. It will then compare the points scored by both users against each other to decide who has won that particular round.



+ sortedRoll32()

Pseudo Code

Public class diceUser

Main = string args

 Create new dice object

 Create new scanner

 Set player one and twos; first, second and third roll values, and their total points

 Start For loop

 Get player 1 first roll value

 Start IF

 First <1 or First >6

 Invalid choice

 End IF

 Start else

 Get second roll value

 End else

 Start IF

 Second <1 or Second >6

 Invalid choice

 End IF

 Start else

 Get third roll value

 End else

 Start IF

 Third <1 or Third >6

 Invalid choice

```
End IF
Start else
    Get player 2 first roll value
Start IF
    First <1 or First >6
        Invalid choice
End IF
Start else
    Get second roll value
End else
Start IF
    Second <1 or Second >6
        Invalid choice
End IF
Start else
    Get third roll value
End else
Start IF
    Third <1 or Third >6
        Invalid choice
End IF
Start else
    Create new dice class
    Call sorting array
    Output the three values for both players
    Output the values in order for both players
    Output winner
End else
End For
Output both players total score
Output both players average scores
```

Output overall winner

End

Public class Dice

Create constructor

Method = sort

Create new array

Assign roll values

Sort values

Assign the sorted array values to new variables

Method = sort2

Create new array

Assign roll values

Sort values

Assign the sorted array values to new variables

Method = result

Start IF

First = second and first = third

Return points value

End IF

Start else

(First+1 = second) and (second+1 = third)

Return points value

End else

Start else

(First != second) and (second != third)

Return points value

End else

Start else

```
        Return points value
    End else

Method = result2
    Start IF
        First = second and first = third
        Return point value
    End IF
    Start else
        (First+1 = second) and (second+1 = third)
        Return points value
    End else
    Start else
        (First != second) and (second != third)
        Return points value
    End else
    Start else
        Return points value
    End else
```

```
Method = sortedRoll1
    Return ordered roll 1
Method = sortedRoll2
    Return ordered roll 2
Method = sortedRoll3
    Return ordered roll 3
```

```
Method = sortedRoll12
    Return ordered roll 1
Method = sortedRoll22
```

Return ordered roll 2

Method = sortedRoll32

Return ordered roll 3

Method = winner

Start IF

Player 1 beats player 2

Output player 1 winner

End IF

Start else

Output player 2 winner

End else

Testing

Test	Expected	Actual
The players will enter scores below 1	The values will be rejected	Code wouldn't compile
The players will enter scores above 6	The values will be rejected	
The players will enter scores that aren't integers	The values will be rejected	
Player 1 will score three of a kind and player 2 a pair	Player 1 will win	
Player 2 will score three of a kind and player 1 a pair	Player 2 will win	
Player 1 will score a pair and player 2 a run	Player 1 will win	
Player 2 will score a pair and player 1 a run	Player 2 will win	
Player 1 will score a run and player 2 all different	Player 1 will win	
Player 2 will score a run and player 1 all different	Player 2 will win	