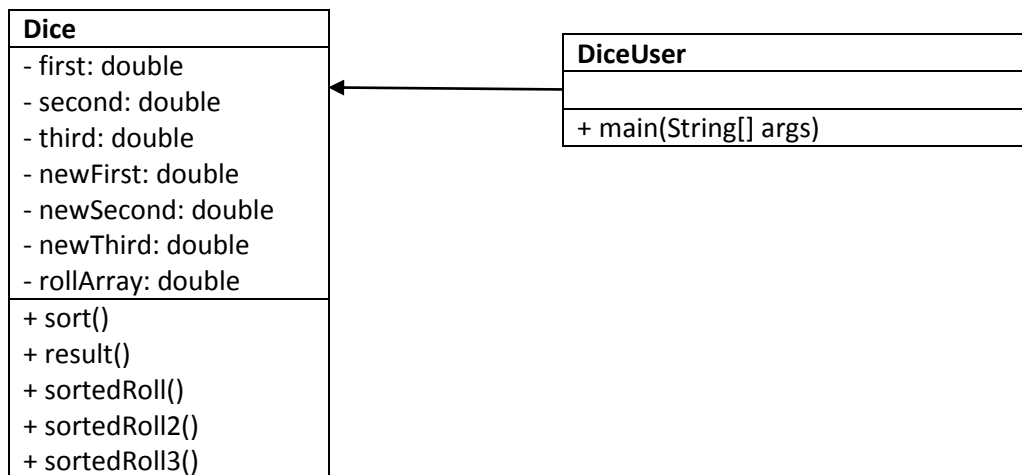# Three Dice

Analysis

The program Three Dice will read in three numbers and then determine what outcome to return depending on the values given. The possible outcomes will be; all the same, a pair, a run, or all different.

Design

There will be two classes, Dice and DiceUser. Dice will be used to compare the three numbers and determine which outcome has happened. DiceUser will read in the three numbers given by the user and pass them to Dice. It will then output the result determined in Dice.

Dice
- first: double
- second: double
- third: double
- newFirst: double
- newSecond: double
- newThird: double
- rollArray: double
+ sort()
+ result()
+ sortedRoll()
+ sortedRoll2()
+ sortedRoll3()

DiceUser
+ main(String[] args)

Pseudo Code

Public class diceUser

Main = string args

        Create new dice object

        Create new scanner

        Set second and third roll values

        Get 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

Output the values in order

Output type of result

End else

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 = result

Start IF

First = second and first = third

Return all the same

End IF

Start else

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

Return a run

End else

Start else

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

Return all different

End else

Start else

Return a pair

End else

Method = sortedRoll

Return ordered roll 1

Method = sortedRoll2

Return ordered roll 2

Method = sortedRoll3

Return ordered roll 3

Testing

Test	Expected Result	Actual Result
| All the numbers entered will be the same | The output will say they are all the same | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dice
Please input the first number:
3
Please input the second number:
3
Please input the third number:
3
The three dice have scores: 3, 3 and 3
Your rolls ordered are 3, 3, 3
The numbers are all the same

C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
``` |
| All the numbers entered will be different in ascending order | The output will say they are all different | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dice
Please input the first number:
1
Please input the second number:
3
Please input the third number:
5
The three dice have scores: 1, 3 and 5
Your rolls ordered are 1, 3, 5
The numbers are all different

C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
``` |
| The numbers entered will be different but in a random order | The output will say they're all different but will also order them | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java DiceU
Please input the first number:
5
Please input the second number:
1
Please input the third number:
3
The three dice have scores: 5, 1 and 3
Your rolls ordered are 1, 3, 5
The numbers are all different
``` |
| The numbers entered will be in a run | The output will say they are in a run | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dice
Please input the first number:
1
Please input the second number:
2
Please input the third number:
3
The three dice have scores: 1, 2 and 3
Your rolls ordered are 1, 2, 3
The numbers are in a run

C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
``` |
| The numbers entered will be in a run but of order | The output will say they are in a run and order the numbers | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Di
Please input the first number:
6
Please input the second number:
4
Please input the third number:
5
The three dice have scores: 6, 4 and 5
Your rolls ordered are 4, 5, 6
The numbers are in a run

C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
``` |
| The numbers entered will be a pair | The output will say there is pair | ```
C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dice
Please input the first number:
1
Please input the second number:
5
Please input the third number:
1
The three dice have scores: 1, 5 and 1
Your rolls ordered are 1, 1, 5
Two of the numbers are the same

C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
``` |

The first value will be below 1	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dic Please input the first number: 0 Invalid value, please try again C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
The second value entered will be below 1	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Dic Please input the first number: 1 Please input the second number: 0 Invalid value, please try again
The third value entered will be below 1	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java DiceUs Please input the first number: 1 Please input the second number: 2 Please input the third number: 0 Invalid value, please try again C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>
The first value entered will be above 6	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Please input the first number: 77 Invalid value, please try again
The second value entered will be above 6	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java D Please input the first number: 1 Please input the second number: 9 Invalid value, please try again
The third value entered will be above 6	There will be an error	C:\Users\Jack\Documents\YEAR1\COMP101\Assessment4>java Please input the first number: 4 Please input the second number: 4 Please input the third number: 8 Invalid value, please try again