

# CS 3101

# Programming

# Assignment

## DICE GAME REPORT

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3<sup>RD</sup> YEAR

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This is a simple dice game which has two players.

Game rules are as follows:

Number of Players: 02

Number of Dices: 02

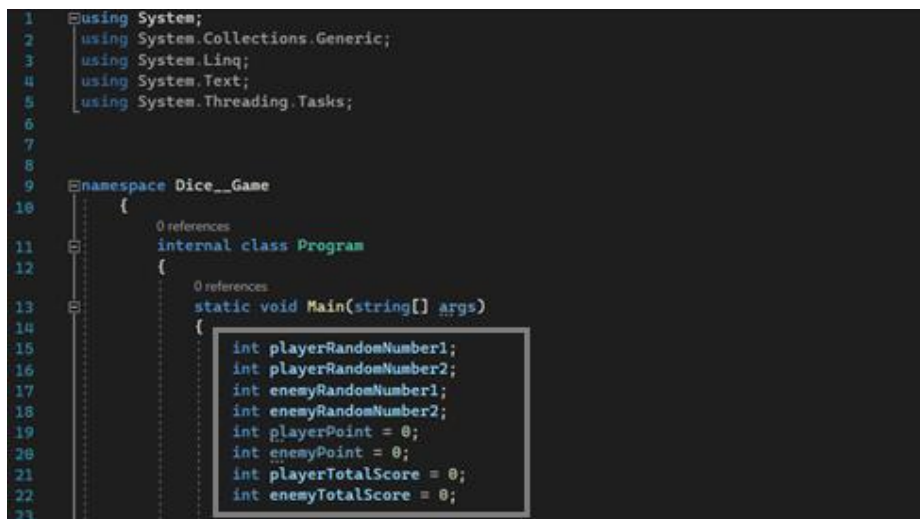
Winning Score: 100

Each player will get a chance to roll two dices at the same time. The process will continue until one player reaches the winning score.

- If 02 dices give the same result (except the dice value 1), the same player will get another chance to roll the dice.
- Else other player gets the chance to roll 02 dices.

## Coding explanation

1.



```
1 using System;
2 using System.Collections.Generic;
3 using System.Linq;
4 using System.Text;
5 using System.Threading.Tasks;
6
7
8
9 namespace Dice__Game
10 {
11     0 references
12     internal class Program
13     {
14         0 references
15         static void Main(string[] args)
16         {
17             int playerRandomNumber1;
18             int playerRandomNumber2;
19             int enemyRandomNumber1;
20             int enemyRandomNumber2;
21             int playerPoint = 0;
22             int enemyPoint = 0;
23             int playerTotalScore = 0;
24             int enemyTotalScore = 0;
```

First of all I have initialized my variables at the beginning.

playerRandomNumber1	: The random number of dice 1 of player A
playerRandomNumber2	: The random number of dice 2 of player A
enemyRandomNumber1	: The random number of dice 1 of player B
enemyRandomNumber2	: The random number of dice 2 of player B
playerPoint	: The summation of the numbers of two dices at one chance of player A
enemyPoint	: The summation of the numbers of two dices at one chance of player B
playerTotalScore	: Total score of player A
enemyTotalScore	: Total score of player B

2.

```
22         int enemyTotalScore = 0;  
23  
24         Random random = new Random();  
25
```

This is the code for generating random numbers of the dice.

3.

```
23         Random random = new Random();  
24  
25         for (int i = 0; i < 100; i++)  
26         {  
27             Console.WriteLine("Press enter key to roll the dice...");  
28             Console.ReadKey();  
29  
30  
31
```

This "FOR loop" is the code that displaying random numbers recurringly. By giving chances to the one after the other. (player A → player B → player A → ...)

4.

```
playerRandomNumber1 = random.Next(1, 7);  
playerRandomNumber2 = random.Next(1, 7);  
playerPoint = playerRandomNumber1 + playerRandomNumber2;  
playerTotalScore = playerTotalScore + playerPoint;  
  
}  
  
enemyRandomNumber1 = random.Next(1, 7);  
enemyRandomNumber2 = random.Next(1, 7);  
enemyPoint = enemyRandomNumber1 + enemyRandomNumber2;  
enemyTotalScore = enemyTotalScore + enemyPoint;
```

These codes generate the random numbers in between 1-6 in each player A and player B. And last two lines are the calculation part that needed to be displayed.

5.

```
if (playerRandomNumber1 == playerRandomNumber2)  
{  
    if (playerRandomNumber1 > 1 && playerRandomNumber2 > 1)  
    {  
        Console.WriteLine("Dice 1 is : " + playerRandomNumber1);  
        Console.WriteLine("Dice 2 is : " + playerRandomNumber2);  
        Console.WriteLine("Score of player A is : " + playerTotalScore);  
        Console.WriteLine();  
    }  
}
```

```

    }
    while (playerRandomNumber1 == playerRandomNumber2);

}

else
{
    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
    playerTotalScore = 0;
    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}

}
else
{
    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}
}

```

This "IF statement " is the condition to follow particular rules when the random numbers are same and "Else" for when the random numbers are different. This codes are related to the player A and same codes are running for the player B.

6.

```

if (playerRandomNumber1 == playerRandomNumber2)
{
    if (playerRandomNumber1 > 1 && playerRandomNumber2 > 1)
    {
        Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
        Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
        Console.WriteLine("Score of player A is : " + playerTotalScore);
        Console.WriteLine();
    }

    do
    {
        playerRandomNumber1 = random.Next(1, 7);
        playerRandomNumber2 = random.Next(1, 7);
        playerPoint = playerRandomNumber1 + playerRandomNumber2;
        playerTotalScore += playerPoint;

        Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
        Console.WriteLine("Dice 2 is : " + playerRandomNumber2);

        if (playerRandomNumber1 == 1 && playerRandomNumber2 == 1)
        {
            playerTotalScore = 0;
            Console.WriteLine("Score of player A is : " + playerTotalScore);
            Console.WriteLine();
        }
    }
}

```

```

    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}

while (playerRandomNumber1 == playerRandomNumber2);

}

else
{
    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
    playerTotalScore = 0;
    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}

}
else
{
    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}
}

```

This “IF - Else statement” represents once the two random numbers are same, checking whether those numbers are greater than 1 or equal to 1 as there’s a rule to reduced total score to zero while the two numbers are equal to one.

7.

```
do
{
    playerRandomNumber1 = random.Next(1, 7);
    playerRandomNumber2 = random.Next(1, 7);
    playerPoint = playerRandomNumber1 + playerRandomNumber2;
    playerTotalScore += playerPoint;

    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);

    if (playerRandomNumber1 == 1 && playerRandomNumber2 == 1)
    {
        playerTotalScore = 0;
        Console.WriteLine("Score of player A is : " + playerTotalScore);
        Console.WriteLine();
    }
    else
    {
        Console.WriteLine("Score of player A is : " + playerTotalScore);
        Console.WriteLine();
    }
}
while (playerRandomNumber1 == playerRandomNumber2);
```

This “Do – While Loop” represents once the dices display same numbers it should be given another chance to the same player to roll the dices until they display two different numbers.

8.

```
Console.WriteLine("Score of player A is : " + playerTotalScore);
Console.WriteLine();

}

else
{
    Console.WriteLine("Dice 1 is : " + playerRandomNumber1);
    Console.WriteLine("Dice 2 is : " + playerRandomNumber2);
    Console.WriteLine("Score of player A is : " + playerTotalScore);
    Console.WriteLine();
}

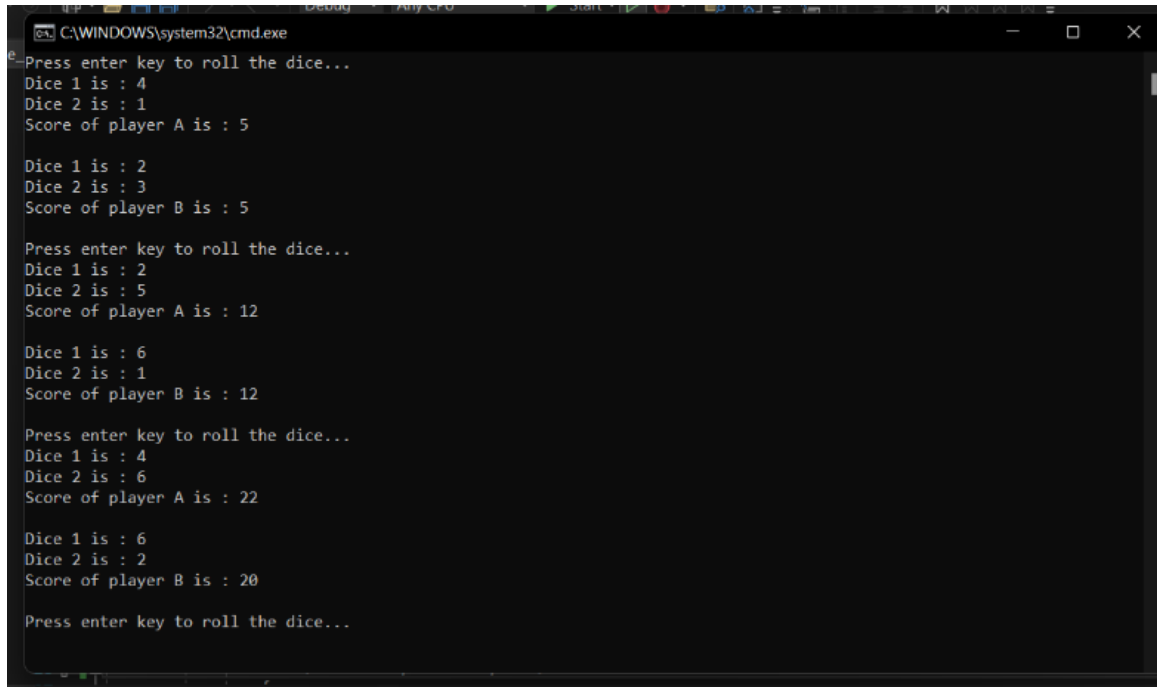
if (playerTotalScore >= 100)
{
    Console.WriteLine("....Player A has won the game!!!.....");
    break;
}

enemyRandomNumber1 = random.Next(1, 7);
enemyRandomNumber2 = random.Next(1, 7);
enemyPoint = enemyRandomNumber1 + enemyRandomNumber2;
```

This “IF- Else statement” displays the winner once the total score reached to 100 or exceeded 100.

## Console Output Explanation

- ✚ The game is proceeding between two players one after the other. That is the basic procedure. It can be shown as follows by an example;



```
C:\WINDOWS\system32\cmd.exe
Press enter key to roll the dice...
Dice 1 is : 4
Dice 2 is : 1
Score of player A is : 5

Dice 1 is : 2
Dice 2 is : 3
Score of player B is : 5

Press enter key to roll the dice...
Dice 1 is : 2
Dice 2 is : 5
Score of player A is : 12

Dice 1 is : 6
Dice 2 is : 1
Score of player B is : 12

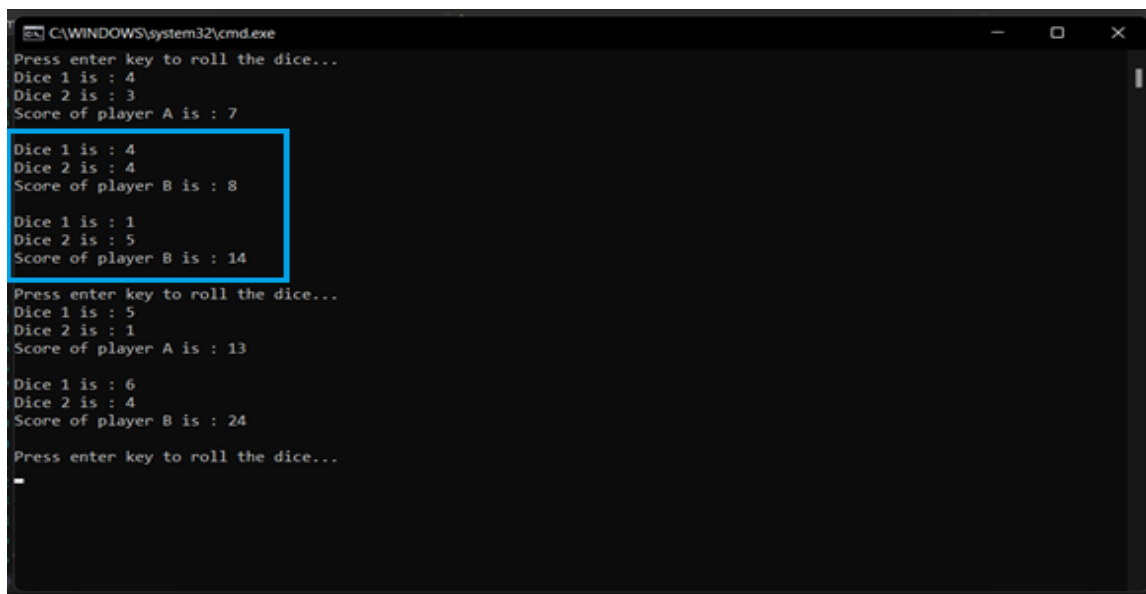
Press enter key to roll the dice...
Dice 1 is : 4
Dice 2 is : 6
Score of player A is : 22

Dice 1 is : 6
Dice 2 is : 2
Score of player B is : 20

Press enter key to roll the dice...
```

Player A and B has got the chances one after the other. Each random numbers of two dices have summed up and displayed as the score.

- ✚ When the two dices rolled same number, that particular player gets another chance to roll the dice until the two dices appear different numbers.



```
C:\WINDOWS\system32\cmd.exe
Press enter key to roll the dice...
Dice 1 is : 4
Dice 2 is : 3
Score of player A is : 7

Dice 1 is : 4
Dice 2 is : 4
Score of player B is : 8

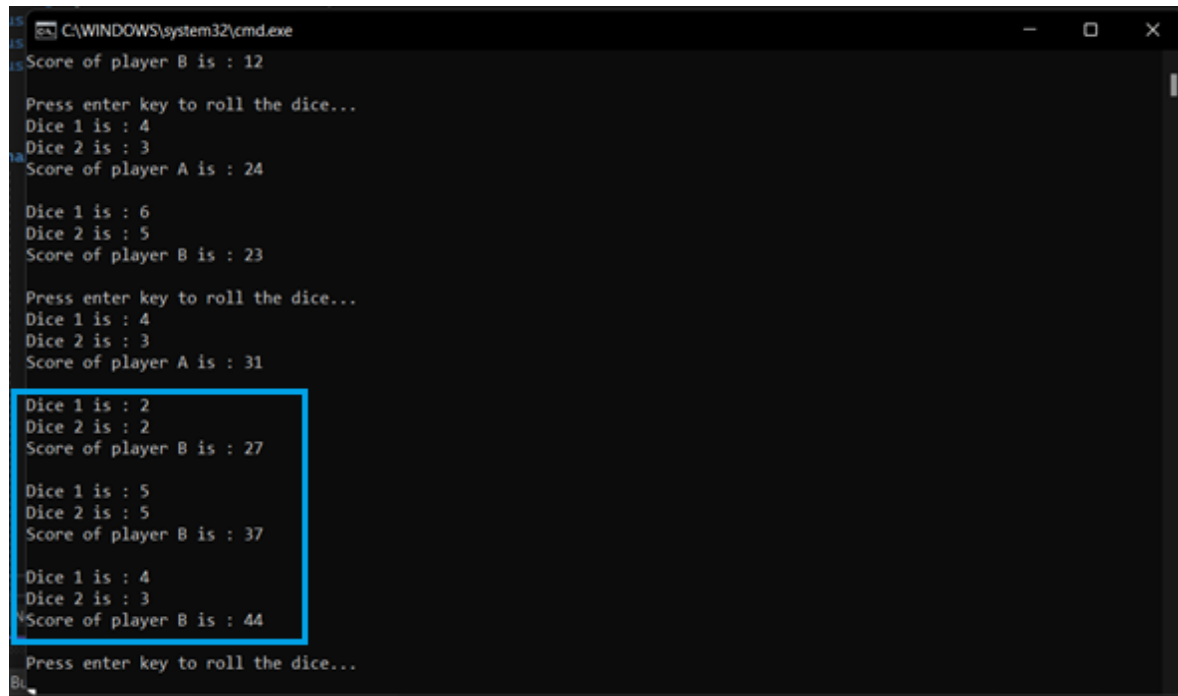
Dice 1 is : 1
Dice 2 is : 5
Score of player B is : 14

Press enter key to roll the dice...
Dice 1 is : 5
Dice 2 is : 1
Score of player A is : 13

Dice 1 is : 6
Dice 2 is : 4
Score of player B is : 24

Press enter key to roll the dice...
```

Here player B has got same number in the dices then he got another chance to roll the dice.



```
C:\WINDOWS\system32\cmd.exe
Score of player B is : 12
Press enter key to roll the dice...
Dice 1 is : 4
Dice 2 is : 3
Score of player A is : 24
Dice 1 is : 6
Dice 2 is : 5
Score of player B is : 23
Press enter key to roll the dice...
Dice 1 is : 4
Dice 2 is : 3
Score of player A is : 31
Dice 1 is : 2
Dice 2 is : 2
Score of player B is : 27
Dice 1 is : 5
Dice 2 is : 5
Score of player B is : 37
Dice 1 is : 4
Dice 2 is : 3
Score of player B is : 44
Press enter key to roll the dice...
Bu
```

Here player B has got same number of the two dices at two successive chances. So the game offers extra chances until the dices get different numbers.

- ✚ If the two dices are displaying 1 at the same time, the total score is reduced to zero at any place.

```
C:\WINDOWS\system32\cmd.exe
Press enter key to roll the dice...
Dice 1 is : 1
Dice 2 is : 1
Score of player A is : 0

Dice 1 is : 2
Dice 2 is : 3
Score of player B is : 56

Press enter key to roll the dice...
Dice 1 is : 5
Dice 2 is : 4
Score of player A is : 9

Dice 1 is : 1
Dice 2 is : 4
Score of player B is : 61

Press enter key to roll the dice...
Dice 1 is : 6
Dice 2 is : 1
Score of player A is : 16

Dice 1 is : 4
Dice 2 is : 5
Score of player B is : 70

Press enter key to roll the dice...
```

Here player A has got 1 at the same time in both dices. Therefore score has reduced to zero.

- ✚ The player who is scoring 100 or passing 100 that player will be the winner of the game. And the game will be terminated.

```
C:\WINDOWS\system32\cmd.exe
Score of player A is : 76
Dice 1 is : 6
Dice 2 is : 6
Score of player A is : 88
Dice 1 is : 1
Dice 2 is : 6
Score of player A is : 95
Dice 1 is : 2
Dice 2 is : 6
Score of player B is : 59
Press enter key to roll the dice...
Dice 1 is : 3
Dice 2 is : 1
Score of player A is : 99
Dice 1 is : 1
Dice 2 is : 2
Score of player B is : 62
Press enter key to roll the dice...
Dice 1 is : 1
Dice 2 is : 2
Score of player A is : 102
....Player A has won the game!!!.....
Press any key to continue . . .
```



Here it can be seen that player A has passed the total score 100. Therefore player A is the winner of this game.