



MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT & ENGINEERING

Department of Computer Engineering

Object Oriented Programming using C++

Mini Project Report

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Batch	B2
Semester	5
Year	3
Course	B.Tech Integrated (Computers)

Snakes and Ladders Game

About the Project:

Given a snake and ladder board, the objective of the game is to reach the destination or last block or 100th block from the source or 1st block. Each player gets to roll a dice to move that many spaces ahead while avoiding snakes and finding ladders to reach the destination.

If the player reaches a block which is the base of a ladder, the player has to climb up that ladder and if reaches a block is the mouth of the snake, and has to go down to the tail of the snake without a dice throw.

Board illustration:

(Made on Canva)

100	99	98	97	96	95	94	93	92	91
3.	82	83	34	85	86	87	88	89	20
80	70)	78	77	76	75	74	73	72	71
61	62	63	4	65	6é	67	68	69	76
60	59	53	57	56	55	54	53	52	51
41	42	43	44	45	46	47	48	49	50
40	39	38	37	36	35	34	33	32	31
21	22	23	24	25	26	27	28	29	30
20	19	18	17	16	15	14	13	12	11
1	2	3	4	5	6	7	8	9	10

Algorithm:

- 1. Start
- 2. Enter Player 1 and Player 2
- 3. Player 1 throws dice
- 4. If token lands on ladder move up to given position
- 5. If token lands on snake move down to given position
- 6. Else token moves to next position of dice
- 7. Check if token has reached last block (100)

if yes \rightarrow end game

if no \rightarrow continue by passing to next player

8. Repeat steps 2 to 5 for Player 2

Project Code:

```
#include<iostream>
#include<conio.h>
#include<stdlib.h>
#include<stdio.h>
#include<time.h>
#include<string.h>
using namespace std;
class Snakes_Ladders
  public:
  int n,p1,p2,Score;
  char li;
  string name1,name2;
  void DrawLine(int n,char li)
    cout << "\t\t\t";
    for(int i=0;i<n;i++)
       cout<<li;
  void Board()
    cout << "\n";
    DrawLine(70,'-');
```

```
cout<<"\n\n\t\t\t\t\t\ SNAKES POSITIONS ON THE BOARD\n\n";
  DrawLine(70,'-');
  cout << "\n\t\tFrom 98 to 28";
  cout <<"\n\t\tFrom 95 to 24";
  cout <<"\n\t\tFrom 92 to 51";
  cout <<"\n\t\t\tFrom 83 to 19";
  cout << "\n\t\tFrom 73 to 1";
  cout << "\n\t\tFrom 69 to 33";
  cout << "\n\t\tFrom 64 to 36";
  cout << "\n\t\tFrom 59 to 17";
  cout <<"\n\t\tFrom 55 to 7";
  cout <<"\n\t\tFrom 52 to 11";
  cout <<"\n\t\tFrom 48 to 9";
  cout <<"\n\t\tFrom 46 to 5";
  cout \ll \ln t \cdot \text{Trom } 44 \text{ to } 22 \text{''};
  DrawLine(70,'-');
  cout<<"\n\n\t\t\t\t\t\ LADDERS POSITIONS ON THE BOARD\n\n";
  DrawLine(70,'-');
  cout << "\n\t\t From 8 to 26";
  cout << "\n\t\tFrom 21 to 82";
  cout << "\n\t\tFrom 43 to 77";
  cout << "\n\t\tFrom 50 to 91";
  cout << "\n\t\tFrom 62 to 96";
  cout << "\n\t\tFrom 66 to 87";
  cout << "\n\t\tFrom 80 to 100\n";
  DrawLine(70,'-');
  cout<<endl;
void GameScore(string name1, string name2, int p1, int p2)
```

```
cout << "\n\n";
  DrawLine(70,'.');
  cout << "\n\t\t\t\t\t GAME STATUS\n\n";
  DrawLine(70,'.');
  cout \ll "\n\t \ll name1 \ll " is at position " \ll p1 \ll endl;
  cout \ll "\n\t\t" \ll name2 \ll " is at position " \ll p2 \ll endl;
  DrawLine(70,'_');
  cout<<endl;
void PlayDice(int &Score)
  srand(time(0));
  int Dice;
  Dice = (rand()\%6) + 1;
  cout << "\n\t\tDice Rolled:\t\t" << Dice;</pre>
  if(Dice==1)
    cout <<"\n\t\t\t"<<" ----- " << endl;
    cout <<"\t\t\t"<< "| |" << endl;
    cout <<"\t\t\t"<< "| O |" << endl;
    cout << "\t\t"<< " | " << endl;
    cout <<"\t\t"<< " -----" << endl;
  else if(Dice==2)
    cout <<"\n\t\t\t"<< " -----" << endl;
```

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```
cout \ll \|t\|t\| \ll \|O\| \ll endl;
  cout <<"\t\t\t"<< "| |" << endl;
  cout << "\backslash t \backslash t "<< "|O \quad |" << endl;
  cout <<"\t\t\t"<< " ----" << endl;
else if(Dice==3)
  cout <<"\n\t\t\t"<< " -----" << endl;
  cout << "\t\t"<< "| O|" << endl;
  cout <<"\t\t\t"<< "| O |" << endl;
  cout << "\t\t"<< "|O |" << endl;
  cout <<"\t\t\t"<< " ----" << endl;
else if(Dice==4)
  cout <<"\n\t\t"<< " ----" << endl;
  cout \ll \|t/t\|^2 \ll \|O O\|^2 \ll endl;
  cout << "\backslash t \backslash t "<< " | \quad | " << endl;
  cout \ll \|t/t\|^{2} \ll \|O O\|^{2} \ll endl;
  cout <<"\t\t\t"<< " -----" << endl;
else if(Dice==5)
  cout <<"\n\t\t\t"<< " -----" << endl;
  cout << "\t \t \ "O O " << endl;
  cout <<"\t\t\t"<< "| O |" << endl;
  cout \ll \|t \le \|O O\| \ll endl;
  cout <<"\t\t\t"<< " ----" << endl;
```

```
else if(Dice==6)
  cout << "\hlack" << " ----" << endl;
  cout << "\t \t" << "|O O|" << endl;
  cout << "\t t \t" << "|O O|" << endl;
  cout << "\t \t \t" << "|O O|" << endl;
  cout <<"\t\t\t"<< " ----" << endl;
Score = Score + Dice;
cout << "\n\t\tUpdated Position:\t" << Score;</pre>
switch (Score)
case 98:
     Score = 28;
     break;
case 95:
     Score = 24;
     break;
case 92:
     Score = 51;
     break;
case 83:
     Score = 19;
     break;
case 73:
     Score = 1;
     break;
case 69:
     Score = 33;
```

```
break;
case 64:
    Score = 36;
    break;
case 59:
    Score = 17;
    break;
case 55:
    Score = 7;
    break;
case 52:
    Score = 11;
    break;
case 48:
    Score = 9;
    break;
case 46:
    Score = 5;
    break;
case 44:
    Score = 22;
    break;
case 8:
    Score = 26;
    break;
case 21:
    Score = 82;
    break;
```

case 43:

```
Score = 77;
       break;
   case 50:
       Score = 91;
       break;
   case 54:
       Score = 93;
       break;
   case 62:
       Score = 96;
       break;
   case 66:
       Score = 87;
       break;
   case 80:
       Score = 100;
};
int main()
  Snakes_Ladders obj;
 int Player_1=0,Player_2=0,LastPosition;
 string Player_1_Name,Player_2_Name;
 int randomize();
 obj.DrawLine(70,'=');
  B2]\n\n'\n';
```

```
obj.DrawLine(70,'=');
cout<<"\n\n\t\t\tEnter The Name of Player 1:";
getline(cin,Player_1_Name);
cout<<"\n\t\tEnter The Name of Player 2: ";
getline(cin,Player_2_Name);
obj.Board();
while(Player_1<=100 && Player_2<=100)
{
  obj.GameScore(Player_1_Name,Player_2_Name,Player_1,Player_2);
  cout << "\n\t\t\t^***" << Player_1\_Name << "'s Turn!***\n\t\t\tPress Any Key To Play";
  getch();
  LastPosition=Player_1;
  obj.PlayDice(Player_1);
  if(Player_1<LastPosition)
    cout << "\n\a\t\t\tSNAKE ENCOUNTERD!\n";</pre>
    cout << "\t\t\t
                                      " << endl;
    cout << "\t\t\t * * * * * * *
                                      " << endl;
    cout << "\t\t\t **
                                      " << endl;
    cout << "\t\tNew Position: "<< Player_1 << "\n";</pre>
  else if(Player_1>LastPosition+6)
    cout << "\n\a\t\t\tLADDER FOUND!\n";</pre>
    cout << "\t\t----" << endl;
    cout << "\t\t\t|||||||||" << endl;
```

```
cout << "\t\t\-----" << endl;
  cout << "\t\tNew Position: "<< Player_1 << "\n";</pre>
if(Player_1==100)
  break;
}
cout << "\n\t\t\t^***" << Player_2\_Name << "'s Turn!***\n\t\t\tPress Any Key To Play";
getch();
LastPosition=Player_2;
obj.PlayDice(Player_2);
if(Player_2<LastPosition)</pre>
  cout << "\n\a\t\t\tSNAKE ENCOUNTERD!\n";</pre>
                    ** ** ** " << endl;
  cout << "\t\t\t
  cout << "\t\t\* * * * * * * * " << endl;
  cout << "\t\t\t ** ** ** ** " << endl;
  cout << "\t\t\tNew Position: "<< Player_2 << "\n";</pre>
else if(Player_2>LastPosition+6)
  cout << "\n\a\t\t\tLADDER FOUND!\n";</pre>
  cout << \text{``} \text{'} \text{'} \text{'} \text{t} \text{-----''} << endl;
  cout << "\t\t\t | | | | | | | | | | | " << endl;
```

}

```
cout << "\t\t\t-----" << endl;
  cout << "\t\t\tNew Position: "<< Player_2 << "\n";</pre>
if(Player_2==100)
  break;
cout << "\n\n";
obj.GameScore(Player_1_Name,Player_2_Name,Player_1,Player_2);
cout << "\n\n";
obj.DrawLine(70,'*');
cout << "\n\t\t\t\t\t
                      RESULT\n\n'';
obj.DrawLine(70,'*');
cout<<endl;
cout << "\n\n";
if(Player_1 >= Player_2)
  cout <<"\t\t\t"<< Player_1_Name << " IS THE WINNER!\n\n";
else
  cout << "\t\t"<< Player_2_Name << " IS THE WINNER!\n\n";
obj.DrawLine(70,'*');
getch();
```

Output:

"C:\Users\AEPAC\OneDrive\Desktop\college\SEM 5\OOP\project\	codeblocks_project1.exe" — 🗆
	SNAKE LADDER GAME
Ву	Chahel Gupta [C049, B2]
Enter The Name of Playe	r 1 : Person A
Enter The Name of Playe	r 2 : Person B
SNA	KES POSITIONS ON THE BOARD
 From 98 to 28	
From 95 to 24 From 92 to 51	
From 83 to 19 From 73 to 1	
From 69 to 33 From 64 to 36	
From 59 to 17	
From 55 to 7 From 52 to 11	
From 48 to 9 From 46 to 5	
From 44 to 22	
LAD	DERS POSITIONS ON THE BOARD
From 8 to 26 From 21 to 82	
From 43 to 77 From 50 to 91	
From 62 to 96	
From 62 to 96 From 66 to 87	
From 80 to 100	
	GAME STATUS
Person A is at position	0
Person B is at position	0
Person A's Turn!	
Press Any Key To Play Dice Rolled:	2
 0	
0	
[0	
Updated Position:	2
Person B's Turn!	
Press Any Key To Play Dice Rolled:	5
 0	
į o į	
0	
Updated Position:	5

	GAME STATUS
Person A is at position	0
Person B is at position	0
Person A's Turn! Press Any Key To Play Dice Rolled: 	2
0 0 	
Updated Position:	2
Person B's Turn! Press Any Key To Play Dice Rolled: 0	5
12	
Updated Position:	
	GAME STATUS
Person A is at position	2
Person B is at position	
Person A's Turn! Press Any Key To Play	
Dice Rolled: 0	5
0	
Updated Position:	7
Person B's Turn! Press Any Key To Play Dice Rolled: 	
0	
Updated Position:	10
	GAME STATUS
Person A is at position	7
Person B is at position	
Person A's Turn! Press Any Key To Play Dice Rolled: 	
0	

Updated Position:	12		
Person B's Turn!			
Press Any Key To Play Dice Rolled:	2		
	2		
0			
jo j			
Updated Position:	12		
		GAME STATUS	
Person A is at position	12		
Person B is at position			
Person A's Turn! Press Any Key To Play			
Dice Rolled:	2		
0			
Updated Position:	14		
Person B's Turn!			
Press Any Key To Play Dice Rolled:	2		
	2		
0			
Dice Rolled:	2		
0			
Updated Position:	14		
		GAME STATUS	
Person A is at position			
Person B is at position	14		
Person A's Turn!			
Press Any Key To Play Dice Rolled:			
0 0			
Updated Position:	19		
Person B's Turn!			
Press Any Key To Play Dice Rolled:	5		
0 0			
j o j			
O O 			
Updated Position:	19		
opaucca rosicion.	13		

		GAME STATUS	
Person A is at position	19		
Person B is at position	19		
Person A's Turn!			
Press Any Key To Play			
Dice Rolled:	5		
[0 0]			
0 0 0			
Undated Desition.	24		
Updated Position:	24		
Person B's Turn!			
Press Any Key To Play Dice Rolled:	5		
0 0 0			
0 0			
Updated Position:	24		
opadeca rosierom			
		GAME STATUS	
Person A is at position	24		
Person B is at position	24		
Person A's Turn!			
Press Any Key To Play			
Dice Rolled:	5		
[0 0]			
0 0 0			
Undated Desition:	20		
Updated Position:	29		
Person B's Turn!			
Press Any Key To Play Dice Rolled:	3		
0			
jo j			
Updated Position:	27		
		GAME STATUS	
Person A is at position	29		
Person B is at position	27		
Person A's Turn!			
Press Any Key To Play			
Dice Rolled:			
0			
i o i			

GAME STATUS

Person B is at position 26

```
***Person A's Turn!***
Press Any Key To Play
Dice Rolled:
О
Updated Position:
***Person B's Turn!***
Press Any Key To Play
Dice Rolled:
Updated Position:
                                 GAME STATUS
Person A is at position 31
Person B is at position 31
***Person A's Turn!***
Press Any Key To Play
Dice Rolled:
0 0
Updated Position:
***Person B's Turn!***
Press Any Key To Play
Dice Rolled:
Updated Position:
                                 GAME STATUS
Person A is at position 36
Person B is at position 34
***Person A's Turn!***
Press Any Key To Play
Dice Rolled:
Updated Position:
***Person B's Turn!***
Press Any Key To Play
Dice Rolled:
```

Updated Position:

SNAKE ENCOUNTERD!

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Person A's Turn! Press Any Key To Play

```
Dice Rolled:
Updated Position:
***Person B's Turn!***
Press Any Key To Play
Dice Rolled:
Updated Position:
                           29
                                GAME STATUS
Person A is at position 18
Person B is at position 29
***Person A's Turn!***
Press Any Key To Play
Dice Rolled:
     0
Updated Position:
                           20
***Person B's Turn!***
Press Any Key To Play
Dice Rolled:
|0 0|
| 0 |
|0 0|
Updated Position:
                                GAME STATUS
Person A is at position 20
Person B is at position 34
***Person A's Turn!***
Press Any Key To Play
Dice Rolled:
Updated Position:
Press Any Key To Play
Dice Rolled:
|0 0
| 0 |
|0 0
```

Updated Position:	39
	GAME STATUS
Person A is at position	25
Person B is at position	39
Person A's Turn! Press Any Key To Play Dice Rolled:	2
0 0	
Updated Position:	27
Person B's Turn! Press Any Key To Play Dice Rolled:	2
0 0	
Updated Position:	41
	GAME STATUS
Person A is at position	27

Person B is at position	1 41
Person A's Turn! Press Any Key To Play Dice Rolled: 0 0	2
Updated Position:	29
Person B's Turn! Press Any Key To Play Dice Rolled: 0 0 Updated Position: LADDER FOUND!	
New Position: 77	GAME STATUS
Person A is at position	
Person B is at position	

Updated Position:	87		
		GAME STATUS	
Person A is at position			
Person B is at position	8/		
Person A's Turn! Press Any Key To Play			
Dice Rolled:	3		
0 0 0 			
Updated Position: SNAKE ENCOUNTERD! ** ** **	44		
** ** ** ** ** New Position: 22	*		
	6		
0 0 0 0 0 0			
Updated Position:	93		
		GAME STATUS	
		GAME STATUS	
		GAME STATUS	
Person A is at position		GAME STATUS	
Person A is at position		GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled:	 22 93	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: 0 0 0 0 0 0 0 0 0	 22 93	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: 0 0 0 0 0 0 0	93	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play	 22 93 6	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: 0	 22 93 6	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: Updated Position:	 22 93 6	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: Updated Position:	 22 93 6	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position:	22 93 6	GAME STATUS	
Person A is at position Person B is at position ***Person A's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position: Updated Position: ***Person B's Turn!*** Press Any Key To Play Dice Rolled: Updated Position:	22 93 6 6	GAME STATUS	

-			
P D	**Person A's Turn!*** ress Any Key To Play ice Rolled:	3	
	0 0 0		
U	pdated Position:	31	
P	**Person B's Turn!*** rress Any Key To Play rice Rolled:	1	
	0		
U	pdated Position:	100	
		GAME STATUS	
P	erson A is at position	31	
Р	erson B is at position	100	
*	*************	******************************	
		RESULT	
		GAME STATUS	
		74	
	Person A is at position		
-	Person B is at position		
	**************	***************************************	
		RESULT	
*	**************	************************************	
P	Person BIS THE WINNER!		
Process returned 0 (0x0) Press any key to continue	execution time : 4086 e.	5.443 s	