

**SRM University AP, Amaravathi**



## **“ Snake and Ladder Game”**

**Introduction programming language using C project**

**Submitted by : Group - 8**

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## Objective

The main object of the game is to cross one's game piece, according to die rolls, from the start to the finish. The game is a simple race based on luck, and it is mostly admired by young children.

- It teaches strategy skills to your children, team work, color recognition and it is fun to play.
- Playing snake and ladder helps children to recognize the numbers they hear and talk about in everyday life, until they know a written symbol with the meaning of the value they understand in their mind.
- To apply the file handling concepts so as to retrieve the players data files that contain the info of the players. This is completely a user friendly side by side game.
- To use the concept of C language to develop an easy snake and ladder game that has an entire interest for the user.
- It particularly aims to reach the final square (100).

Snake and ladder board is to find out the minimum number of dice throws required to reach the destination or last cell from source or 1st cell. Basically, the player has total control over the outcome of dice throw and wants to find out the minimum number of throws required to reach the last cell.

## Abstract

Snake and ladder is a well known game among children even among matured people. The rules and regulations of the game are as well known as the game. The case study meant for implementing this game without losing its interest and attraction. The game is in two modes-two players. The user can interact with the game using either keyboard or mouse. The number and position of the ladder and snake are generated and fixed. The goal of the game is to reach **the final square on the board** .

**Technologies Used** : GNU GCC compiler on Code::Blocks IDE

## **Introduction**

Snake and ladder is the game which is used by the teacher to reach the students about good and bad as ladders are represented nearly as good deeds and snakes punishment for the bad.

It allows the students to understand the concepts of mathematics easily; in addition students can be exposed to the operations like addition and subtraction indirectly.

It also teaches strategy skills, team work, color recognition and it is fun to play for students.

The square on the snake and ladder is numbered from 1 to 100.

There are a number of snakes and ladders placed on board at certain numbers.

These snakes and ladders will be connecting the two game squares on the board.

- The game is played by two players with their own token to move around the board.
- Each player puts their token on the space where start here is given.
- Each Player rolls the die then moves the token to the designated number of spaces, between one and six.
- If a player lands on the bottom of a ladder, he should climb the ladder, which helps him to get higher on the board.
- If a player lands on top of a snake, the player must slide down to the bottom of it.
- If the player token is on 97, the player needs to roll exactly 3 to win, if the rolling number is more than 3, then the player token will stay in the same position until the next turn.
- The player who reaches the 100th square first by rolling the dice or climbing the Ladder, is the winner of the game.

## **Project modules**

Snake and ladder board is to find out the minimum number of dice throws required to reach the destination or last cell from source or 1st cell. Basically, the player has total control over the outcome of dice throw and wants to find out the minimum number of throws required to reach the last cell.

Here, in our snake and ladder game using the C programming language project

We used **2 modules** .

### **1. RF Module :**

- The RF module in the game is used in rolling the dice.
- The rand() method in it will return a random number which when moduled over 7 will give a number between 1-6.
- When a player rolls a dice RF module will be called and returns a number between 1 to 6 based on which the position of the player will be decided.

### **2. Display char Module:**

- This Display character module helps to display the current position of the player in a game.
- This function writes a white space in the previous place and then prints the representation character as the player's value in the new location.
- The main aim of this function is to print the player's indicator in the respective position.
- If the current position of the player is 100 then it will congratulate the player.

## Code :

```
#include<stdio.h>
#include<stdlib.h>
int rd()
{
    int rem;
    A:rem=rand()%7;
    if(rem==0)
        goto A;
    else
        return rem;
}
void displaychart(int curp,char player[4])
{
    int i,j,t,c,sft=0,diceres,pos1,pos2;

    if(curp==100)
    {
        printf("Congratulations!!!!!! \n\nPlayer %s wins\n",player);
        scanf("%*s");
        exit(0);
    }

    for(i=10;i>0;i--)
    {
        t=i-1;
        if((sft%2)==0)
        {
            c=0;
            for(j=10;j>=1;j--)
            {
                diceres=(i*j)+(t*c++);

                if(curp==diceres)
```



[illegible]









## **Algorithm**

**Step 1 :** Start

**Step 2 :** Players can view some of the instructions like at which numbers snakes and ladders are there and next they can view some options to play the game and exit from the game.

**Step 3 :** First player will throw the dice, if score is 1 then score accumulation will start for this player otherwise score accumulation will not start and the second player will throw the dice.

**Step 4 :** while playing the game players can view at which number they are in p1 is first player, whereas p2 is second player. If a player got 6 while rolling a dice then they can have another one chance to roll dice.

**step 5 :** when a player rolls the dice if they get a number where a snake is present then that particular player will directly go to the bottom of the snake, if they get a ladder they will directly go to the top of the ladder.

**Step 6 :** Check for winner (whether current player scored 100 or not)

**Step 7 :** if winner not found it's second player turn (will repeat step 3 and 6)

**Step 8 :** if the winner found the game is over then the game will be concluded and displays that congratulation so and so the player has won the game.

**Step 9 :** Game Ends

## Sample input/ output :

1) Here are some of the instructions for the snakes and ladders game .

```
"C:\Users\venka\OneDrive\Desktop\code blocks\snake and ladder game\bin\Debug\snake and ladder game.exe"
Snakes: | 25 to 9 | 65 to 40 | 99 to 1 |
Ladder: | 13 to 42 | 60 to 83 | 70 to 93 |

Choose your option
[1] Player 1 plays
[2] Player 2 plays
[3] Exit
```

2) when you enter 1 as input that means the player is rolling the dice and moves his token to the number on the dice.

```
"C:\Users\venka\OneDrive\Desktop\code blocks\snake and ladder game\bin\Debug\snake and ladder game.exe"

Snakes And Ladders
100 99 98 97 96 95 94 93 92 91
81 82 83 84 85 86 87 88 89 90
80 79 78 77 76 75 74 73 72 71
61 62 63 64 65 66 67 68 69 70
60 59 58 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 -P1- 7 8 9 10

Dice = 6

Player 2 position is 0

Snakes: | 25 to 9 | 65 to 40 | 99 to 1 |
Ladder: | 13 to 42 | 60 to 83 | 70 to 93 |

Choose your option
[1] Player 1 plays
[2] Player 2 plays
[3] Exit
```

3) when you enter 2 as input that means the player is rolling the dice and moves his token to the number on the dice.

```
"C:\Users\venka\OneDrive\Desktop\code blocks\snaek and ladder game\bin\Debug\snaek and ladder game.exe"

Snakes And Ladders
100 99 98 97 96 95 94 93 92 91
81 82 83 84 85 86 87 88 89 90
80 79 78 77 76 75 74 73 72 71
61 62 63 64 65 66 67 68 69 70
60 59 58 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 -P2- 7 8 9 10

Dice = 6

Player 1 position is 7

Snakes: | 25 to 9 | 65 to 40 | 99 to 1 |
Ladder: | 13 to 42 | 60 to 83 | 70 to 93 |

Choose your option
[1] Player 1 plays
[2] Player 2 plays
[3] Exit
```

4) when you enter 3 as input that implies the game is over and exit at the spot.

```

Dice = 6

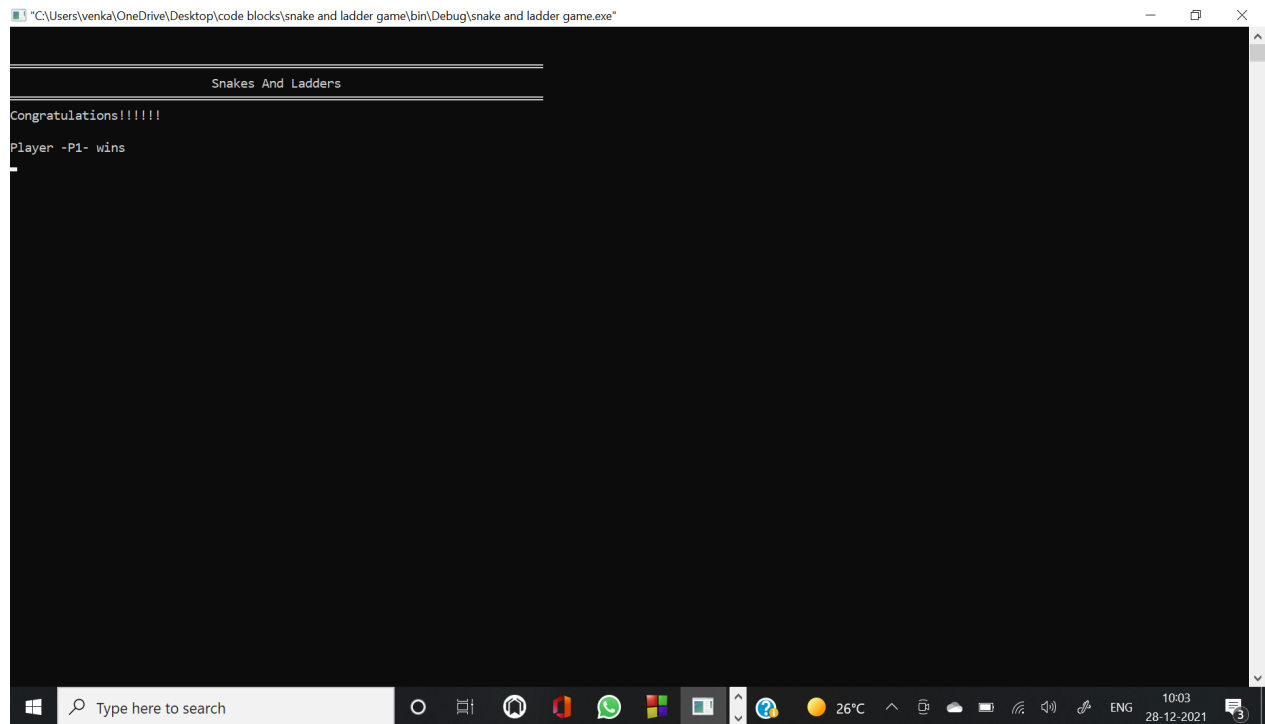
Player 1 position is 7

Snakes: | 25 to 9 | 65 to 40 | 99 to 1 |
Ladder: | 13 to 42 | 60 to 83 | 70 to 93 |

Choose your option
[1] Player 1 plays
[2] Player 2 plays
[3] Exit
3

Process returned 0 (0x0)   execution time : 105.152 s
Press any key to continue.
```

5) The player who reaches the 100 or final square on the board first is the winner.



## System Requirements Specification

### SOFTWARE REQUIREMENTS :

Language used : C Programming

Operating system : windows 10

## **HARDWARE REQUIREMENTS:**

Hard Disk : 64 bit

Processor : 11th gen intel core i5

**Conclusion** : This game teaches strategy skills to children, teamwork, color recognition and it is fun to play. Life is not suggested to be a one-sided affair. You will face both the good and bad times and also ups and downs. Just like ladders(ups) and snakes(downs), you will meet good and evil around you and you will also do both the right and the wrong things as you go through the beautiful journey of life.