



BVRIT HYDERABAD College of
Engineering for Women (UGC-Autonomous)

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PPS Class Activity

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Problem Statement:

Snake and Ladder Game with Two Players

You're tasked with creating a console-based Snake and Ladder game for two players. The game should involve a board with positions numbered from 1 to 20. Players take turns rolling a dice to determine their movement on the board. The board contains snakes and ladders that can either help or hinder their progress.

Snakes cause a player to move backward, while ladders allow a player to move forward. The goal is for a player to reach or exceed position 20 first. The game should continue until a player wins.

Your implementation should include the following elements:

1. Display the current position of each player on the board after every turn.
2. Simulate the dice roll for each player.
3. Handle the movement of players based on the dice roll and the presence of snakes and ladders.
4. Declare the winner when a player reaches or exceeds position 20.

Source Code:

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
#define SIZE 20

void playGame() {

    int player1Pos = 0, player2Pos = 0, dice;
    srand(time(NULL));

    while (player1Pos < SIZE && player2Pos < SIZE) {
        printf("Player 1, press Enter to roll the dice...");
        getchar();

        dice = rand() % 6 + 1;
        player1Pos += dice;

        // Check for snakes and ladders
        if (player1Pos == 11) {
            player1Pos = 2;
        } else if (player1Pos == 14) {
            player1Pos = 8;
        } else if (player1Pos == 17) {
            player1Pos = 4;
        }
        printf("Player 1 rolled a %d. Position: %d\n", dice, player1Pos);
        if (player1Pos >= SIZE) {
            printf("Player 1 reached or exceeded position %d. Player 1 wins!\n", SIZE);
            break;
        }

        printf("Player 2, press Enter to roll the dice...");
        getchar();

        dice = rand() % 6 + 1;
        player2Pos += dice;

        // Check for snakes and ladders
        if (player2Pos == 11) {
            player2Pos = 2;
        } else if (player2Pos == 14) {
```

```
        player2Pos = 8;
    } else if (player2Pos == 17) {
        player2Pos = 4;
    }
    printf("Player 2 rolled a %d. Position: %d\n", dice, player2Pos);
    if (player2Pos >= SIZE) {
        printf("Player 2 reached or exceeded position %d. Player 2 wins!\n", SIZE);
        break;
    }
}
}

int main() {
    printf("Welcome to the Snake and Ladder Game with 2\n");
    playGame();
    return 0;
}
```

Output:

```
Welcome to the Snake and Ladder Game with 2 players!
Player 1, press Enter to roll the dice...
Player 1 rolled a 5. Position: 5
Player 2, press Enter to roll the dice...
Player 2 rolled a 3. Position: 3
Player 1, press Enter to roll the dice...
Player 1 rolled a 6. Position: 2
Player 2, press Enter to roll the dice...
Player 2 rolled a 4. Position: 7
Player 1, press Enter to roll the dice...
Player 1 rolled a 6. Position: 8
Player 2, press Enter to roll the dice...
Player 2 rolled a 6. Position: 13
Player 1, press Enter to roll the dice...
Player 1 rolled a 5. Position: 13
Player 2, press Enter to roll the dice...
Player 2 rolled a 6. Position: 19
Player 1, press Enter to roll the dice...
Player 1 rolled a 4. Position: 4
Player 2, press Enter to roll the dice...
Player 2 rolled a 2. Position: 21
Player 2 reached or exceeded position 20. Player 2 wins!
```