Task 4 : Write a program to implement a snake and ladder game.

```java
import java.util.Scanner;

public class snake_and_ladder {
    private static final int WINNING_SCORE = 100;
    private static final int BOARD_SIZE = 100;
    private static final int[] SNAKE_POSITIONS = {16, 47, 49, 56, 62, 64, 87, 93, 95, 98};
    private static final int[] LADDER_START_POSITIONS = {1, 4, 9, 21, 28, 36, 51, 71, 80};

    private int[] playerPositions;
    private int numPlayers;
    private Random random;

    public snake_and_ladder(int numPlayers) {
        this.numPlayers = numPlayers;
        this.playerPositions = new int[numPlayers];
        this.random = new Random();
    }

    public void play() {
        Scanner scanner = new Scanner(System.in);
        while (true) {
            for (int player = 0; player < numPlayers; player++) {
                System.out.println("\nPlayer " + (player + 1) + "'s turn.");
                System.out.println("Press enter to roll the dice.");
                scanner.nextLine();

                int diceRoll = rollDice();
                System.out.println("You rolled a " + diceRoll + ".");

                playerPositions[player] += diceRoll;
                if (playerPositions[player] > BOARD_SIZE) {
                    playerPositions[player] -= diceRoll;
                    System.out.println("You need " + (BOARD_SIZE - playerPositions[player]) + " to win. Roll again.");
                } else {
                    playerPositions[player] = checkSnakeAndLadder(playerPositions[player]);
                    System.out.println("Your position is now: " + playerPositions[player]);

                    if (playerPositions[player] == WINNING_SCORE) {
                        System.out.println("Player " + (player + 1) + " wins!");
                        scanner.close();
                        return;
                    }
                }
```

```java
            }
        }
    }

    private int rollDice() {
        return random.nextInt(6) + 1;
    }

    private int checkSnakeAndLadder(int position) {
        for (int i = 0; i < SNAKE_POSITIONS.length; i++) {
            if (position == SNAKE_POSITIONS[i]) {
                System.out.println("Oops! You encountered a snake.");
                return 1;
            }
        }

        for (int i = 0; i < LADDER_START_POSITIONS.length; i++) {
            if (position == LADDER_START_POSITIONS[i]) {
                System.out.println("Yay! You found a ladder.");
                return (i == LADDER_START_POSITIONS.length - 1) ? BOARD_SIZE : LADDER_START_POSITIONS[i + 1];
            }
        }

        return position;
    }

    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the number of players: ");
        int numPlayers = scanner.nextInt();

        snake_and_ladder game = new snake_and_ladder(numPlayers);
        game.play();
    }
}
```

Output :

```
Enter the number of players: 2

Player 1's turn.
Press enter to roll the dice.
4
You rolled a 5.
Your position is now: 5

Player 2's turn.
Press enter to roll the dice.
2
You rolled a 4.
Yay! You found a ladder.
Your position is now: 9

Player 1's turn.
Press enter to roll the dice.
6
You rolled a 6.
Your position is now: 11

Player 2's turn.
Press enter to roll the dice.
3
You rolled a 1.
Your position is now: 10

Player 1's turn.
Press enter to roll the dice.
2
You rolled a 2.
Your position is now: 13

Player 2's turn.
Press enter to roll the dice.
5
You rolled a 3.
Your position is now: 13

Player 1's turn.
Press enter to roll the dice.
1
```