Rock Paper Scissor in C

Rock Paper Scissor (which is also called **Stone Paper Scissor**):It is a hand game and played between two people, in which each player simultaneously forms one of three shapes. The winner of the game is decided as per the below rules:

- Rock vs Paper -> Paper wins.
- Rock vs Scissor -> Rock wins.
- Paper vs Scissor -> Scissor wins.

In this game, the player will be asked to make a choice according to the choice of Player and computer and then the result will be displayed along with the choices of both computer and player.

Approach: Below is the functionality that needed to be implemented in the program:

main() function:

- It consists of the declaration of the variables.
- printf() and scanf() functions for displaying the content and taking input from the user. It also contains two predefined functions:
    - srand() and rand() which are used to generate random numbers in the range **[0, RAND_MAX)** and **srand()** especially will help to generate a random number at each time.
    - Take a modulo of random numbers generated with 100 to make its range between (0 and 100).
    - As the range is up to 100 only, the distribution among all the options i.e., **stone**, **paper**, and **scissors** are equal as all of them have an equal probability of coming.

Note: This random number will decide the choice of computer as:

- If the number is between 0-33 then the choice will be **Stone**.
- If the number is between 33-66 then the choice will be **Paper**.
- If the number is between 66-100 then the choice will be **Scissors**.

game() function: This function consists of if-else statements that will compare the choice of player and computer. If the player wins then it will return **1**. Otherwise, if the computer wins then it will return **0**. If it is a tie, it will return **-1**.

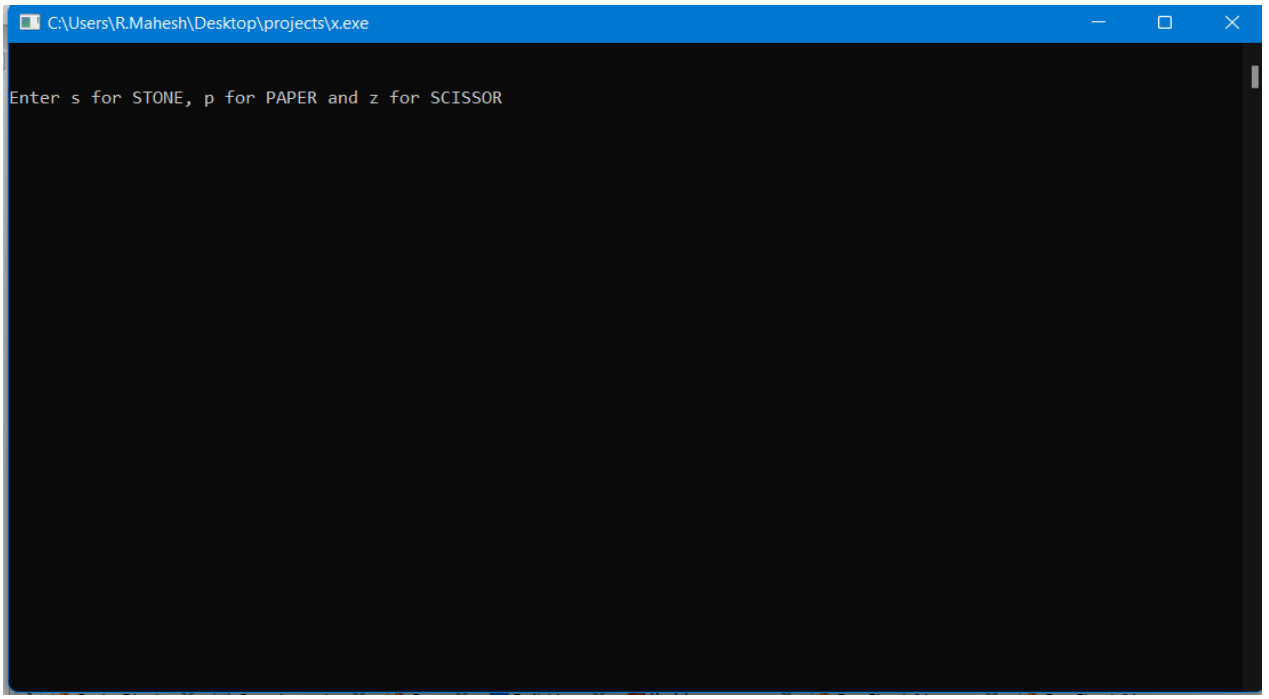
Below is the implementation of the above approach:

C

```
#include <math.h>
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
int game(char player, char computer)
{
	if (player== computer)
		return -1;
	 else if (player== 's' && computer == 'p')
		 return 0;
			else if (player == 'p' && computer == 's')
	  return 1;
	  else if (player== 's' && computer == 'z')
			return 1;
		  else if (player== 'z' && computer == 's')
			return 0;
		   else if (player== 'p' && computer == 'z')
			return 0;
		  else if (player== 'z' && computer == 'p')
				return 1;
}
int main()
{
	int k;
	char player, computer, res;
	srand(time(NULL));
	k= rand() % 100;
	if (k < 33)
		computer = 's';
	else if (k > 33 && k< 66)
		computer = 'p';
	else
		computer = 'z';
	printf("\n\nEnter s for STONE, p for PAPER and z for SCISSOR\n\t\t");
	scanf("%c", &player);
	res = game(player, computer);
	if (res== -1) {
		printf("\n\nGame Draw!\n");
	}
	else if (res== 1) {
		printf("\n\nWow! You have won the game!\n");
	}
	else {
		printf("\n\nOh! You have lost the game!\n");
	}
		printf("\tYou choose : %c and Computer choose : %c\n",player, computer);

	return 0;
}
```

- Firstly the player will be asked about the choice:



- When the player enters the choice then the result is displayed: