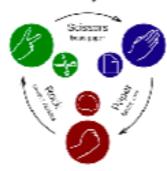# Assignment-4 (FOCP-1)

Rock Paper Scissor (which is also called **Stone Paper Scissor**) 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 user will be asked to make choice and according to the choice of user and computer and then the result will be displayed along with the choices of both computer and user.

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**.

```c
#include <time.h>

void displayChoice(int choice) {
    if (choice == 0)
        printf("Rock");
    else if (choice == 1)
        printf("Paper");
    else if (choice == 2)
        printf("Scissors");
}

int main() {
    int userChoice, computerChoice;
    char playAgain;

    do {
        // Display menu
        printf("\nRock Paper Scissors Game\n");
        printf("-------------------------\n");
        printf("Choose an option:\n");
        printf("0. Rock\n");
        printf("1. Paper\n");
        printf("2. Scissors\n");
        printf("Enter your choice: ");
        scanf("%d", &userChoice);

        if (userChoice < 0 || userChoice > 2) {
            printf("Invalid choice. Please choose between 0 (Rock), 1 (Paper), or 2 (Scissors).\n");
            continue;
        }

        (time(0));
        int randomNum = rand() % 101; // Generates a number between 0 and 100
        if (randomNum <= 33)
            computerChoice = 0; // Rock
        else if (randomNum <= 66)
            computerChoice = 1; // Paper
        else
            computerChoice = 2; // Scissors

        // Display choices
        printf("\nYou chose: ");
```

```c
        displayChoice(userChoice);
        printf("\nComputer chose: ");
        displayChoice(computerChoice);
        printf("\n");

        // Determine the winner
        if (userChoice == computerChoice) {
            printf("Result: It's a tie!\n");
        } else if ((userChoice == 0 && computerChoice == 2) || // Rock beats Scissors
               (userChoice == 1 && computerChoice == 0) || // Paper beats Rock
               (userChoice == 2 && computerChoice == 1)) { // Scissors beat Paper
            printf("Result: You win!\n");
        } else {
            printf("Result: Computer wins!\n");
        }

        // Ask if the user wants to play again
        printf("\nDo you want to play again? (y/n): ");
        scanf(" %c", &playAgain);

    } while (playAgain == 'y' || playAgain == 'Y');

    printf("Thank you for playing!\n");
    return 0;
}
```

```c
#include <time.h>

void displayChoice(int choice) {
    if (choice == 0)
        printf("Rock");
    else if (choice == 1)
        printf("Paper");
    else if (choice == 2)
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int main() {
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    do {
        // Display menu
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        printf("Choose an option:\n");
        printf("0. Rock\n");
        printf("1. Paper\n");
        printf("2. Scissors\n");
        printf("Enter your choice: ");
        scanf("%d", &userChoice);

        if (userChoice < 0 || userChoice > 2) {
            printf("Invalid choice. Please choose between 0 (Rock), 1 (Paper), or 2
(Scissors).\n");
            continue;
        }
```

```c
    (time(0));
    int randomNum = rand() % 101; // Generates a number between 0 and 100
    if (randomNum <= 33)
        computerChoice = 0; // Rock
    else if (randomNum <= 66)
        computerChoice = 1; // Paper
    else
        computerChoice = 2; // Scissors

    // Display choices
    printf("\nYou chose: ");
    displayChoice(userChoice);
    printf("\nComputer chose: ");
    displayChoice(computerChoice);
    printf("\n");

    // Determine the winner
    if (userChoice == computerChoice) {
        printf("Result: It's a tie!\n");
    } else if ((userChoice == 0 && computerChoice == 2) || // Rock beats Scissors
               (userChoice == 1 && computerChoice == 0) || // Paper beats Rock
               (userChoice == 2 && computerChoice == 1)) { // Scissors beat Paper
        printf("Result: You win!\n");
    } else {
        printf("Result: Computer wins!\n");
    }

    // Ask if the user wants to play again
    printf("\nDo you want to play again? (y/n): ");
    scanf(" %c", &playAgain);

} while (playAgain == 'y' || playAgain == 'Y');

printf("Thank you for playing!\n");
return 0;
}
```