Assignment 4

#include <stdio.h>

#include <stdlib.h>

#include <time.h>

// Function to determine the winner and display results

void determineWinner(char userChoice, char computerChoice) {

printf("You chose: %c\n", userChoice);

printf("Computer chose: %c\n", computerChoice);

if (userChoice == computerChoice) {

printf("It's a tie!\n");

} else if ((userChoice == 'R' && computerChoice == 'S') ||

(userChoice == 'P' && computerChoice == 'R') ||

(userChoice == 'S' && computerChoice == 'P')) {

printf("You win!\n");

} else {

printf("Computer wins!\n");

}

}

// Function to generate the computer's choice

char getComputerChoice() {

int randomNumber = rand() % 101; // Generate random number between 0 and 100

if (randomNumber <= 33) {

return 'R'; // Rock

} else if (randomNumber <= 66) {

return 'P'; // Paper

} else {

return 'S'; // Scissors

}

}

int main() {

char userChoice, computerChoice;

// Initialize random number generator

srand(time(0));

printf("Welcome to Rock-Paper-Scissors!\n");

printf("Enter your choice (R for Rock, P for Paper, S for Scissors): ");

scanf(" %c", &userChoice);

// Convert lowercase input to uppercase

if (userChoice >= 'a' && userChoice <= 'z') {

userChoice -= 32;

}

// Validate user input

if (userChoice != 'R' && userChoice != 'P' && userChoice != 'S') {

printf("Invalid input. Please enter R, P, or S.\n");

return 1;

}

computerChoice = getComputerChoice();

determineWinner(userChoice, computerChoice);

return 0;

}

Output:

