Experiment 6

Write and implement a shell script that uses a switch case structure to display a menu to the user and perform different tasks based on the user's choice.

Algorithm

1. Start the Program:

- Display a welcome message for the Rock-Paper-Scissors game.

2. Display the Menu:

- Show the user two options:
  - ✓ Play Game
  - ✓ Quit

3. Get User Input for Menu Choice:

- Read the user's input and check if it is:
  - ✓ **Choice 1**: Call the *play_game* function to start the Rock-Paper-Scissors game.
  - ✓ **Choice 2**: Display a "Goodbye!" message and exit the program.
  - ✓ **Invalid Choice**: Display an "Invalid option" message and return to the menu.

4. Rock-Paper-Scissors Game (*play_game function*):

- **Initialize Choices**:
  - Create an array with the choices: "Rock", "Paper", "Scissors".
- **Computer Choice**:
  - Randomly select one choice from the array for the computer.
- **Prompt User for Choice:**
  - Ask the user to choose one of the options: Rock (1), Paper (2), or Scissors (3).
- **Get User Input:**
  - Read the user's choice and validate it using a case statement:
    - ✓ 1 (Rock): Set *user_pick* to "Rock".
    - ✓ 2 (Paper): Set *user_pick* to "Paper".
    - ✓ 3 (Scissors): Set *user_pick* to "Scissors".
    - ✓ Invalid Choice: Display an "Invalid choice" message and return to the menu.
- **Display Choices:**
  - Show both the user's and the computer's choices.

5. Determine the Winner:

- If both the user's choice (*user_pick*) and the computer's choice (*computer_choice*) are the same:
  - Display "It's a tie!".
- If the user picks "Rock" and the computer picks "Scissors":
  - Display "You win!".
- If the user picks "Paper" and the computer picks "Rock":
  - Display "You win!".
- If the user picks "Scissors" and the computer picks "Paper":
  - Display "You win!".
- Otherwise:
  - Display "Computer wins!".

6. Repeat the Menu:

- After the game ends, return to the menu to allow the user to play again or quit.

7. End Program:

- The program will continue running in a loop until the user chooses to quit by selecting option 2.

Shell Script

```bash
#!/bin/bash
# Function to play Rock-Paper-Scissors
play_game() {
    choices=("Rock" "Paper" "Scissors")
    computer_choice=${choices[$((RANDOM % 3))]}

    echo "Choose one: (1) Rock (2) Paper (3) Scissors"
    read -p "Your choice: " user_choice

    case $user_choice in
        1)
            user_pick="Rock"
            ;;
        2)
            user_pick="Paper"
            ;;
        3)
            user_pick="Scissors"
            ;;
        *)
            echo "Invalid choice. Please try again."
            return
            ;;
    esac

    echo "You chose: $user_pick"
    echo "Computer chose: $computer_choice"
```

```bash
    # Determine the winner
    if [ "$user_pick" == "$computer_choice" ]; then
        echo "It's a tie!"



    elif [ "$user_pick" == "Rock" ] && [ "$computer_choice" == "Scissors" ]; then
        echo "You win!"
    elif [ "$user_pick" == "Paper" ] && [ "$computer_choice" == "Rock" ]; then
        echo "You win!"
    elif [ "$user_pick" == "Scissors" ] && [ "$computer_choice" == "Paper" ]; then
        echo "You win!"
    else
        echo "Computer wins!"
    fi

}
```

```bash
# Menu function
menu() {
    echo "Welcome to the Rock-Paper-Scissors Game!"
    echo "1) Play Game"
    echo "2) Quit"

    read -p "Please enter your choice: " choice

    if [ "$choice" -eq 1 ]; then
        play_game
    elif [ "$choice" -eq 2 ]; then
        echo "Goodbye!"
        exit 0
    else
        echo "Invalid option, please try again."
    fi
}

# Loop the menu until the user chooses to quit
while true; do
    menu
done
```