VIT Vidyalankar Institute of Technology Accredited A+ by NAAC	**DEPARTMENT OF COMPUTER ENGINEERING**

Mini Project Report

Semester	S.E. Semester III – Computer Engineering
Subject	Skill Based Lab Course: OOP with Java (CSL304)
Subject Professor In-charge	Prof. Swapnil S. Sonawane
Assisting Teachers	Prof. Swapnil S. Sonawane

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Name of the Project:
 Mini-Game: Coinflip and Rock-Paper-Scissors

Project Description:

Java application for performing a coin toss or playing Rock Paper Scissors

Project Code:

```java
///Java Program for Rock, Paper, Scissors and Coinflip

import java.util.*;
import java.lang.*;


    public class MiniGame {
        public static String generateComputerChoice(Random random) {

            int wordNumber = (random.nextInt(3) + 1);
            String computerChoice;


            if (wordNumber == 1) {
                computerChoice = "rock";
            } else if (wordNumber == 2) {
                computerChoice = "paper";
            } else
            {
```

```java
                computerChoice = "scissors";
            }

            System.out.println("\nThe Computer has already made it's
choice.");
            return computerChoice;

        }


    static String obtainUserChoice(Scanner sc) {
            String userWordChoice;
            System.out.println("Options to choose
from:\n1.Rock\n2.Paper\n3.Scissors\n");
            userWordChoice = sc.nextLine();

            return userWordChoice;

        }


    static String chooseWinner(String computerChoice, String userChoice)
{

            String winner = "No Winner";
            String customMessage = "Both chose same";
            String finalMessage;

            String rockMessage = "The rock destroys the scissor";
            String scissorsMessage = "Scissors cuts paper";
            String paperMessage = "Paper wraps rock";

            //Game logic

            if (computerChoice.equals("rock") &&
userChoice.equalsIgnoreCase("scissors")) {
                    winner = "Computer";
                    customMessage = rockMessage;
            } else if (userChoice.equalsIgnoreCase("rock") &&
computerChoice.equals("scissors")) {
                    winner = "User";
                    customMessage = rockMessage;
            }

            if (computerChoice.equals("scissors") &&
userChoice.equalsIgnoreCase("paper")) {
                    winner = "Computer";
                    customMessage = scissorsMessage;
            } else if (userChoice.equalsIgnoreCase("scissors") &&
computerChoice.equals("paper")) {
                    winner = "User";
                    customMessage = scissorsMessage;
            }

            if (computerChoice.equals("paper") &&
userChoice.equalsIgnoreCase("rock")) {
                    winner = "Computer";
                    customMessage = scissorsMessage;
            } else if (userChoice.equalsIgnoreCase("paper") &&
```

```java
computerChoice.equals("rock")) {
                winner = "User";
                customMessage = paperMessage;
            }

            //Winner Logic for the game ends
            finalMessage = winner + " won ( " + customMessage + " )";

            return finalMessage;

        }

        public static void main(String [] args)
        {

            Random random = new Random();
            Scanner sc = new Scanner(System.in);
            String computerChoice;
            String userChoice;
            String winner;

            System.out.println("Enter 1 to flip a coin. Enter 2 for playing
Rock-Paper-Scissors.\n");
            int ch = sc.nextInt();

            switch(ch)
            {
                case 1: coinflip c1 = new coinflip();
                        c1.toss();
                        break;

                case 2: obtainUserChoice(sc);
                        computerChoice = generateComputerChoice(random);
                        userChoice = obtainUserChoice(sc);
                        winner = chooseWinner(computerChoice, userChoice );

                        System.out.println( "\nYou chose : " + userChoice +
"\nComputer chose : " +computerChoice );
                        System.out.println(winner);
                        break;

                default:System.out.println("Invalid input");
                        break;

            }
        }
    }
```
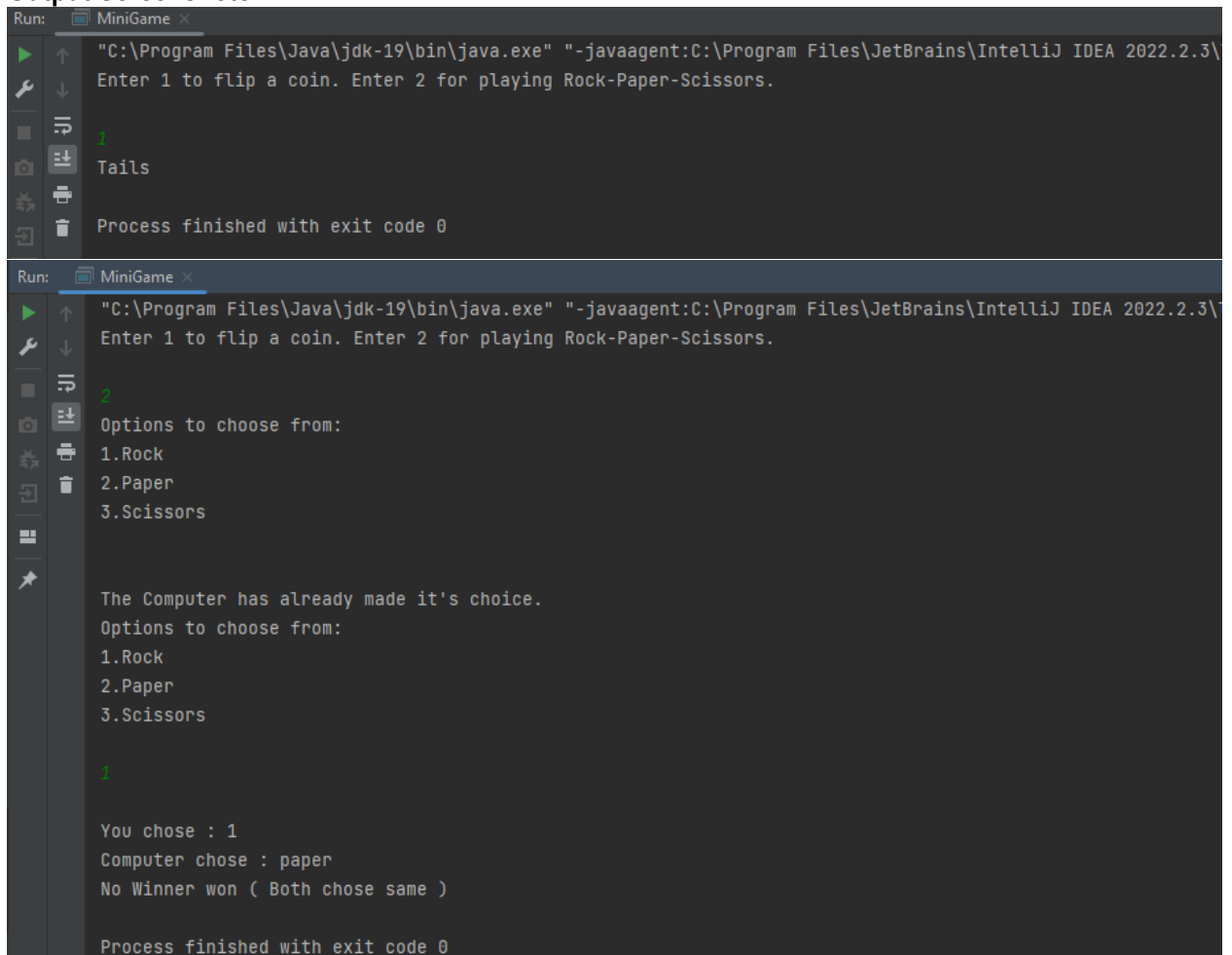
Coinflip Class

```java
public class coinflip

{
    public void toss()
    {
        double rand = Math.random();
```

```java
        if(rand <= 0.5)
        {
            System.out.println("Heads");
        }
        else
        {
            System.out.println("Tails");
        }
    }
}
```

Output Screenshots:


```
Run:    MiniGame ×
    "C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.3\
    Enter 1 to flip a coin. Enter 2 for playing Rock-Paper-Scissors.

    1
    Tails

    Process finished with exit code 0
```



```
Run:    MiniGame ×
    "C:\Program Files\Java\jdk-19\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2022.2.3\
    Enter 1 to flip a coin. Enter 2 for playing Rock-Paper-Scissors.

    2
    Options to choose from:
    1.Rock
    2.Paper
    3.Scissors


    The Computer has already made it's choice.
    Options to choose from:
    1.Rock
    2.Paper
    3.Scissors

    1

    You chose : 1
    Computer chose : paper
    No Winner won ( Both chose same )

    Process finished with exit code 0
```