Maximum points: 10 Due: 1:00 pm on March 3th, 2025

# Assignment 2: Rock-Paper-Scissors

**Game Description:**

The popular rock-paper-scissors game is usually played between two people in which each player simultaneously chooses either a rock or a paper or scissors (usually with an outstretched hand). The rule of the game is simple: rock crushes scissors, scissors cut paper, and paper wraps rock. If both the players choose the same object, then it ends in a tie. (See this link for more details.)

**Problem Description**:

You have to play the rock-paper-scissors game against the computer for 1000 times. You receive the following rewards each time you play the game:

- You get $5 if you win
- You get $2 if there is a tie
- You get $-1 if you lose

The computer randomly chooses rock, paper, or scissors in each game. Rather than deciding what to play (rock, paper or scissors) for each individual game, you decide to use the following strategy:

- Play (i) scissors – (ii) rock – (iii) paper sequentially and repeatedly, over and over

Example:

- Round 1: Play scissors
- Round 2: Play rock
- Round 3: Play paper
- Round 4: Play scissors …

Write a program to play the rock-paper-scissors game against the computer for 1000 times using the above strategy. You are required to calculate the total reward that you accumulate after playing the game 1000 times.

**Hint:**

Use loops to simulate the game 1000 times. In each iteration, generate a random integer 1, 2, or 3 representing rock, paper, and scissors, respectively and use that number to know what computer has played (i.e. 1 is for rock, 2 is for paper, 3 is for scissors). Using your strategy described above, figure out whether you win, lose or tie the game in each iteration. Maintain a variable to keep track of the amount that you have won and keep updating that amount in each iteration depending on the result of the game. You can generate a random integer 1, 2, or 3 as follows:

```
int randomNum = 1 + (int)(3*Math.random( ));
```

**Deliverables**:

Your .java file including:

- The total reward that you receive (after playing the game 1000 times) as a comment on top of your Java code.

## Grading:

1. Properly define the loop (2 points)
2. Correctly define sequential (i) scissors-(ii) rock-(iii) paper strategy for yourself (1.5 points)
3. Correctly define how computer randomly chooses rock, paper, or scissors (1.5 points)
4. Calculate how many points you gain for each outcome (4 points)
5. Proper display of output and comments where necessary (0.5 point)
6. Providing the top comment (0.5 point)

**Important Note:**

Do not use any unnecessary or advanced functions that are not needed or covered in the class. It mostly complicates your code with no benefit.