**CSC 243**

*Introduction to Object Oriented Programming*

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Fall2014

###### *Lab7*

**Part 1: Rock, Paper, Scissors**

Program *Rock.java* contains a skeleton for the game Rock, Paper, Scissors. Open it and save it to your directory. Add statements to the program as indicated by the comments so that the program asks the user to enter a play, generates a random play for the computer, compares them and announces the winner (and why). For example, one run of your program might look like this:

Enter your play: R, P, or S

r

Computer play is S

Rock crushes scissors, you win!

Note that the user should be able to enter either upper or lower case r, p, and s. The user's play is stored as a string to make it easy to convert whatever is entered to upper case. Use a switch statement to convert the randomly generated integer for the computer's play to a string.

// \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

// Rock.java

//

// Play Rock, Paper, Scissors with the user

//

// \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

import java.util.Scanner;

import java.util.Random;

public class Rock

{

 public static void main(String[] args)

 {

 String personPlay; //User's play -- "R", "P", or "S"

 String computerPlay; //Computer's play -- "R", "P", or "S"

 int computerInt; //Randomly generated number used to determine

 //computer's play

 Scanner scan = new Scanner(System.in);

 Random generator = new Random();

 //Get player's play -- note that this is stored as a string

 //Make player's play uppercase for ease of comparison

 //Generate computer's play (0,1,2)

 //Translate computer's randomly generated play to string

 switch (computerInt)

{

 }

 //Print computer's play

 //See who won. Use nested ifs instead of &&.

 if (personPlay.equals(computerPlay))

 System.out.println("It's a tie!");

 else if (personPlay.equals("R"))

 if (computerPlay.equals("S"))

 System.out.println("Rock crushes scissors. You win!!");

 else

 //... Fill in rest of code

 }

}

**Part 2: Counting and Looping**

1. Write a program called *LoveCS.java* that prints "I love Computer Science!!" 10 times.

2. You will need to declare a variable to store the user's response and use that variable to control the loop. (Remember that all caps is used only for constants!)

3. Number each line in the output, and add a message at the end of the loop that says how many times the message was printed. So if the user enters 3, your program should print this:

 1 I love Computer Science!!

 2 I love Computer Science!!

 3 I love Computer Science!!

 Printed this message 3 times.

4. If the message is printed N times, compute and print the sum of the numbers from 1 to N. So for the example above, the last line would now read:

Printed this message 3 times. The sum of the numbers from 1 to 3 is 6.

Note that you will need to add a variable to hold the sum.