# INLS 560 - Assignment 3:
# Rock, Paper, Scissors

**Date Assigned: Fri. Sept 5, 2014**

**Completion Date: Fri. Sept 12, 2014 (midnight)**

## Software issues:

If you feel there are mistakes in this assignment, check the web page and Sakai for corrections, and

report them to us if they have not been made.

## Description

You will write a program that allows the user to play the game Rock, Paper, Scissors against the

computer. This will be done using a random number generator, simple while loop, and branching

statements.

## Background

Rock, Paper, Scissors (also known by several other names,

see http://en.wikipedia.org/wiki/Rock_paper_scissors) is an extremely popular hand game most often

played by children. Often, it is used as a method of selection similar to flipping a coin or throwing dice to

randomly select a person for some purpose.

## Requirements

This program requires you to use:

- The input function to prompt the user.
- The print function to output the results.
- At least one branching statement
- At least one loop (while loop)
- Boolean logic

## Rules of the Game

The objective of Rock, Paper, Scissors is to defeat your opponent by selecting a weapon that defeats

their choice under the following rules:

- Rock smashes (or blunts) Scissors, so Rock wins.
- Scissors cut Paper, so Scissors win.
- Paper covers Rock, so Paper wins.
- If players choose the same weapon, neither win or the game is played again.

## Assignment Specification

Write a Python program that includes the following functions:

- get_user_input()
    - Asks the user for rock, paper, and scissors.
        - The user inputs R or r for rock, P or p for paper, S or s for scissors, and Q or q for quit.
    - Returns the user input (R or r, P or p, S or s, or Q or s).
- choose_weapon()
    - Randomly chooses rock (R), paper (P), or scissors (S).
    - Returns the randomly chosen weapon.
- determine_winner(user_weapon, computer_weapon)
    - Compares the user_weapon to the computer_weapon and determines the winner
    - Returns the winner
- main()
    - Calls each function above
        - get_user_input()
        - choose_weapon()
        - determine_winner(user_weapon, computer_weapon)
    - Prints the weapon chosen by the user and the weapon chosen by the computer
    - Prints the outcome of the game
    - Uses a while loop to play multiple rounds of the game.

**You must use if-else and while statements in your code. Be sure to comment your code.**

## Sample Interactions

Some examples of possible dialog with the user might be (user input is in italics and bold):

```
Let's play Rock, Paper, Scissors!
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: P
You have chosen Paper and the computer chose Scissors. The computer has won
this round.
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: S
You have chosen Scissors and the computer chose Scissors. It's a tie!
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: R
You have chosen Rock and the computer chose Rock. It's a tie!
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: R
You have chosen Rock and the computer chose Rock. It's a tie!
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: R
You have chosen Rock and the computer chose Paper. The computer has won this
round.
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: P
You have chosen Paper and the computer chose Rock. You win!
Please select your weapon: (R) for rock, (P) for paper, (S) for scissors, or
(Q) to quit: Q
I'm sorry to see you go! You've proven to be a worthy adversary.
```

Your code does not need to follow this exact script, but all the mentioned functionality should work as shown.

Use the Pycharm Community Edition IDE to develop and execute the code.

## Grading

Programs will be graded based on whether they display the correct output, the correct logic, and style.

In this assignment style means, make variable names meaningful. Do not create one letter variable names or variable names that do not have anything to with the assignment. The program must not only print the correct values, but the code must actually perform the correct operations.

- You must randomly choose a weapon for the computer to use in each round.
- You must prompt the user to enter their weapon of choice.
- You must properly determine if the user has won, tied, or lost the round and output it.
- You must write a while loop to play multiple rounds of the game.
- You must comment your code appropriately and your code must be neatly and clearly formatted and include proper use of 'white space'.

## Getting Help

If you have trouble, please post a question on Piazza before contacting me. Before posing a question, please check if this question has been asked before. This will reduce post clutter and reduce our burden. Repeat questions will be ignored by the instructors.

Piazza allows anyone to respond. So if you see a question that you think you can respond to, please do so, as that will reduce our burden and help you "teach" your fellow students.

Good luck!

## Extra Credit (5 points)

You may only attempt the extra credit after your program is working correctly as described above.

To earn extra credit on this assignment, your program should remember the game history (whether the user wins, the computer wins, or the round is tied). At the end of the game (when the user chooses to Quit), your program should display the following:

- The number of rounds the computer has won.
- The number of rounds the user has won.
- The number of rounds that ended in a tie.
- The number of times the user selected each weapon (Rock, Paper, Scissors).