

# Comments, Random Numbers, and Rock-Paper-Scissors

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## 1 Comments

Comments are lines in your code that don't do anything. They allow you to leave notes for yourself about what your code does. In Python, any line that starts with a `#` is a comment, as is anything appearing after a `#` on a line. Here is an example:

```
x = 0
# This is a comment
print x + 1 # I can also put a comment here
```

I would recommend putting comments at the top of your file to list important information, such as author, date, and the purpose of the program.

```
# Author: Qiyam Tung
# Date: Jan 19, 2011
# This program doesn't do much yet.
print "Beginning program..."
```

You can also comment code that you may want to use later.

```
x = 0
# print "Not sure if I want this line in the program yet"
print x
```

Code that has been commented well is much easier to read than code without comments. Often, you will write some code then come back a few days later and have no idea how your code works. Comments are the solution to this problem! A good rule of thumb is that you should write as many lines of comments as you write lines of code. Let me repeat:

Your programs should always contain as many lines of comments as lines of code!

## 2 Rock-Paper-Scissors

### 2.1 Programming Assignment

Write a Python program that will play rock-paper-scissors. Your program should:

1. Ask the user to choose either rock, paper, or scissors.
2. Randomly choose either rock, paper, or scissors for itself (more on how to do this in a moment).
3. Print out both what the user chose and what the computer chose.
4. Determine a winner for the game, and print that as well.

Remember, rock beats scissors, scissors beats paper, and paper beats rock. Below is an example of how my version of rock-paper-scissors looks when I run it. You're doesn't need to be identical, but it should be similar.

```
Welcome to Rock, Paper, Scissors!
Please select either Rock, Paper, or Scissors:  rock
You selected rock
I selected Scissors.
You win!
```

### 2.2 Random Numbers

The computer's "strategy" in rock-paper-scissors should be to randomly chose either rock, paper, or scissors each time. The easiest way to do this is to use a random number generator. Here is an example of how to do this:

```
# Sarah Mann
# January 3, 2012
# This program is an example of randomly generating a number

# First, I have to import the "random" library. This adds a bunch of extra commands
# to python that generate random numbers
import random

# Now I will randomly choose 0, 1, or 2 and store it in the variable my RandNum.
```

```
# random.randrange(a, b) randomly choses an integer that is greater than or equal to a
# and less than b. In the example below, I will get either 0,1, or 2.
myRandNum = random.randrange(0,3)

# print the result!
print myRandNum
```

In your program, if the random number generator gives you a 0, you should treat it like the computer chose rock. A 1 would mean paper, and a 2 would mean scissors.