The goal of this second Python programming assignment is to get more practice with Python and the JES environment, as well as to enhance the fundamental concepts of programming with Python in general. You will write your own code for the first time. Here’s a little background. In JES, there are a number of predefined functions for getting input from the user. The requestNumber function prompts the user with a string message and then allows the user to enter a floating-point number from the keyboard into the program. In most cases, the result is assigned to a variable. For example, a typical usage of this function is: \texttt{var = requestNumber("message")}, where you choose both variable and message.

In the JES environment, type in the following program code \textit{exactly as you see it here, with three exceptions}, and save the program as \texttt{Lab2.py} in your Python folder. Here are the exceptions. (1) Where you see my name in the comment code, replace it with \textit{your own name}. (2) In the lines between the two sets of triple-double quotes, insert your answers from the questions at the end of this assignment. (3) In place of the section of \texttt{GetANumber} marked with | symbols, write new code: Use the requestNumber function to prompt the user with the message string that was passed in as the parameter to \texttt{GetANumber}, but have the function check the sign of the entered number and continue to ask until the user enters a number that is greater than or equal to zero. That is, it refuses to accept any negative numbers. Return that result from the \texttt{GetANumber} function.

As always, be very careful about indentation and capitalization.

```python
# William T. Verts - Lab #2

Answers = ""

""

def GetANumber (PromptMessage):
    | | | |

def Process (N):
    print "The Number is ", N
    print "The Square is ", N*N
    print "The Square root is ", math.sqrt(N)
    return

def Run():
    MyName = requestString("Enter your name")
    N = GetANumber("Please enter a positive number, " + MyName)
    Process(N)
    return
```
In JES click the Load Program button. At the >>> prompt, type `Run()` with the parentheses and press `Enter`. The program should run. Fix any syntax errors or other mistakes.

When the program runs correctly, it will ask for your name, then for a number. If you type in a number incorrectly, it will display an error and ask again until you enter a correctly formed floating point number. Your code will refuse negative numbers, and only return when one has been entered that is greater than or equal to zero. Once such a number has been correctly entered, the program will print it, its square, and its square root. Try this several times, with different numbers.

Next, run just the `GetANumber` and `Process` functions by themselves, with constants as the actual parameters, by typing `GetANumber("Bill Verts")` or `GetANumber("Frog")` or `Process(4)` or `Process(37.6+89.2)`, for example. Try several different sets of parameters, including illegal situations such as `GetANumber()` or `Process("Frog")` or `Process(-9)`. Make certain that you understand what is happening in each circumstance.

Finally, answer the following questions. Please type them in to your program between the two sets of triple-double quotes. (Your program should still run.)

1. What is the meaning and purpose of the `+` sign in the call to `GetANumber`?
2. Is the variable `N` in `Run` the same as the variable `N` in `Process`? (The question is not “Do they have the same value?”, but “Are they the same memory locations?”)
3. In `Run`, could statements have been combined as in `Process(GetANumber("..."))`?
4. How does your answer to #3 relate to that of #2? Explain completely.
5. Why don’t functions `Process` and `Run` return a value, but function `GetANumber` does?

When you are finished and everything runs correctly, launch a Web browser and point it at the class site. Find the link to “Form to submit lab assignments” and open it up. Follow the directions to submit your code, and questions, to the TAs for grading.