ISE 5123: Software Tools-Dec Support
Assignment #3
Due March 04, 9:00 am

There are 3 problems in this assignment. Please submit a single Python file including the full working code of all problems with the logical order.

Problem 1

A group of statisticians at a local college has asked you to create a set of functions that compute the **median** and **mode** of a set of numbers. Also include a function named **mean**, which computes the average of a set of numbers, and a function named **standardDeviation** that returns the standard deviation of those numbers. Each function should expect a list of numbers as an argument and return a single number. Each function should return 0 if the list is empty. Include a **main** function that tests the four statistical functions with a given list.
HINT: you can import stats module and use built-in functions.

Problem 2

Write the Fibonacci sequence as a linear (non-recursive) algorithm. Let the function take in the desired term in the Fibonacci sequence, and return the appropriate number. For example, the sequence starts as 1, 1, 2, 3, 5, 8, 13, …, so if the number 4 was passed as the argument, 3 would be returned as it is the 4th term in the sequence.

Problem 3

Python's **pow** function returns the result of raising a number to a given power. Define a function **expo** that performs this task. The first argument of this function is the number, and the second argument is the exponent (non-negative numbers only). You may use either a loop or a recursive function in your implementation.
CAUTION: do not use Python's ****** operator or **pow** function in this exercise!