# Lab 5A –Void Functions

**Test Score Average and Letter Grade**

Write an IPO diagram and Python program that has two functions, main and determine\_grade.

main – Should accept input of five numeric grades from the user USING A LOOP. It should then calculate the average numeric grade. The numeric average should be passed to the determine\_grade function.

determine\_grade – should display the letter grade to the user based on the numeric average:

Greater than 90: A

80-89: B

70-79: C

60-69: D

Below 60: F

**Design:**

Design your program logic using pseudocode in the attached IPO Diagram. You should have 2 separate diagrams. One for the main function and one for the determine\_grade function.

**Modularity:** Your program should contain 2 functions: a main function to accept input from the user and calculate average and a second function to display the letter grade.

**Input Validation:** The test scores entered by the user should be in the range 1-100

**Output:** Display both the numeric average (rounded to two decimals) and the letter grade

**Sample Dialog:**

Enter score #1 in range 1-100: 900

Error: Re-enter score #1 in range 1-100: 90

Enter score #2 in range 1-100: 65

Enter score #3 in range 1-100: 98

Enter score #4 in range 1-100: 33

Enter score #5 in range 1-100: 75

Your average is: 72.20 which is a(n) C

**Programming Style Requirements.**

* Comments – Begin your program with a comment that includes: a) your name, b)program status – either “Complete” or describe any incomplete or non-functioning part of your program c)A 1-3 line description of what the program does.
* Function comments – each function should begin with a comment explaining what the function does
* Variable names – use meaningful variable names such as total\_taxes or num\_cookies.
* Function names – use meaningful verb names for functions such as display\_taxes.
* Named constants – Use named constants for all number values that will not be changed in the program such as RECIPE\_SUGAR = 1.5. See section 2.9 on Named Constants

You should have 2 files to turn in:

Your program file: *yourlastname*\_Lab4.py

Your IPO diagram: *yourlastname*\_Lab4\_IPO.docx