

# Lab 7: Calculate Mean, Variance, and Standard Deviation

## Purposes

1. Practice the Input Loop.
2. Practice the four-step problem solving process.
3. Practice algorithm design with relative complex problem.

## Problems

Page 251, problem 17

## Requirement

1. Complete the pre-lab exercises **before** you entering in the lab. Help is available during the tutoring hours and office hours.
2. In the lab time, follow the In-Lab instruction to finish the lab practice. Record the required information as lab report.
3. Demo your lab program for the instructor or the TA. Submit your pre-lab exercise and the lab report.

## Pre-Lab Exercise

1. Analyze the problem and write down the specification of the problem, including the input and output.

What is the problem?	
What is the input information? How many variables needed to represent them? List the name and type for each variable.	
What is the output information? How many variables needed to represent them? List the name and type for each variable.	
What type of DO construct is used? How does the program know if the user has more data to enter?	
What statements are repeated inside the Do loop?	
Are there additional variables needed to solve the problem? List the name and type for each additional variable.	

2. What is the step-by-step procedure to solve this problem? Draw a flow chart to represent this procedure.

## In-Lab Instruction

1. Create a new folder **lab7** in **CIS261**, use this folder to save files for this lab.
2. Implement the program coding.
3. Compile and execute the modified program, test it with two groups of input data, write down the input data and the output results in the table below.

	Test1 (10 numbers)	Test2 (8 numbers)
Input		
Output		