ENGR 1181 | MATLAB 12: While Loops

In-Class Guide

Learning Objectives
1. Explain the proper application of while loops.
2. Use while loops to reduce errors in calculations.

Textbook Reading
Chapter 6.4.2

Topics
This lecture contains the following topics:
1. While Loops – General
2. While Loops Using Inputs
3. While Loops for Reducing Error

Outline
Below is an outline of the topics and the order in which they should be covered:

1. While Loops – General (Instructor’s In-class Activity)
   a. While loops must have a conditional expression, and the conditional expression must have at least one variable.
   b. Conditional variables must be “initialized” before the loop.
   c. The conditional variable must advance with each pass (otherwise the loop will continue indefinitely).
   d. ‘Ctrl + C’ will terminate execution of an infinite loop.
   e. While loops must have an end.

2. While Loops Using Inputs (Instructor’s In-class Activity)
   a. While loops may also ask for user input.
   b. Often, the while loop will run until the user specifies that the loop should stop.

3. While Loops for Reducing Error (Instructor’s In-class Activity)
   a. While loops can be used to run a calculation for an undetermined number of times to approximate a specified value.
   b. A while loop may run until the error between the estimated value and the actual value is less than a predetermined amount.

4. Students will complete Part 1 of the assignment to turn in by the end of class. Once finished, students may start on Part 2 due by the next class. Students will submit Part 1 of the assignment to the Carmen dropbox as a PDF.