Module 3: Program Design, Functions and Data Utilities

M3 Exercise

Instructions

1. ~~Do exercise 3.5 on page 99 of the textbook.~~
   - ~~For the first part, submit an m-file named: **quad_solve_real_LastName.m**~~
   - ~~For the second part (which only requires a tiny adjustment to the program of the first part) submit an m-file named: **quad_solve_complex_LastName.m**~~
2. Create an m-file that plots the Bessel function of the first kind (one plot for order 1; one plot for order 2; one plot for order 3). Let z span from -20 to +20 in increments of 0.1. Make sure to create a title for each plot (enter: "help title" if you've forgotten how to do this). Note: The 'figure' command can be used to create a new figure window without losing existing figure windows.
   - Name the file **bessel_plot_LastName.m**.
3. Following the introduction provided by the screencast, create an m-file that loads in the **ASCII battery data file** and computes an estimate of the battery's internal resistance by averaging the values obtained from each measurement. Try to vectorize your code as much as possible.
   - Name the file **battery_resistance_LastName.m**.
   - Please use the **Homework template (Word)** when submitting your work.

Note: Although a solution to this problem appears to be listed on pages 96-97, that implementation is slightly different than the structure plan listed in Fig. 3.6.

For this exercise, you should submit the following files in the M3 Exercise submission area:

1. quad_solve_real_LastName.m, quad_solve_complex_LastName.m.
2. bessel_plot_LastName.m.
3. battery_resistance_LastName.m

Note: Substitute your last name for LastName in all submitted files.

Please refer to the Course Schedule for due date.