

Laboratory 3: Handle Graphics and Structures
BE 205, Winter '05-'06, Drs. Tritt & Richerson

On the course website is a program, Lab3.m, which creates three graphs with differing object properties. In this lab, we will determine what those properties are and then change them. Run the Lab3.m file and print the plots.

Part 1: Using the get function, determine what object properties each of the figures generated by Lab3.m has.

Part 2: Using the set function change the object properties seen in Figure 1 to a solid blue line of width 3. Print/Save the plot.

Using the set function, change the object properties seen in Figure 2 to a dotted green line of width 3 with round markers that have both an edge and fill color of red. Save/Print the plot.

Using the GUI plot interface, change the object properties seen in Figure 3 to a dashed red line of width 2 and star blue markers of size 3. Save/Print the plot.

Part 3: Create a structure that contains the following data.

Name	Major	Exam 1	Exam 2	Exam 3	Final Exam
Mary	BE	88	89	77	88
Bill	BE	66	87	99	66
Bob	BE	55	88	85	80
Jill	BE	20	44	55	62

Write a program that uses one or more *for* loops to calculate the class average of exam of the 4 exams and displays the results to the user the averages from exam 1 and the final in a single message box. Ensure that all averages are in percentages.

Part 4: In an input dialog box or a menu, ask the user to select the name of one of the students. Extract all the information or that student and display it in a message box to the user.

Laboratory requirements: Part 1 and 2: You may either add to the Lab3.m file to determine and change the object properties or write your own m-file. Save the plots after the changes have been made and import them into a word document. In a brief memo, describe what the initial object handles were, how they were changed, and what the final graph looks like. Please also e-mail your code to your instructor. Parts 3 and 4: Information on this part does not have to go into the memo, but the final m-file has to be sent to your instructor via e-mail. Your memo and code is due to your professor before the beginning of the next laboratory period. Please remember to comment your code properly so that I can understand how you made the required changes. The grading rubric is attached.

Grading Rubric

The below is the scoring that will be used for Laboratory 3. The scale is a 5 point scale with 5 being superior, 4 being satisfactory, 3 being average, 2 being unsatisfactory and 1 being not undertaken.

Program Requirements

Correct argument to get settings from Figure 1	1	2	3	4	5
Correct argument to get settings from Figure 2	1	2	3	4	5
Correct argument to get settings from Figure 3	1	2	3	4	5
Correct argument to reset Figure 1 properties	1	2	3	4	5
Correct argument to reset Figure 2 properties	1	2	3	4	5
Correct argument to reset Figure 3 properties	1	2	3	4	5
Memo describes original figure properties	1	2	3	4	5
Memo describes how properties were altered	1	2	3	4	5
Memo shows final/altered plots	1	2	3	4	5
Structure created properly and loaded with data	1	2	3	4	5
Loop (s) to extract exam data and average	1	2	3	4	5
Message box to show user average exam percentages	1	2	3	4	5
Dialog or Menu to allow user to choose student	1	2	3	4	5
Extraction of all student data	1	2	3	4	5
Output of all student data using message box	1	2	3	4	5

Other considerations

Was a header to the file given with student name, course, and brief description of the problem to be solved?	1	2	3	4	5
Was a description of all variables given in the header?	1	2	3	4	5
Were proper variable names used?	1	2	3	4	5
Was the code commented properly?	1	2	3	4	5

Total possible points – 100

Points Earned -

Comments: