

Introduction To Computer Programming

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LOGO Program L3

Program L3 Coordinate House (50 points)

Here is the overview of this program. Write a program using procedures to draw a picture of a house together with a garage, yard, etc. You will need to add a lot of detail to this house as described below. Ninety percent (90%) of the commands in your program need to be from Chapter 13 (Use SETX, SETY, and SETXY instead of FD or BK, SETH instead of RT or LT, SETH TOWARDS, you can use FD with the DISTANCE command, etc.).

- 1) If you have been working on any procedures prior to beginning this program, save them. To make sure that we are starting with a clean workspace, type ER ALL. This erases everything from the workspace.
- 2) Type CT to clear all of the text from the “Listener Window” to make it easier to create your program.
- 3) Load program LastNameFirstNameL1.lgo into the workspace.
- 4) Edit the procedure called COMMENTS, by typing TO COMMENTS. Inside this procedure, **update your comments to include the new program number, name, starting and due dates, and program description.** Remember that comments begin with a ; (semicolon). Your comments should still include all of the astericks and blank lines.
- 5) Edit the procedure called DISPLAY_MY_OUTPUT, by typing TO DISPLAY_MY_OUTPUT. The first line of code should be CT to clear the text in the “Listener Window”. Inside this procedure, **update your PRINT statements to include the new program number, name, starting and due dates.**
- 6) In the MAIN procedure, after the call to COMMENTS and DISPLAY_MY_OUTPUT include the following command: **SETWINSIZE “graphics [800 400]** This way, we will all have the same size graphics window.
- 7) Save the **workspace** for this program in your “S:” directory using the filename: LastNameFirstNameL3.lgo.
- 8) Now for the fun part. Create a separate procedure for each part of the house. For instance, you will need a procedure to draw the outline of the house. You will also need separate procedures for each part of the house. For example, you will need procedures for each of the following: the door, window, chimney, fence, sidewalk, garage, driveway, etc. In each of these procedures, include the commands necessary to move to the position to draw each of the house’s features as well as the commands to draw that feature. Include the DOT command to place a “dot” somewhere in your picture. Also, use as many of the commands from Chapter 13 as possible in

your drawing. **Do not use more than 2 commands on any line in any of your procedures.**

- 9) As you finish each of these procedures, in the order that you create them, add the “calls” to these procedures from the “MAIN” procedure by typing TO MAIN. Edit the MAIN procedure to add the names of the procedures necessary to draw the house. Redefine the MAIN procedure. Then type DRAW MAIN to see if your picture is correctly programmed.
- 10) For some guidelines as to what to include in your drawing, use color in your drawing making sure that you are using the color name and not the color number. If you use any custom colors based upon RGB ratios, you must include a comment after the color to tell me what color it is. You must also FILL in at least one closed figure. To fill for this program: 1) draw a closed shape, 2) PU, 3) SETXY to a point inside the shape, 4) PD, and 5) FILL. Also include some “graphics text” in the graphics window using the TURTLETEXT or TT command. This text should say your name somewhere in the graphics window, so that we know that this is your house. You may change the turtle size, but do NOT change the turtle shape, and DO NOT include the turtle in your drawing. **So your last command in your last procedure should be HT to hide the turtle.**
- 11) Your procedures may call other shape procedures that you have created. For instance, if you choose to use a round shape somewhere in your drawing, you may call a CIRCLE or ARC procedure. If you do this, make sure that your CIRCLE procedure is included in your WORKSPACE.
- 12) **Save your work frequently so that you don’t lose any of your hard work. Save different versions of your program using v2, v3, etc. so that each day you have a different version of your file.** This is the safest way to ensure that we don’t lose your work.
- 13) Your program should only include procedures that are used to create your drawing. For instance, you might not use a PENTASTAR to draw the house, so you will lose points from your program if this procedure is included in your workspace. Therefore, do not include any unnecessary procedures, and you must include all procedures used!
- 14) Remember, that you can type ER followed by the name of a procedure to erase it from your workspace. If you do this, save your program again so that this procedure is not included in your file either.
- 15) When I grade your program, I will type ER ALL to clear my workspace, then I will load your file into my workspace and type DRAW MAIN. I should be able to see your drawing exactly as you intended it to look. This would be a good way for you to test your program as you are writing it to make sure that you are writing your program correctly.
- 16) If you use variables in any of your procedures, be sure to begin the variable name with a colon (:), and choose a variable name that describes the purpose of that variable in your program.
- 17) When you are finished, make sure that everything is saved in a file named LastNameFirstNameL3.lgo. Also, type MAIN, to draw the picture in your graphics window, and

Save... your Image As... your LastNameFirstNameL3.bmp. Yes I want the bitmap "BMP" file.

When you are finished with your program, have tested it thoroughly to make sure that everything is correct, and are sure that you don't need to make any changes, then **copy your program, LastNameFirstNameL3.lgo, and your picture file, LastNameFirstNameL3.bmp** into the "W" network mapping, the LOGO Folder, and the Program L3 folder. This means that your program is ready to be graded.