

Introduction To Computer Programming

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LOGO Program L5

Program L5 Animation2 (50 points)

Here is the overview of this program. Use a procedure to draw one background scene. You can use any of the commands that we have learned to date. It can be a nature scene, city scene, or any combination of the two. Instead of having the MAIN procedure call the procedure that draws the scene, use a procedure named SCENE1 to draw the background scene. We will still have a MAIN procedure, but we will use that to “start” the movie. We will change the shape of the turtle and move multiple turtles across the background scene, to create a mini-movie. The details will be described below.

- 1) In your “S:” directory, you will need to create a new folder for this project. Name the folder: **LastNameFirstNameL5, and be careful to save all of your work to this folder.**
- 2) 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.
- 3) Type CT to clear all of the text from the “Listener Window” to make it easier to create your program.
- 4) Load program LastNameFirstNameL1.lgo into the workspace.
- 5) 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.
- 6) 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.**
- 7) 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.
- 8) Save the **workspace** for this program in your “S:” directory using the filename: LastNameFirstNameL5.lgo.
- 9) Now for the fun part. Create a separate procedure for each part of the background scene. For instance, if you draw a mountain scene, you will need a procedure to draw the mountain, the sky, trees, etc. If the mountain has alot of detail, you should also have separate procedures for each

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

- 10) As you finish each of these procedures, in the order that you create them, add the “calls” to these procedures from the “SCENE1” procedure by typing TO SCENE1. Edit the SCENE1 procedure to add the names of the procedures necessary to draw the scene. Redefine the SCENE1 procedure. Then type DRAW SCENE1 to see if your picture is correctly programmed.
- 11) 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.
- 12) 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.
- 13) **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.
- 14) 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!
- 15) 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.
- 16) When your background scene is finished, type DRAW SCENE1 and then HT to hide the turtle if you haven't done this already. The picture should fill the Graphics window. Save SCENE1 as a bitmap file with the filename **YourLastNameYourFirstNameSCENE1.bmp**. (Please replace YourLastNameYourFirstName with the name that your parents gave you.)
- 17) Now it's time to change the turtle's shape. You will have several shapes, one for each of the multiple turtles that you want moving across your background scene.
- 18) **When you edit each turtle's shape DO NOT change the name in the “Turtle Name” Box. Leave the names Turtle.0 and Turtle.1, etc.** It is easier to work with multiple turtles if you don't change the name in the Turtle Name Box. Define the shape by clicking OK. **You still must save each shape by typing SAVESHape “SKIRIGHT for example, in the Listener Window. As you save each shape, be careful! LOGO will probably save this shape on the local hard drive instead of your network folder. It will actually save the shape in the current active directory, so save your “.lgo” file into your “S:” directory first and this will**

become the active directory. Make sure that you manually copy all of these turtle shapes if they don't make it into your network folder (they are bitmap files - .bmp) to your "S:" directory.

19) Create a procedure named ANIMATE1 that "calls" the turtle shapes that you wish to use and moves the "turtles" around the background scene for your mini-movie. You will need to use the command LOADSHAPE "SKIRIGHT (for example) to load the shapes into your workspace.

20) Here is the information that you will need for your MAIN procedure... I will give the details for this later. You can work on everything else and then put all of the "pieces of the puzzle together in the MAIN procedure at the end of your program.

21) 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 animation 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.

22) 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.

23) When you are finished, make sure that everything is saved in the folder named LastNameFirstNameL5 and a file named LastNameFirstNameL5.lgo. You will no doubt have several versions of this file in your program folder. Cut and paste all of the non final versions of this file into another folder. However, we still need all of the bitmap pictures for SCENE1, and all of the new turtle shapes that you created.

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 the folder LastNameFirstNameL5**, into the "W" network mapping, the LOGO Folder, and the Program L5 folder. This means that your program is ready to be graded.