SYSC 2004 Object-0riented Software Development

Lab 1

Lab 1:

Objective
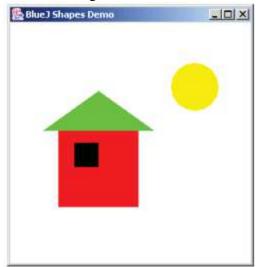
Introduction to BlueJ, Objects, and Methods.

Getting Started

1. Log on to a machine using your SCE account. If you have not used your SCE account yet this term, follow these instructions:

   o Go to: http://sce.carleton.ca/labs/, click on "Activate Your Account" (bottom left, above the Carleton logo), and follow the instructions from any computer with internet access. The first time you use a computer in the SCE labs, please confirm that you have access to the "M" drive, as that is the only location where you may store files. If you are officially registered in the course and you encounter any difficulties, please let me know.

   o Note: You may also use your laptop to do your lab work.

2. Download folders `figures` and `house` from the chapter 1 projects folder of cuLearn (or from your BlueJ disk or the BlueJ text web page). Save the files somewhere on your M: drive or in C:/Temp. (The M: drive is recommended as files left on C:/Temp will be removed when you log off.)

3. Launch BlueJ (for example, by double-clicking on the BlueJ icon on the desktop or selecting it via the Start icon). Note that double-clicking on any of the files in `figures` or `house` will **not** launch BlueJ.

4. After you complete (to the best of your ability) each part of the lab (1 through 4), put up your hand and a TA will check it. You will **not** submit anything electronically during the labs. All the checking will be done during the lab itself. **If the TAs are busy, and you don't have any questions, continue working through the lab and get the TAs to check your work when you are done, or when they are less busy.**

Here are the four parts of the lab:

- Part 1: Open the "figures" project from within BlueJ.

  o Select "Show Terminal" from the view menu. Select "Record method calls" from the terminal's Options menu. Observe the output in the terminal window as you draw your diagram (below).

o Draw this diagram:

- Part 2: Open the "house" project from within BlueJ. (You will use this for parts 2, 3, and 4.)

  o Create an instance of "Picture". Invoke the "draw" method and then the other methods.

  o How do you think "Picture" draws the picture?

  o Look at the pop-up menu for class "Picture". Select "Open editor". Look at the code.

  o In the code, find where the picture is drawn and change the sun from yellow to blue.

- Part 3: Take your solution to part 2, and rename "sun" to "moon". Make the moon blue and move it a little further to the right of the picture. (Aside: You can really put the moon anywhere you like, as long as you get the desired effect. We found that unless we moved the moon a bit, the added circle ended up covering part of the roof of the house, which looked strange!) Now you are going to add a method "moonPhases" to model the different phases of the moon. Our model of the moon phases is to be implemented by moving another (new) circle across our blue moon from right to left, to get an effect similar to the phases of the moon (in super fast motion). Think about what colour this new circle should be. Check that all the other methods still work properly. (This is called "regression" testing.)

- Part 4: Start with your solution to part 3. The moon is normally only visible at night, i.e. when it is dark. Figure out how to change the background colour of your picture from white to black. (Hint: This is **not** set in the "Picture" class.) And now redo part 3. Again, do your regression testing.