08240 2D Computer Graphics: Lab3

Aim

The aim of this lab is to put in to practice the translate, rotate, scale, save, and restore functions that we learnt about in the lecture this week. Remember that you can refer to the lecture slides on Sharepoint if you need a reference to the functions.

Task 1 - Copying your previous files

The '**index.html**' file will be unchanged from the end of last week so you can copy and paste it from the **Lab2** folder into your **Lab3** folder. I have used bold to highlight what the names of the folder and file should be. We will also be making use of the '**canvas.js**', '**vector.js**', and '**house.js**' files from the last lab so you can copy and paste them into the **Lab3/javascript** folder.

Commit to SVN

Now that you have reached a milestone in your lab (setting up the **Lab3** folder and contents) it is a good time to commit your work to SVN. **Don't forget to add a meaningful log message that starts with L3T1 on the first line.**

For the rest of the lab, try to identify sensible milestones to use as commit points for SVN. As a rough guide you could use the numbered list below. Try to make sure that where ever possible the code works before committing it.

Coding the JavaScript

So, last week in Lab2 we should have created a House object which has an x and y attribute defining its position. It also should have a draw function that takes in a context as a parameter to draw itself to. All of the lines that made up the house were defined relative to the x and y attribute of the house. This week we are going to carry out the following tasks, committing to SVN after each one:

Task 2 - Use translate to move the origin to the centre of the canvas. **Commit L3T2 with meaningful log message.**

Task 3 - Change the House draw function and add any necessary functions so that we draw the house relative to the origin (0, 0). It should make maximum use of the transformation functions to achieve this (when drawing windows etc). **Commit L3T3 with meaningful log message.**

Task 4 - The house should then be translated using the x and y attribute to the desired position on the screen. **Commit L3T4 with meaningful log message.**

Task 5 - Add a scale attribute (along with appropriate getter and setter functions) and use the scale function to alter the size of the house. **Commit L3T5 with meaningful log message.**

Task 6 - While you are at it, add an angle attribute so you can adjust the rotation of the house. **Commit L3T6 with meaningful log message.**

Task 7 - Make sure that you use the save and restore functions appropriately to restrict the transformations to the parts of the drawing that we want. **Commit L3T7 with meaningful log message.**

Task 8 - Make a Sun object (**sun.js**) that consists of a circle and triangles for the rays. Use the translate and rotate functions to position the triangles around the central circle. You can base the object on your house. Don't forget to reference the javascript file in the **index.html** file and add it to SVN before you commit. **Commit L3T8 with meaningful log message.**

Task 9 - Define Tree or Flower (or both) objects and add some flora to your scene. **Commit L3T9 with meaningful log message.**

Task 10 - Use your imagination. **Commit L3T10 with meaningful log message.**

Summary

You revised your House object from Lab2 to make use of transformation functions to draw a house. You then created extra objects for defining a Sun and a Tree and/or Flower and used them to embellish your scene. You maybe even used your imagination to come up with something else to add.