The objective of this lab is for you to gain experience using the javax.swing package and have some fun. Specifically, drawing using the **Graphics2D** class and its methods.

Your objective is to create a class that extends **JComponent** that represents a very simple drawing of a house and landscape. The house should have a door and some windows and a triangular roof. Add some landscaping, a sky, etc. Use a nice variety of colors and textures. The constructor of your class should accept parameters used to set the width of the house and the height of the walls of the house.

The following drawing shows one version of the house. You may follow this example or use your own design. The proportions of the house, windows, door, etc. should, reasonably, scale with the dimensions provided. In other words if the width is 300 and the wall height 200 in one run of the program, when the dimensions are changed for the next program run, the windows, door, etc. should scale to size and position; not perfectly, just reasonably.
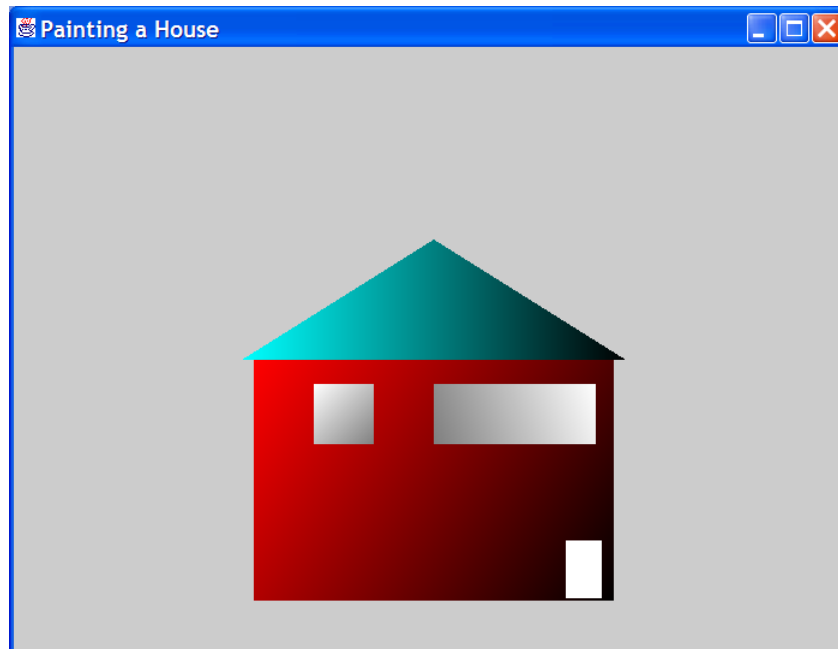
You are then to write an **application** program that creates a frame and adds your drawing as shown above. The application should accept parameters from the command line. i.e. *java MyHouse 300, 200* and use the 300, 200 to size the house.

Finally, write an **applet** that displays your drawing, getting the dimensions from the applet parameters.

Use methods of the **Graphics2D** class to do the drawing and be sure to include the use of **GradientPaint**. Use the javax.swing components for the applet and the application window.

Hints:

- ❏ You'll need to sketch out your drawing in grid-like form to plan your coordinates.

- ❏ You'll need to override the ***paint(Graphics g)*** method of the JComponent to do the actual painting.

- ❏ Do most of your calculations in you class constructor not the paint method. The paint method is called multiple times and placing many calculations there can diminish the efficiency of your program.

- ❏ Use the JComponent ***setPrefferedSize()*** method to size your object. Study the Dimension class also.

- ❏ You may want to browse the java.awt.geom. and java.awt packages for drawing classes and methods.

Have FUN!!!