Your task is to write a program that will draw a scene that includes a house.

## house \ˈhau̇-z \

**1:**  a building that serves as living quarters for one or a few families**:** home

**2:** (1) **:**  a shelter or refuge (as a nest or den) of a wild animal (2) **:**  a natural covering (as a test or shell) that encloses and protects an animal or a colony of zooids **b** **:**  a building in which something is housed

Your program will have several classes:

* Main class – with main method, creates the JFrame and your Panel.
* Panel class – extends JPanel. It has the paint method, which will draw all of your graphics.
* House class – this will draw your House. It will have at least two instance fields, for x and y, as well as a constructor and a draw method.
* Other classes – which will let you draw other objects in your scene.

This assignment will be worth 30 points. Grading will be based upon code structure, complexity and aesthetics. For reference, a few ***EXAMPLE*** grading guidelines are below.

21/30 – Your program draws a basic house and a sun. It uses 2 colors. It has two classes – Sun and House. You’ve used lines, rectangles and ovals.

23/30 – Your program draws a house that incorporates several colors and has some features, like windows, doors, or something. There are 3 classes used – House and 2 others. You’ve used polygons, in addition to the basic shapes.

25/30 – Your program draws a house that has some cool details. Your code uses at least 4 classes – House and 3 others. You’ve used a for-loop somewhere in your program. There are polygons and arcs, and you’ve utilized various stroke sizes.

27/30 – Your program does all that the previous description includes, and adds some other elements, such as randomization, scaling your objects, etc.

30/30 – Your program does all of the above, and demonstrated mastery of using classes appropriately, looping, and randomization. Your result is visually appealing. The program incorporates some concept you’ve researched on your own, like GradientPaint, or rotation, or mouse or keyboard interaction, or sound, or…

Note that these are guidelines. There are MANY ways to complete this project at various scores.

Learning objectives:

* Utilize Object Oriented Programming successfully.
* Design classes with instance fields, methods and constructors.
* Use multiple objects of a class.
* Explore Java syntax and features
* Becoming more familiar with variables, methods and class structure
* Utilizing for loops
* Utilizing Math.random() in a useful manner
* ***Create a product that you are proud of using computer programming***