Objects & Graphics

Your Assignment

Prerequisites

Before you begin this assignment, download and install (place in the correct spot) the graphics.py Python module which is necessary for this graphical assignment.

Five-click house

You are to write a program that allows the user to draw a simple house using five mouse clicks.

The window should be large enough to do this, the default sized window is 200x200, which is too small. Have a window of size 500x500, by using the line `win = GraphWin("House", 500, 500)`.

1. **Click 1 and 2** will mark the lower left, and upper right of the rectangular frame of the house, respectively.

   Draw these two prompts *in the displayed graphics window*, successively:

   1. First, ask for click 1 with the prompt: `Click on lower left corner of the house frame.`

   2. Then, ask for click 2 with the prompt: `Click upper right corner of the house frame.`

2. **Click 3** will indicate the center of the top edge of a rectangular door. The door should have a total width that is 1/5 of the width of the house frame. The sides of the door should extend from the corners of the top all the way down to the bottom of the frame.

   Hint: the width of the house is the difference between the x values of the two points.

   After the door is drawn, draw a doorknob. It should be placed at 1/2 of the door's height, and some reasonable distance from the door's right edge. The radius of the doorknob is up to you, so long as it is reasonable.

   Hint: the height of the door is the difference of the y values of the lower house point and the top of the door.

   Draw this prompt *in the displayed graphics window*:

   `Click on the center of the top of the door.`

3. **Click 4** will indicate the *center* of a square window. The window is 3/4 as wide as the door.

After the window is drawn, draw the window's *muntins* (crosshatches). The lines of the muntins are required to be placed halfway of each edge of the window.

Draw this prompt *in the displayed graphics window*:

```
Click on the center of the window.
```

4. **Click 5**, the last click, will indicate the peak of the roof. The edges of the roof will extend from the point at the peak to the corners of the top edge of the house frame.
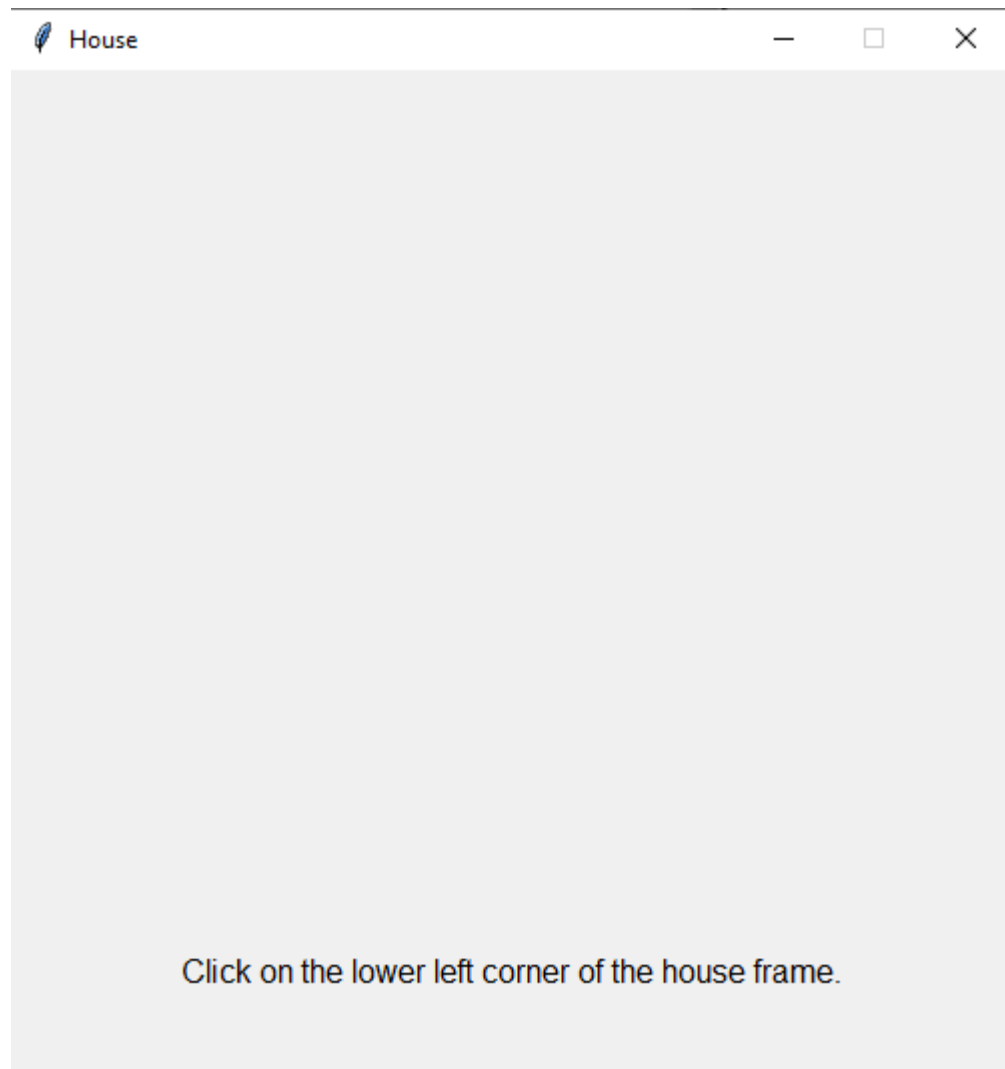
Prompt *in the window*:

```
Click on the peak of the roof.
```

5. **Click 6**, prompting in the window `Click anywhere to quit.` At this point, *the displayed graphics window should close*.

Example

See the following pictures to give an example of how your image should look at each step (although the exact positioning of objects will depend on where you click).
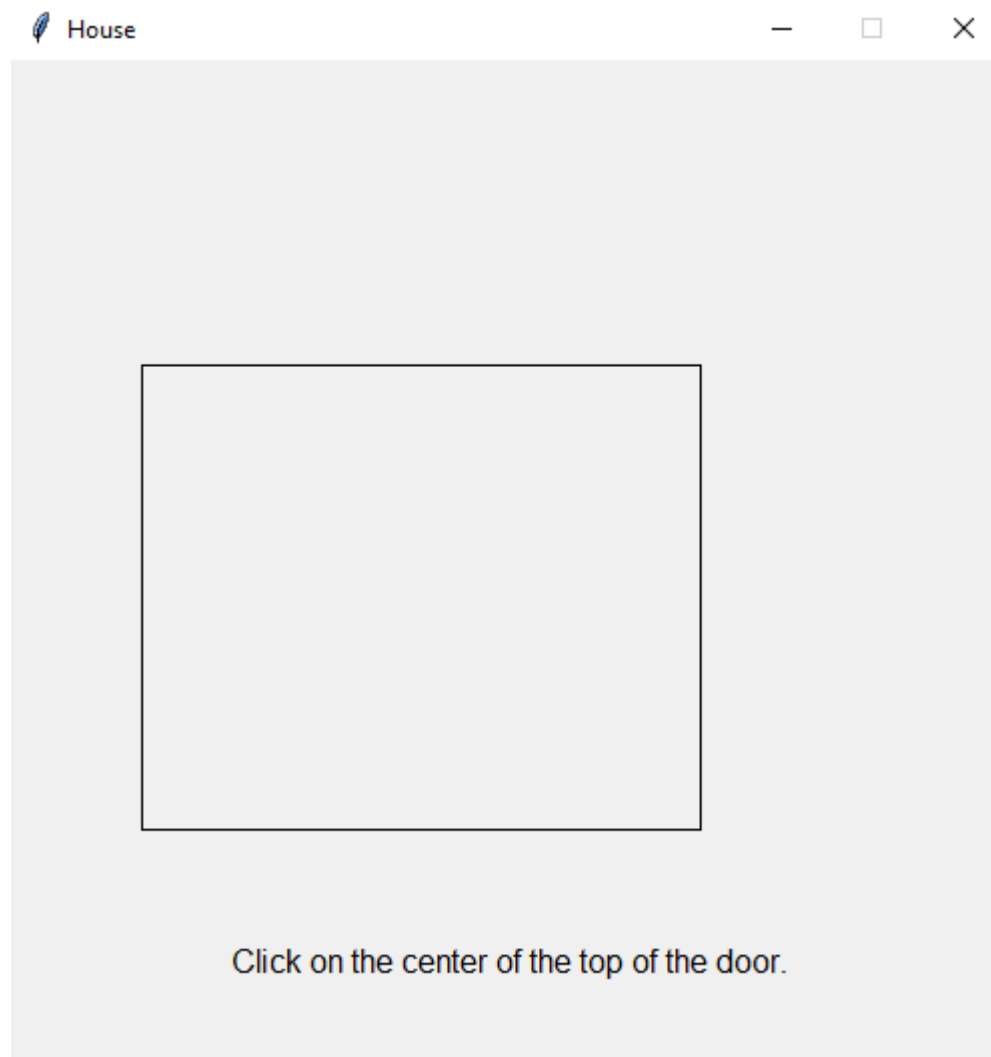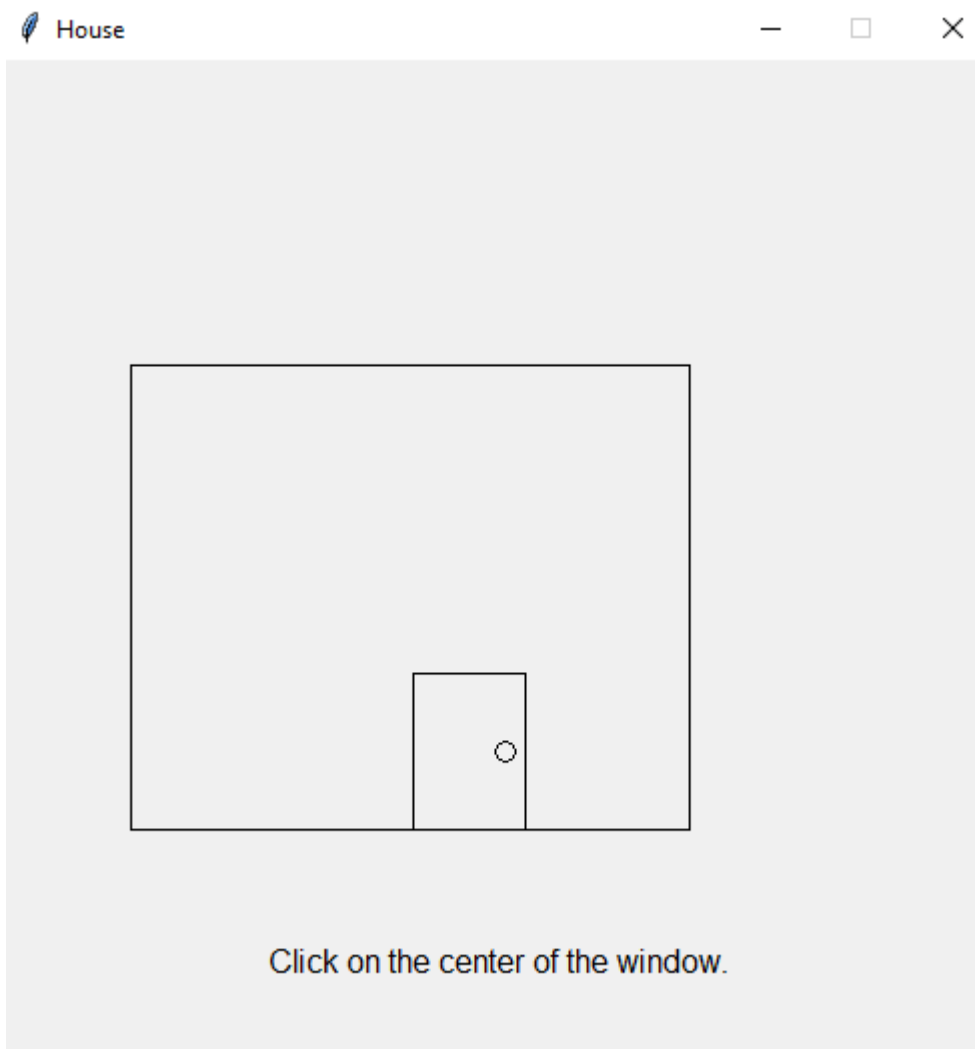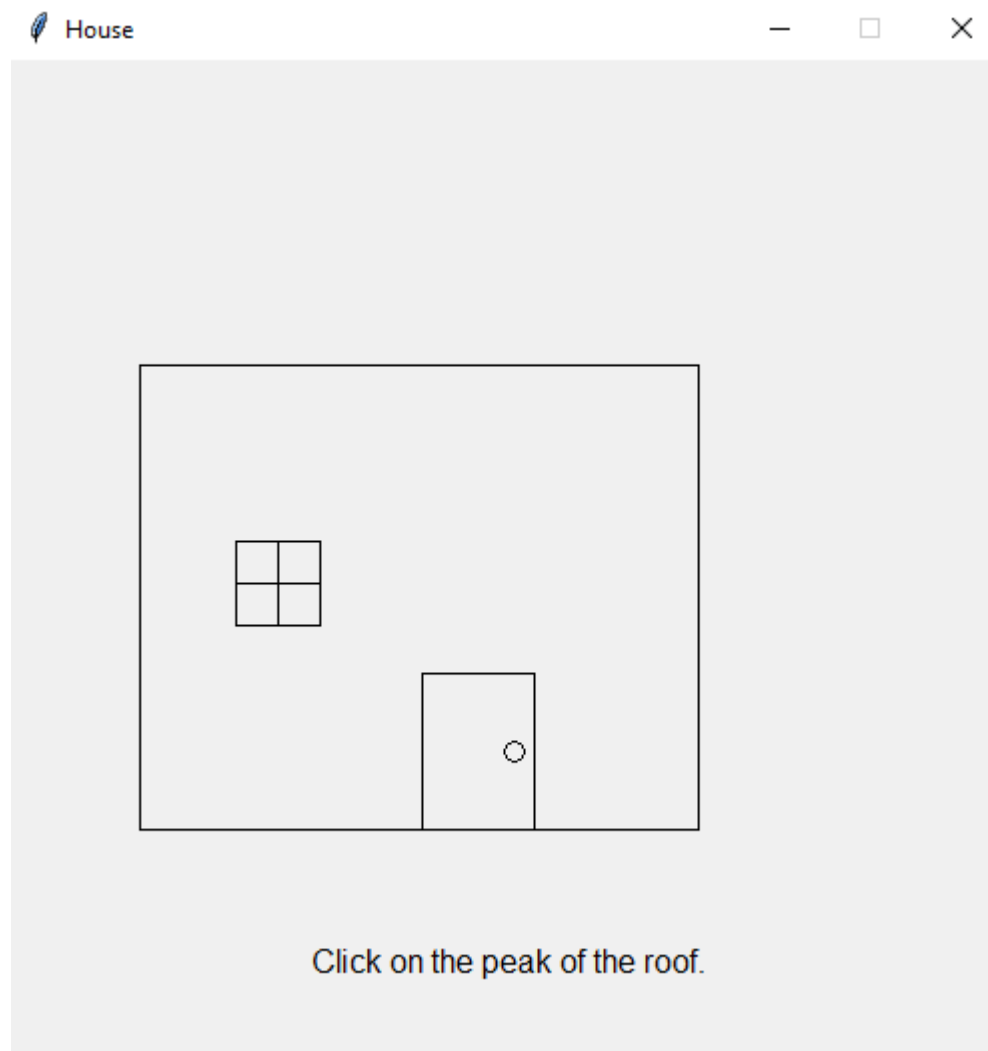
- **On start:**

Click on the lower left corner of the house frame.

- **After click 1:**

Click on the upper right corner of the house frame.

- **After click 2:**

Click on the center of the top of the door.

- **After click 3:**

Click on the center of the window.

- **After click 4:**

Click on the peak of the roof.
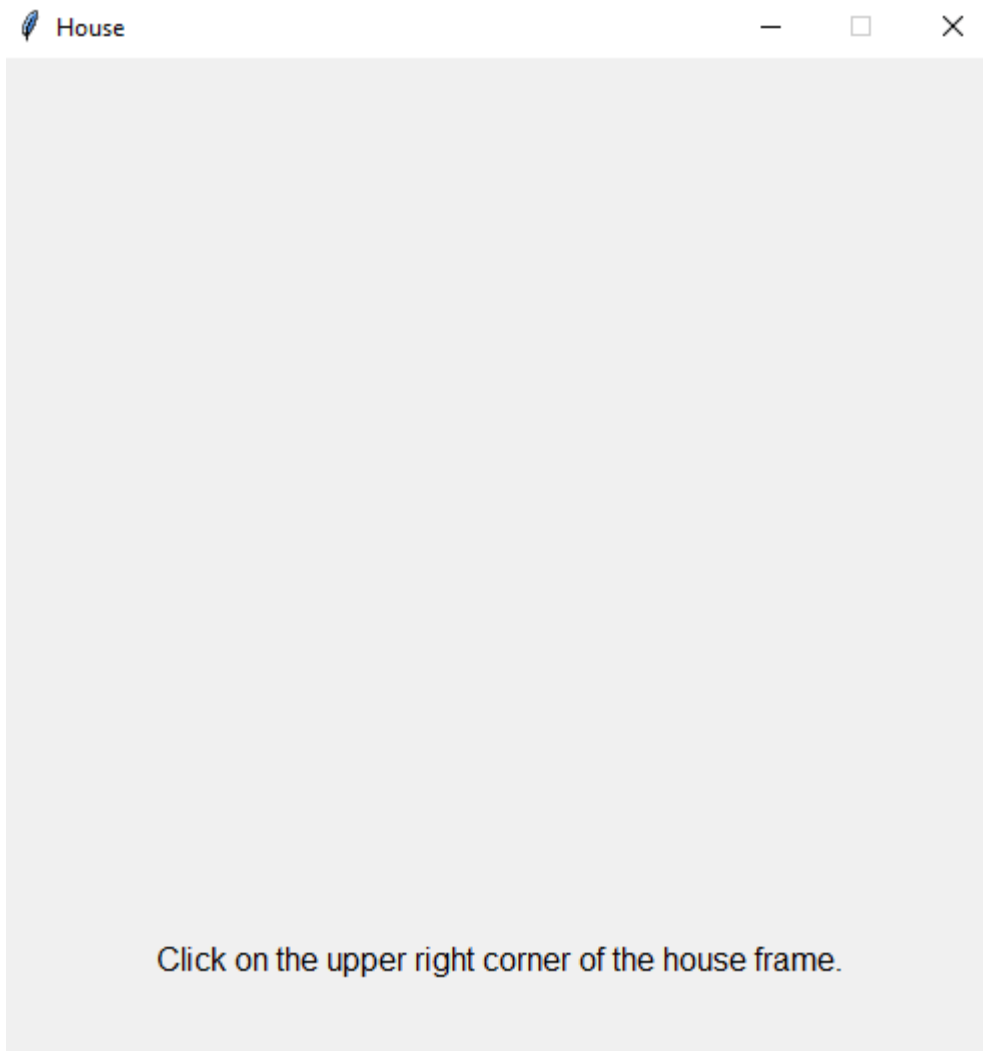
- **After click 5:**

Submission Requirements

The title for this lab is *hw3*. Your submitted file is **required** to be named `hw3.py`.

Make sure to have a docstring that *at least* includes your name.

Grading

The rubric for this assignment is available through Gradescope.