AP Computer Science

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Homework: Paint a BullsEye and Paint a Scalable House

Last Updated: 4/17/2020 10:41 AM

https://www.ntu.edu.sg/home/ehchua/programming/java/J4b_CustomGraphics.html

Thanks to Collin Hession 2018 Grad for the above hyper link

1. **Write a java class that extends JFrame. You will draw a concentric BullsEye**
   It needs to have a paint method.
   A paint method will get called by the windowing system to update the window with whatever symbols you would like to draw to the Frame.

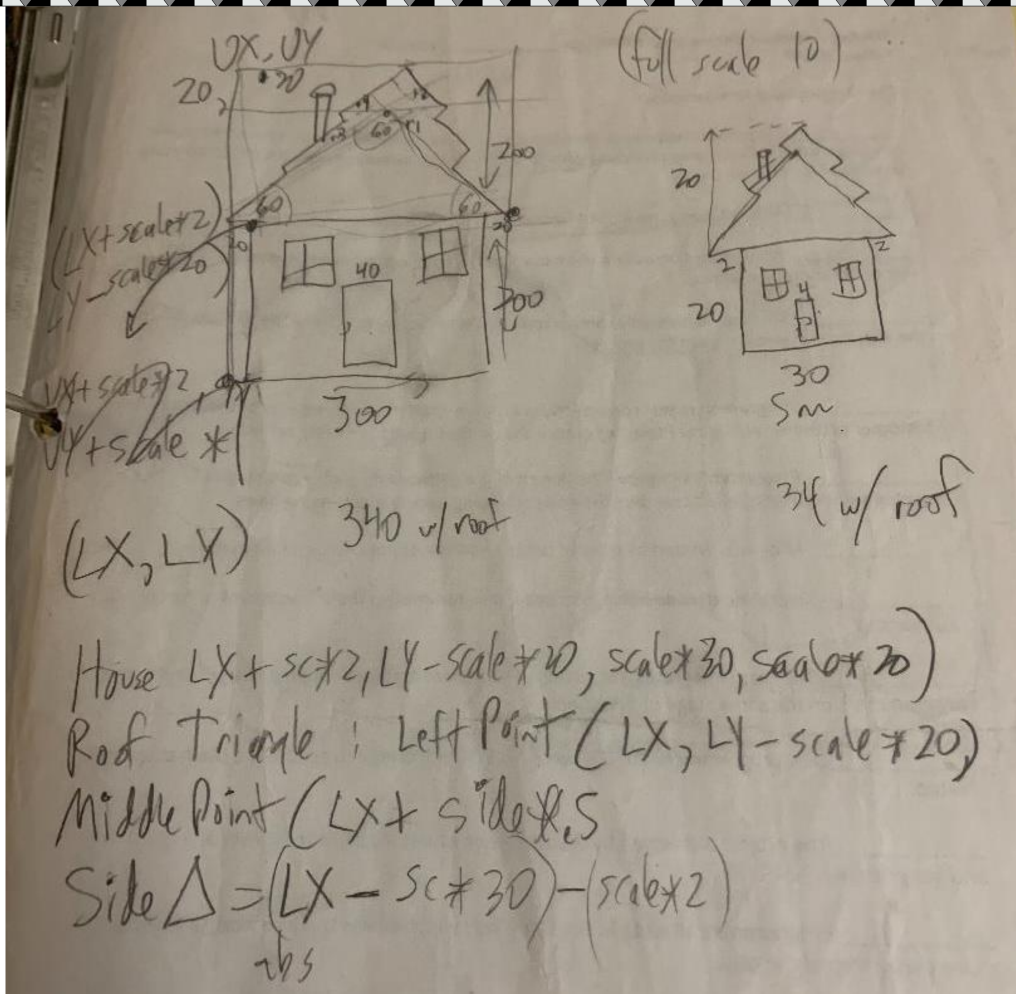
   Draw a "bull's eye"-a set of concentric rings in alternating black and white colors. Hint: Fill a black circle, then fill a smaller white circle on top and so on. See image on next page.

2. **Write a java class that extends JFrame. You will draw a SCALABLE House.**
Write a program that draws a picture of a house.
It could be as simple as the picture on the next page or if you like, make it more elaborate (3-D, skyscraper, marble columns in the entryway, whatever (Dylan Nezaj did the white house! while Chris Schuck made a 3d house that you could scroll around!!!)).

a. Implement a House class and supply a method draw(Graphics2D g2) that draws the house.
Your house must be able to scale to at least **10 different sizes** in proportion.

b. The House must have;
   i. **Rectangular Main Part**
   ii. **Two windows**
   iii. **Door**
   iv. **Triangular Roof**

c. Some students prefer to use an input from the user. Other students like to use the mouse scroll wheel.
Personally I looped through and drew each of my houses in one Frame.
Here is my sketch

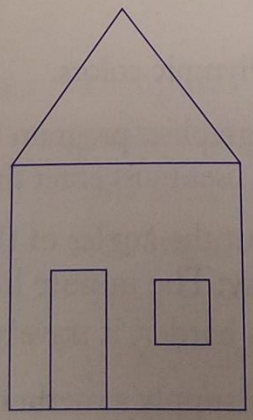

UX, UY
(full scale 10)
200
300
340 w/roof
30
34 w/ roof
(LX+scale*2)
(LX, LX)
House LX+sc*2, LY-scale*20, scale*30, scale*20)
Roof Triangle : Left Point (LX, LY-scale*20)
Middle Point (LX+ side*.5
Side Δ = (LX - sc*30) - (scale*2)

e colors. *Hint:* Fill a black circle, then fill a smaller white circle on top,

ise P4.7. Write a program that fills the applet window with a large ellipse, filled your favorite color, that touches the window boundaries. The ellipse should resize when you resize the window.

ise P4.8. Write a program that draws the picture of a house. It could be as simple accompanying figure, or if you like, make it more elaborate (3-D, skyscraper, mar umns in the entryway, whatever).

ment a class `House` and supply a method `draw(Graphics2D g2)` that draws the hous



e P4.9. Extend Exercise 4.8 by allowing the user to specify houses of diff

I decided I wanted all houses to be at the same bottom y coordinate so I draw each one from a reference point

My reference point is from the bottom left of the house.

NOTE: I never implemented the chimney or cool roof angle thing!

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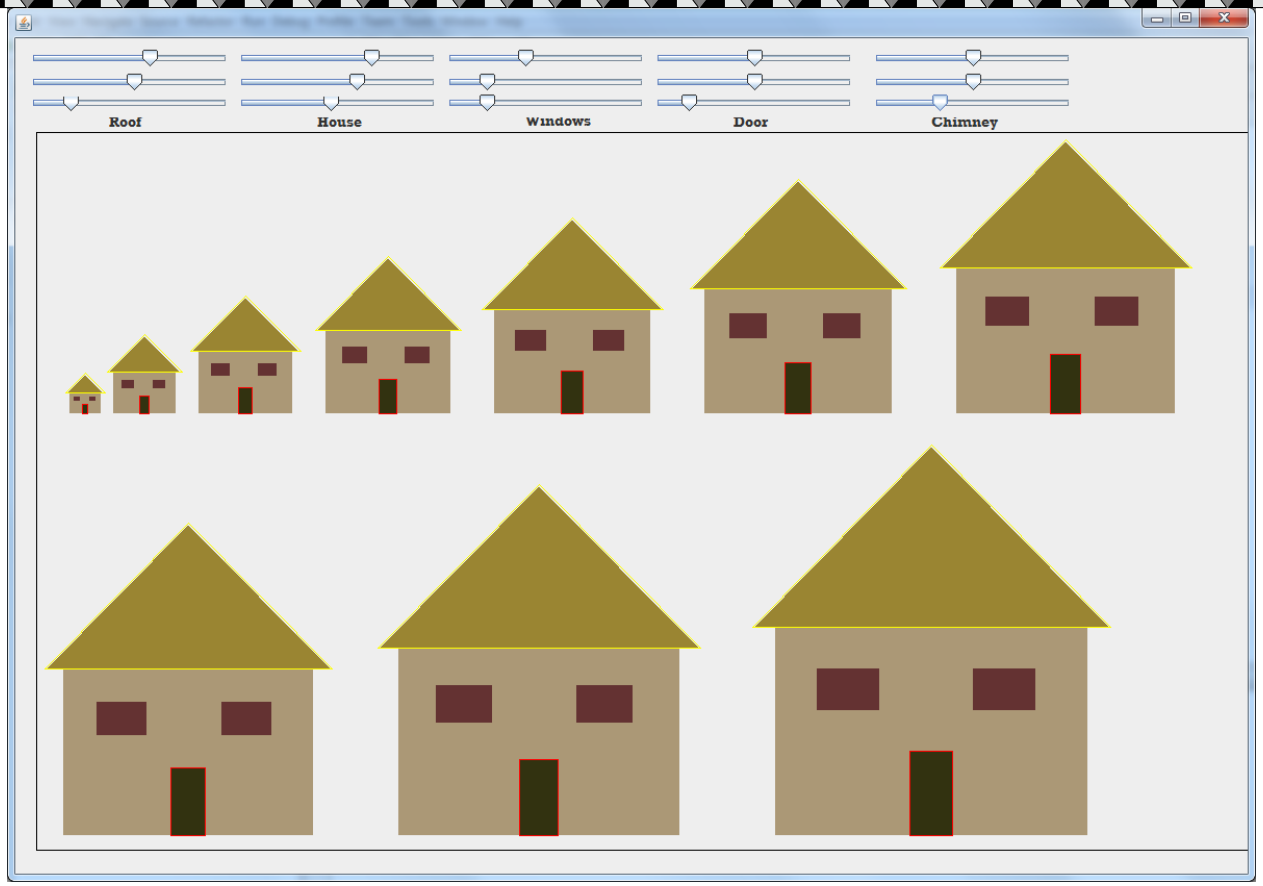

My sliders allow the color of various components to be changed.

You must have;

- A triangular roof (this is simple trig, don't panic)
- A house building
- One door
- Two windows
- Must scale to different sizes mathematically(No 10 if statements)

Rubric	
Bulls eye	10
Basic House	45
Bonus ->Uses scroll wheel	+4
TOTAL	55