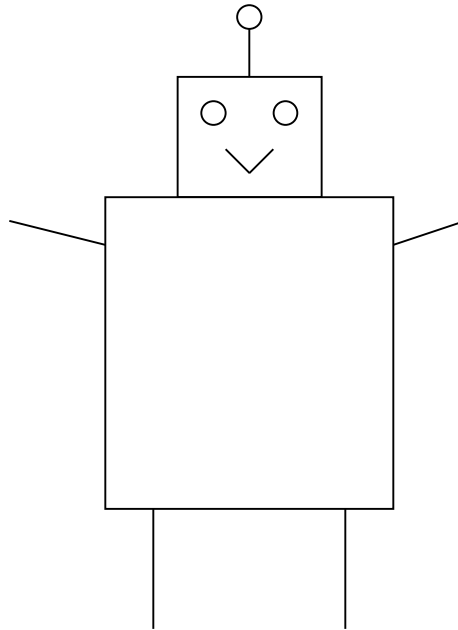**CMSC 113: Computer Science I**
Lab #2: Phil the JavaBot & Katie the Cat

Helpful example code: *ShowP.java* & *Pinocchirobin.java*.

Write a compound object named `Phil`. `Phil` should look like this:

1. Write an applet that puts Phil standing at the center of the bottom of the window. (You should adapt *Robot.java*, linked from the syllabus page.) When the user clicks, the ends of Phil's smile go down a little. After a few too many clicks, Phil will start frowning. It is OK if eventually Phil's smile leaks off his face. This will require writing a `frown` method in your `Phil` compound object.

    Your main `GraphicsProgram` may have only one `add`.

2. Add a new feature to your program: As the user moves the mouse around the applet, Phil follows the mouse, with the arrow centered in the circle at the end of Phil's antenna. Whenever the user clicks, the antenna grows a little longer (instead of frowning). The mouse must still stay centered in the end of the antenna. You may *not* use many `move` or `setLocation` commands in your code – find a way to do this with only a few `move` or `setLocation` calls. *Hint*: It may be helpful to write two compound objects for this.

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3. Write a compound object to represent Katie the Cat. (Adapt *Cat.java* from the syllabus page.) Then, write a program that starts with Katie in the center. When you click to Katie's left, Katie moves 5 pixels left. When you click to Katie's right, Katie moves 5 pixels right.

4. Add this feature: Katie should move 5 pixels up and down if you click above or below her, along with moving side-to-side as appropriate.

5. Add this feature: When Katie catches up with the mouse, Katie's frown should become a smile. Use a `smile` method in your Katie class.

6. Add this feature: If the mouse clicks off Katie after she is smiling, the smile should return to a frown, using a `frown` method.