

CMSC 113: Computer Science I
Robin Project
due on Gradescope by the beginning of class on February 13, 2018

Collaboration Policy: You may choose to work with a partner for this project. If you work with a partner, let me know as soon as you make your decision. If you choose not to work with a partner, you must follow the guideline "If you're talking in Java, you've gone too far." Remember, I take a breach of this policy seriously – if you're uncertain, ask before making any assumptions.

For this project, you will write a fully-featured Robin! A fully-featured Robin contains all of the following:

- An outline with nose (2 pts)
- Hairs that grow longer with time (10 pts)
- Cheeks that start white and turn redder with every click, becoming fully red at 10 clicks (10 pts)
- A mouth that opens every time the mouse passes over Robin's face (10 pts)
- A drastic change in Robin's face that happens after 10 clicks, representing the fact that Robin is tired of being clicked on. At a minimum, you can draw a big X over Robin's face, but creativity is encouraged! (10 pts)
- Ears that wiggle back and forth every second (4 pts)
- **Extra challenge:** Pupils that follow the mouse as it moves (brownie pts)

Some particulars:

- Once you get Robin's cheeks to redden, it is quite likely that something bad will happen after you click too many times. This badness will be accompanied with lots of red text printed out to the *Console* display in Eclipse. To get the full 10 points for Robin's cheeks, figure out what is causing the red text and stop it from happening.
- To get full credit for the cheeks, they must smoothly transition from white to red in 10 clicks.
- To get full credit for Robin's drastic change, you must prevent Robin from moving again thereafter.
- To get full credit for the wiggling ears, they must wiggle every second, not every timer tick. The hair, however, must grow faster than just once a second. The challenge here is to get two elements operating at different rates.
- The cheeks must be written using compound objects. You will thus have two files: *Robin.java* and *Cheek.java*. Note that your Robin will have two *Cheek* objects – do not write your *Cheek* compound object to have two *GOvals*. The *Cheek* object must have a *redden* method that makes the cheeks turn red.

Feel free to add extra features to your Robin. Have fun with this project!