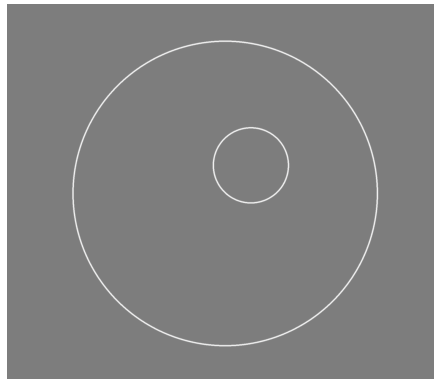# Problem set 2

1. People are amazingly good at tasks involving symmetry. Here you will use Python and the PsychoPy module to create an experiment that measures performance in one such task.

In this experiment the subject sees a large, outlined circle at a fixed location on the screen. The mouse controls the position of a second, smaller circle.

The subject's task is to center the smaller circle inside the larger circle. At the beginning of each trial, the smaller circle appears at a random starting location. The subject uses the mouse to move the smaller circle so that it is centered in the larger circle, and then presses the spacebar to indicate that this is their response.

There are ten trials of this kind, and then the experiment ends. On each trial, write all parameters of interest to a text file: the trial number, the larger circle's radius, the smaller circle's radius, the subject's response (i.e., the (x,y) coordinates where they finally placed the inner circle), and the response time.

Also write a Python script that loads the data file and evaluates the error in the subject's responses, i.e., the mean distance of the smaller circle from the true centre of the larger circle.

You can choose the experimental parameters like the grey and white intensities, the radius and thickness of the circles, and so on.

Email your solution to me (rfm@yorku.ca) in a single .zip or .tar file named with your last name in lowercase, e.g., murray.zip.

Due December 9, 2022