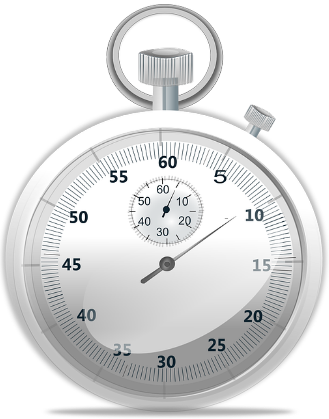
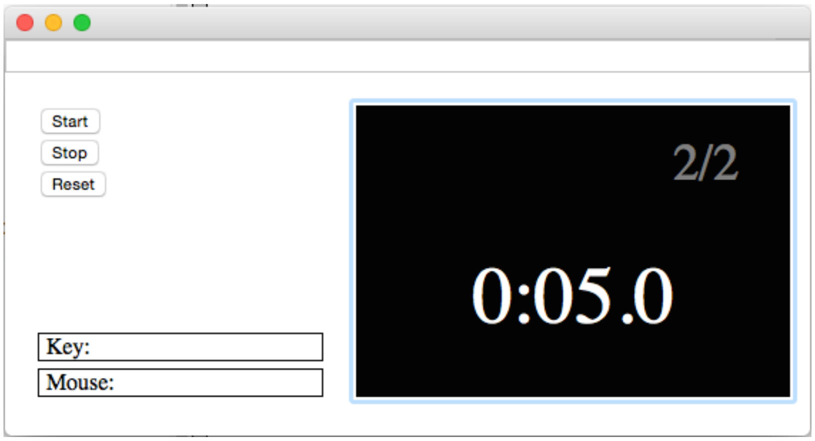
Intro to programming II - PCR - Based on Intro. to Interactive Prog. by Rice University

project 3: Stopwatch

Template: http://www.codeskulptor.org/#examples-stopwatch_template.py





Will we manage to press the Stop button at the top of the second? I managed to stop the watch at exactly 3.0s and 5.0s, so my score is 2/2 but, actually, it is quite difficult to do it consistently.

Writing our project:

1. Build a timer with a 0.1s interval whose handler increments a global integer, i.e., the timer keeps track of time in tenths of seconds.
2. Add the event handler for the canvas that draws the time as an integer, w/o formatting it.
3. Add the `Start` and `Stop` buttons whose handlers start and stop the timer. The timer should not be running when we open the frame.
4. Add the `Reset` button that stops the timer and resets it to zero.
5. Write `format()` that returns a string of the form A:BC.D, where A, C and D are digits in the range 0-9 and B is in the range 0-5. We can test the format() function separately at http://www.codeskulptor.org/#examples-format_template.py. Some examples of the output are:

```
format(0) = "0:00.0"
format(11) = "0:01:1"
format(321) = "0:32.1"
format(613) = "1:01:3"
```

   For example, 613 means 613 tenths of a second, so that is 61 seconds plus 3 tenths of a second, and since 61 seconds is 1 minute plus 1 second, we end up with 1:01:3. We will need integer division and modular arithmetic to make this work, e.g., we will need integer division (e.g., 15 // 6 = 2 because 6 fits in 15 twice) and the modulus operator (e.g., 15 % 6 = 3 because there are 3 left after we remove 6 from 15 twice).
6. Insert the `format()` function in the draw handler; the stopwatch only needs to work up to 10 mins.
7. Add two counters in the form of `score`/`attempts` at the top-right of the frame; score is the number of times that we have stopped the watch at the top of the second (e.g., at 1.0, 2.0, 3.0, etc.), and attempts is the number of times that we have pressed the `Stop` button
8. Add a global boolean to keep track of when the stopwatch is running. Use it to make sure that pressing the `Stop` button only works when the stopwatch is running.
9. Modify the `Reset` button to also reset the score/attempts scoreboard, i.e., set it to 0/0.