A Question of Timing

Objective: Give you practice with IFTTT.com

Behavior: In this project, you will create an IoT device with 3 LEDs, a switch, a photoresistor and a speaker, to track how much time you spend doing some activity. The device can time up to 8 different activities: the user selects the particular activity they wish to time by pressing a button. Each time the button is pressed, the next activity will be selected. The activity currently being timed will be indicated by 3 LEDs, as follows:

Activity #	LED 2	LED 1	LED 0
0	LOW	LOW	LOW
1	LOW	LOW	HIGH
2	LOW	HIGH	LOW
3	LOW	HIGH	HIGH
4	HIGH	LOW	LOW
5	HIGH	LOW	HIGH
6	HIGH	HIGH	LOW
7	HIGH	HIGH	HIGH

Once the user has selected an activity, they start the timer by cupping their hand over the photoresistor. They repeat the process to stop it. The speaker will play a tone each time the timer changes state; the internal LED, D7, will be lit whenever the timer is running. Time elapsed within an activity is cumulative. For example, if the user starts the timer, lets it run for 10 seconds, stops the timer, starts the timer again and lets it run for 15 seconds, the total elapsed time will be 25 seconds.

Each time the timer is stopped, the current activity number, and the total time elapsed, will be appended to a Google spreadsheet. (See, I *told* you there would be some IFTTT.com related activity in this assignment).

Deliverables: Your code and a URL for the spreadsheet (share it so that your TA and instructor can see it — read only, please)

Notes:
When the program first starts, the activity is number is 0, the timer is stopped, and the elapsed time is 0.
The elapsed time is only reset to 0 when the user advances to another activity. Otherwise, the elapsed time is cumulative.