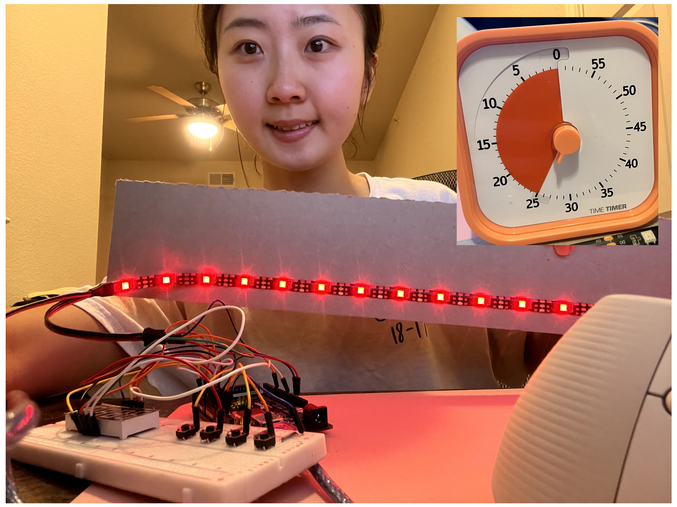
The University of Texas at Austin
Informatics
School of Information

Programming Paradigm for Arduino: Physical Time Tracker for Meetings



Goal: To revolutionize how time is managed during meetings to enhance communication and interaction. Timer should be **intersubjective**: It could show how much time has left without telling the actual time.

Outcome: comprehensive exploration of **coding techniques and hardware integration**. Conceptualized a miniature train track that has streetlights along its length. Each streetlight represents a specific time interval of the meeting. The track is divided into corresponding sections to visually represent and manage the meeting's time flow. This is represented through **preliminary sketches.**

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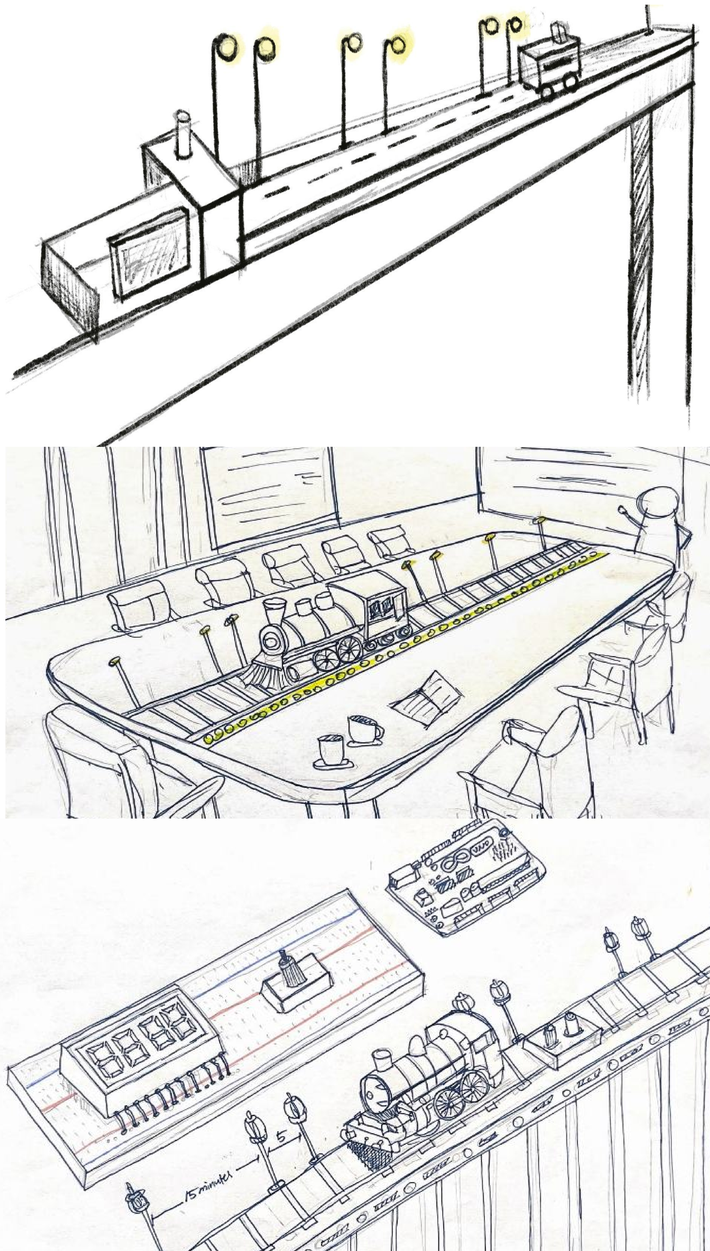
Design Concept Sketch



Example Code & Instruction

Setup function is used to initialize settings, pin modes.

PinMode configures the digital pins connected to segments A to G of the 7-segment display as output pins. This allows the program to control pins to display numbers for the countdown timer.

```
void setup() {
pinMode(segA, OUTPUT);
pinMode(segB, OUTPUT);
pinMode(segC, OUTPUT);
pinMode(segD, OUTPUT);
pinMode(segE, OUTPUT);
pinMode(segF, OUTPUT);
pinMode(segG, OUTPUT);
```

- For loop iterates through the digit_pin array, which means each pin is going to be the output.

i = 0 ; initializes a loop control variable named i to 0. This is the starting point of the loop.
i < 4 ; means loop will run as i is less than 4.
i ++ ; after each loop is iterated, i is increased by 1. (i++ means: i = i+1). This happens at the end of each loop iteration.

```
for (int i=0; i<4; i++) {
```

- PinMode: sets a specific pin as an input or output in an arduino board.
- digit_pin: is an array that contains pin numbers on your arduino board. Each time the loop is run, it accesses the next element in the digit_pin array. (which means digit_pin[0], digit_pin[1], digit_pin[2]... are accessed sequentially)

```
pinMode(digit_pin[i], OUTPUT);
}
```

Output: means each pin in the array will act as an output pin, meaning the pin will provide voltage to the 7-segment display.
Loop runs 4 times because it starts at - and runs until longer less than 4 (so 0, 1, 2, 3)

```
pinMode(speakerPin, OUTPUT);

pinMode(button1,INPUT_PULLUP);
pinMode(button2,INPUT_PULLUP);
pinMode(button3,INPUT_PULLUP);
pinMode(button4,INPUT_PULLUP);
```