

Traffic Light using RPi and Scratch

Worksheet for students

Names of team members:

SECTION 1

1-1) Briefly describe the changes to be made to the project to create a go-ahead signaling system for the entry-exit of cars from a garage ramp

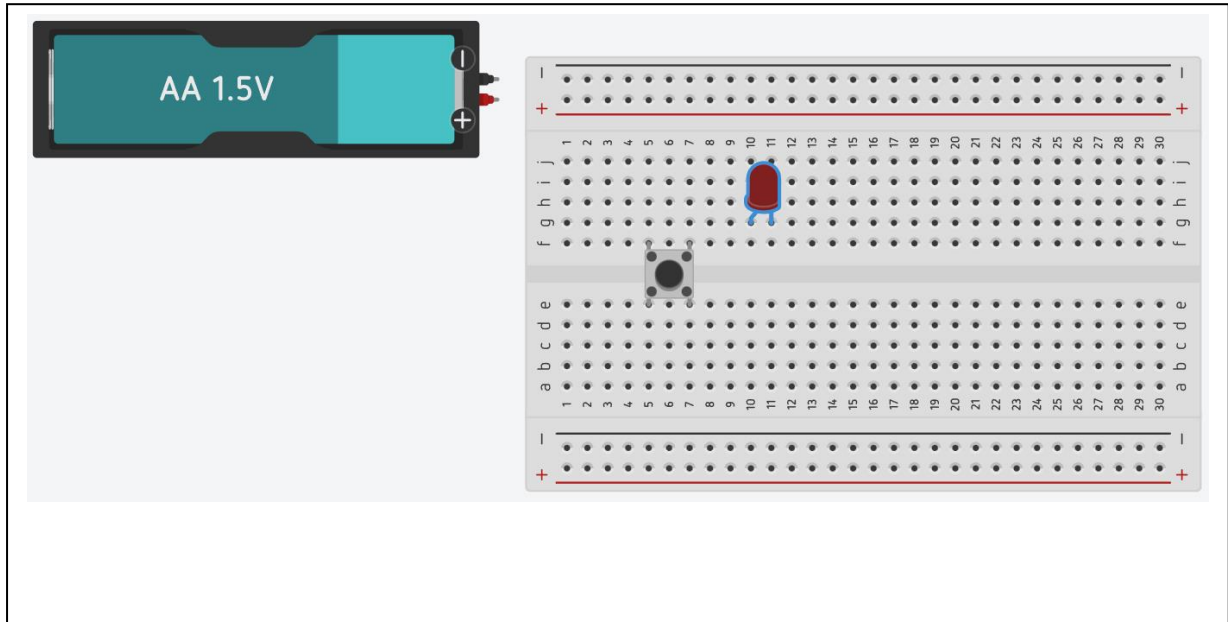
1-2) Do you think it is better a signaling system with the overlapping of red lights or without? What could the eventual overlapping time of the two red signals depend on?

1-3) Do you think that, for maintenance interventions, it is better to use a button or a switch to activate the "maintenance" function? Please explain the answer.

1-4) How do you think you can intervene on the "2. TL Overlap Keyboard" program to increase the overlap time? And to take it off?

SECTION 2

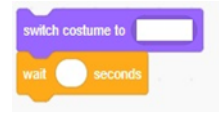
2-1) Connect the led diode to the battery and to the button using the breadboard



2-2) How would you modify the "TL Overlay Keyboard Set timing" program to make a sound during the time that the yellow light is on?

SECTION 3

3-1) How would you make a program, in desktop mode, to turn on the three lights in the following sequence: Only Red and Yellow “on” simultaneously for 3 seconds then only Red and Green “on” simultaneously for 4 seconds. Draw the sequence using the Scratch commands "switch costume to" and "wait"



3-2) As in the previous case, but using GPIOs, indicates the terminals you would use to turn on the three LEDs of a preassembled led traffic lights according to the following sequence: Only Red and Yellow “flashing” for 3 seconds then only Yellow and Green “on” simultaneously for 4 seconds. Draw the sequence with the relative commands

SECTION 4

Describe how you conducted the test phase of the complete system, if you found any malfunctions and their eventual debugging.