



On-demand Traffic light control

Embedded System Project

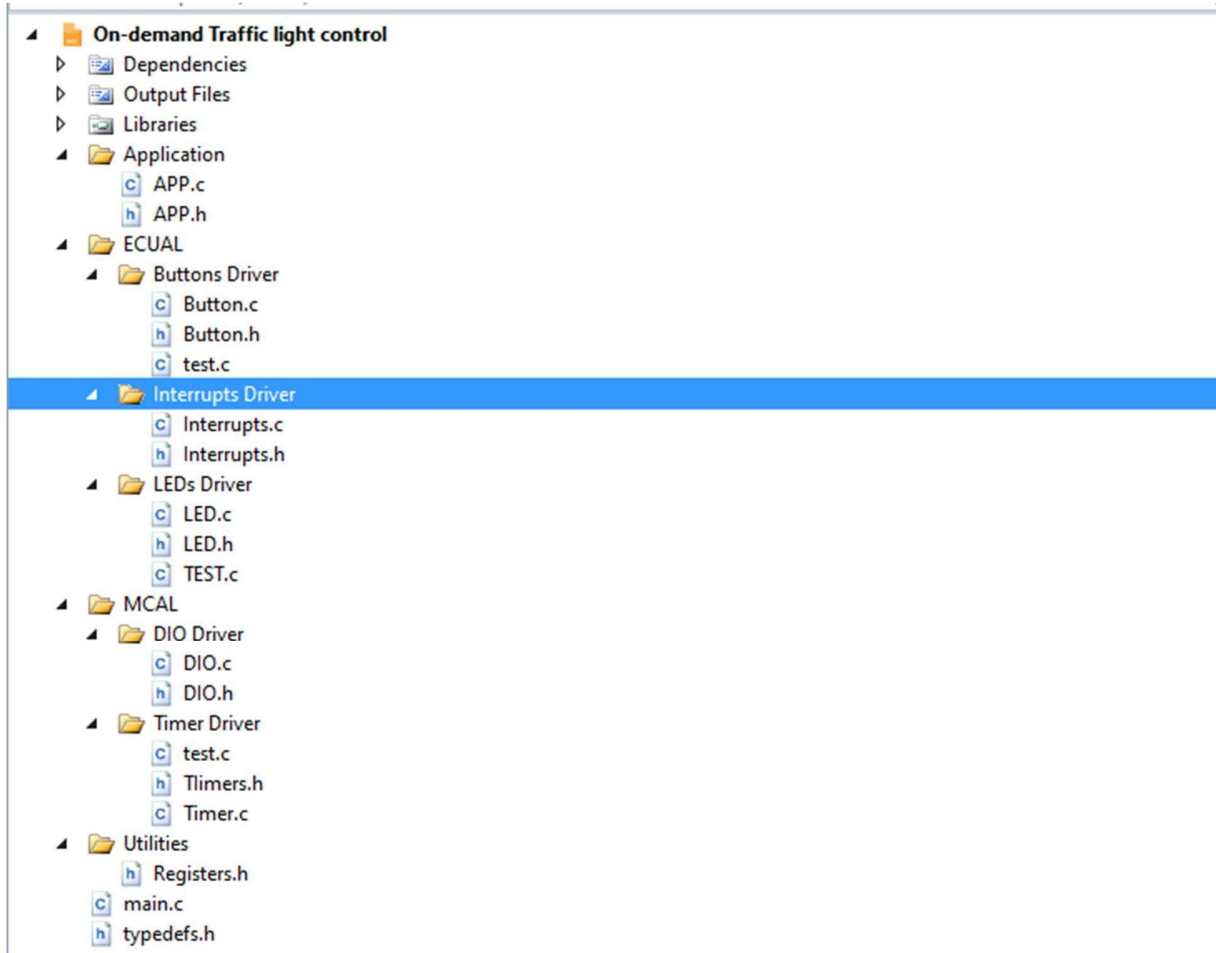
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Submitted to : Udacity reviewing team

System Description:

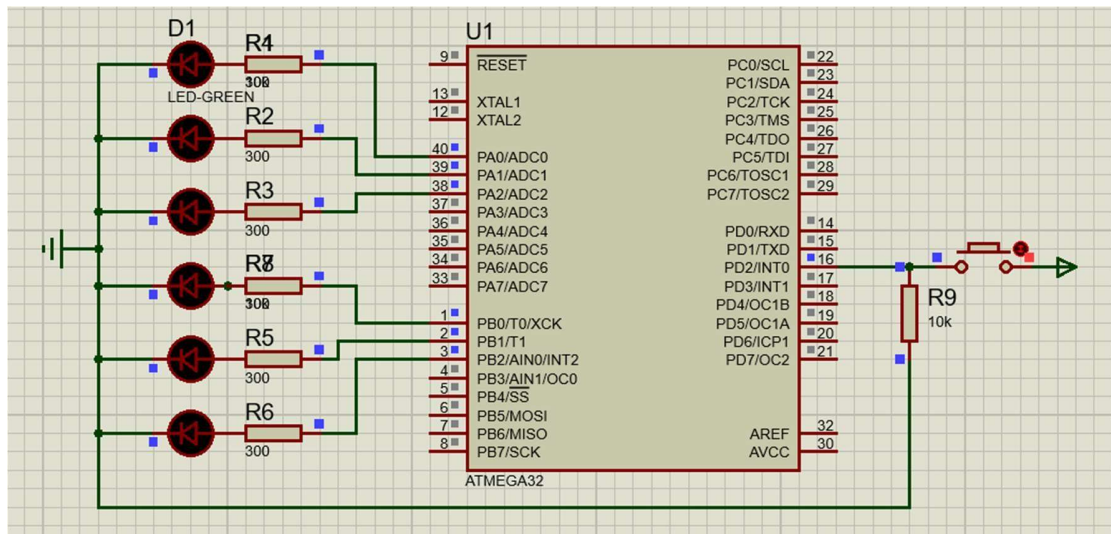
- The project name explains its main functions and uses as it should organize the traffic and control the traffic lights.
- The project organizes the pedestrian's movement beside the car's movement.
- The system had been designed to be articulate with its functions as it control life or death functions that should be built right.
- The system uses the ordinary three colors to set the road or the crosswalk status:
 - Red: it's not allowed to pass
 - Yellow: a warning that the status would be changed soon
 - Green: the road is opened
- The system uses an ordinary button to take the crosswalks request

System constrains:



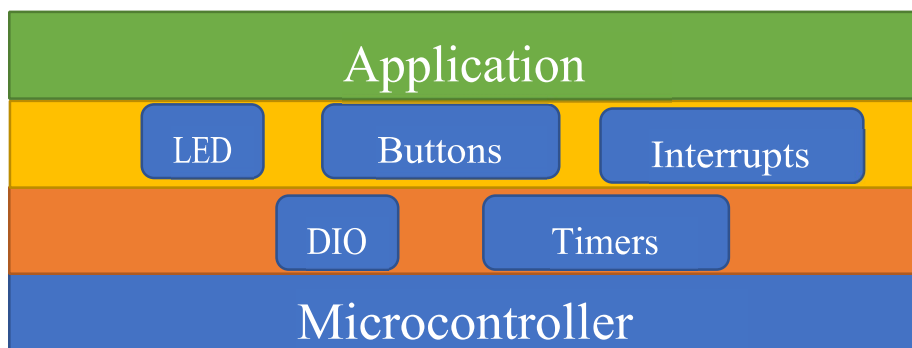
- As a pedestrian when I will make a short press on the crosswalk button while the cars green light is on and pedestrian red light is off, I will wait for the yellow lights to blink for five seconds then the cars red light is on and pedestrian green light is on for five seconds, so that I can cross the street
- As a pedestrian when I will make a short press on the crosswalk button while the cars yellow light is blinking and pedestrian red light is on, I will wait for all yellow lights to blink for five seconds then the cars red light is on and pedestrian green light is on for five seconds, so that I can cross the street
- As a pedestrian when I will make a short press on the crosswalk button while the cars red light is on and pedestrian green light is on, I expect nothing to be done
- As a pedestrian when I made a long press on the crosswalk button, I expect nothing to be done. [as the interrupt should detect the rising on the volt only]
- As a pedestrian when I made a double press on the crosswalk button, I expect that the first press will do the action and nothing to be done after the second press

System Design:



Component:

- Microcontroller ATmega32A
- 2 Green LEDs
- 2 Yellow LEDs
- 2 Red LEDs
- 6 (470ohm) resistors
- 10K ohm resistor
- Push button



Flow chart:

