Embedded Systems Professional Track

EgFWD-udacity

On-demand traffic light control

Project documentation

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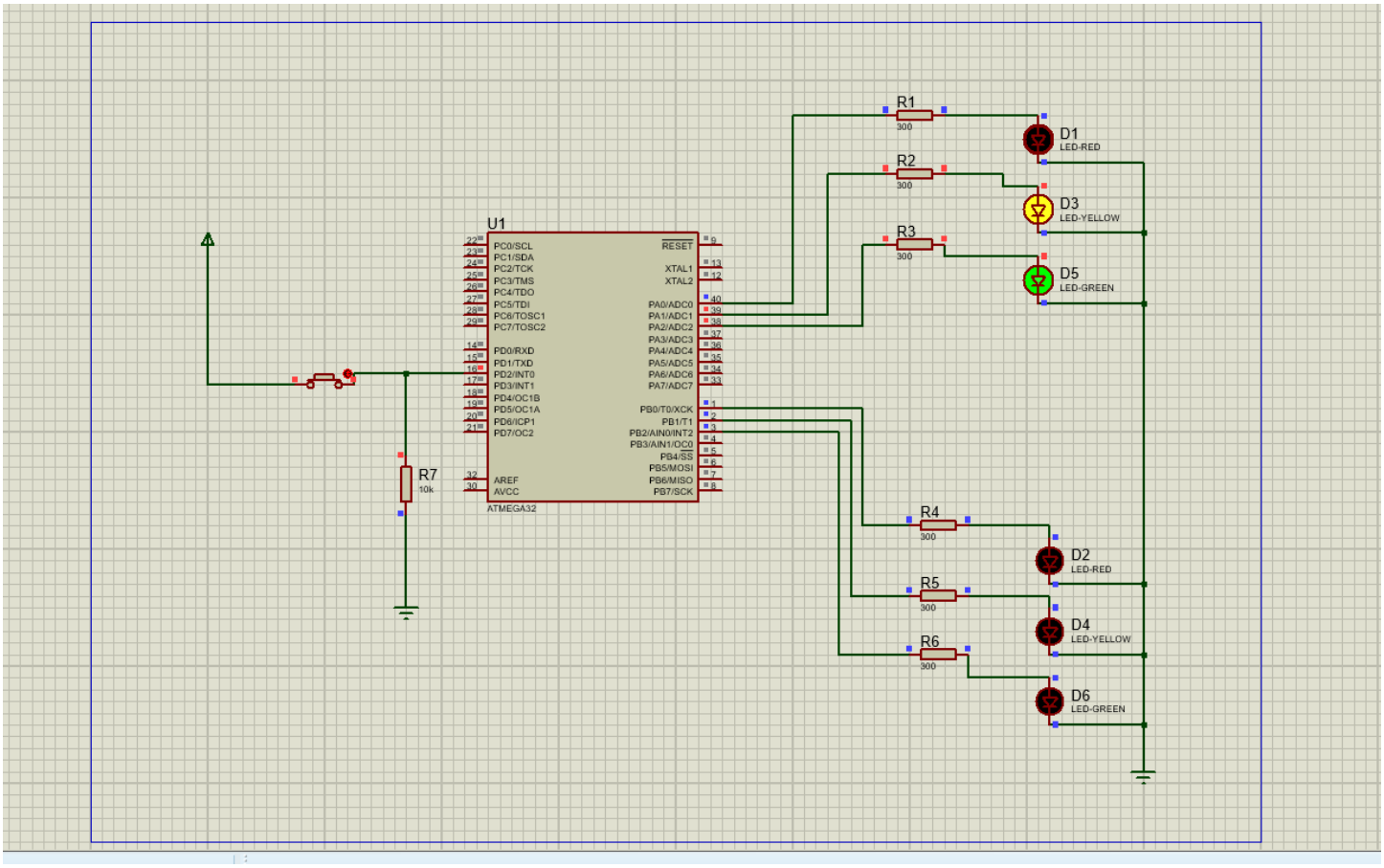
1- System description

1.1- System overview

The system is on demand traffic control which acts as a traffic light control system and has a button to allow pedestrian to pass making sure that there are no cars coming.



1.2- System functionality

The system can detect whether the button is pressed or not. Based on current state it decides what to do. If the button is pressed it allows the pedestrian to walk by making sure cars are stopped first.

It all is shown in the flowchart

2- System design

2.1- System components

The system consists of:

- AVR Atmega 32
- 2 red LEDs
- 2 yellow LEDs
- 2 green LEDs
- 6 300-ohm resistors
- 1 10k-ohm resistors
- 1 push button

2.2- Operating environment

The program has been written on microchip studio and tested on proteus simulator.

In real life the system should be applied on streets and enabling pedestrian button to allow for full system functionality.

2.3-Input & Output formats

The system has one input from the pedestrian push button. The output handles 6 LEDs at once given the current state, time and the state of the push button.

3-Flowchart