



American International University- Bangladesh

Department of Electrical and Electronic Engineering

EEE 4103: Microprocessor and Embedded Systems Laboratory

Title: Familiarization with Visual Designer for Arduino™ AVR and Raspberry Pi and implementation of a traffic control system using Drag - Drop - Play.

Introduction:

The objective of this experiment is to get familiarized with Proteus Visual Designer.

Learning to make embedded system using Drag - Drop – Play method.

Implementation of a traffic control system using Drag - Drop – Play method.

Theory and Methodology:

What is Proteus Visual Designer?

Proteus Visual Designer combines world class Proteus VSM simulation with an easy to use flowchart editor and a gallery of virtual hardware to provide a truly integrated and intuitive development environment for Arduino and Raspberry Pi.

The peripheral gallery makes hardware design easy. Simply add a shield or sensor from the gallery and Visual Designer will automatically place the correct circuitry on the Proteus schematic for you and add some simple methods to Visual Designer that allow you to control the hardware.

The software is then designed as a flowchart so you can easily drag and drop these methods along with decisions, delays and assignments to drive the hardware.

Compile and simulate at the press of the button, making use of our renowned simulation and debugging technology to watch your design come to life on screen.

Finally, transfer to the physical hardware with a single mouse click and see it working first time in the real world.

- Peripheral Gallery full of ready-made Arduino™ Shields or Raspberry Pi Hats.
- Drag and Drop Programming with Flowcharts.
- World Class System Level Simulation, Measurement and Debugging.
- Program the equivalent hardware at the press of a button.

Visit the following link for more information :

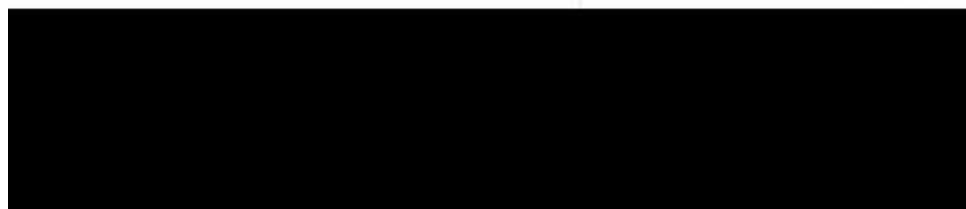
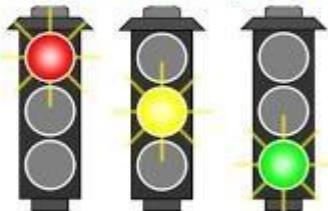
<https://www.labcenter.com/visualdesigner/>

Visual design procedure of Traffic Light System



Codeless Design

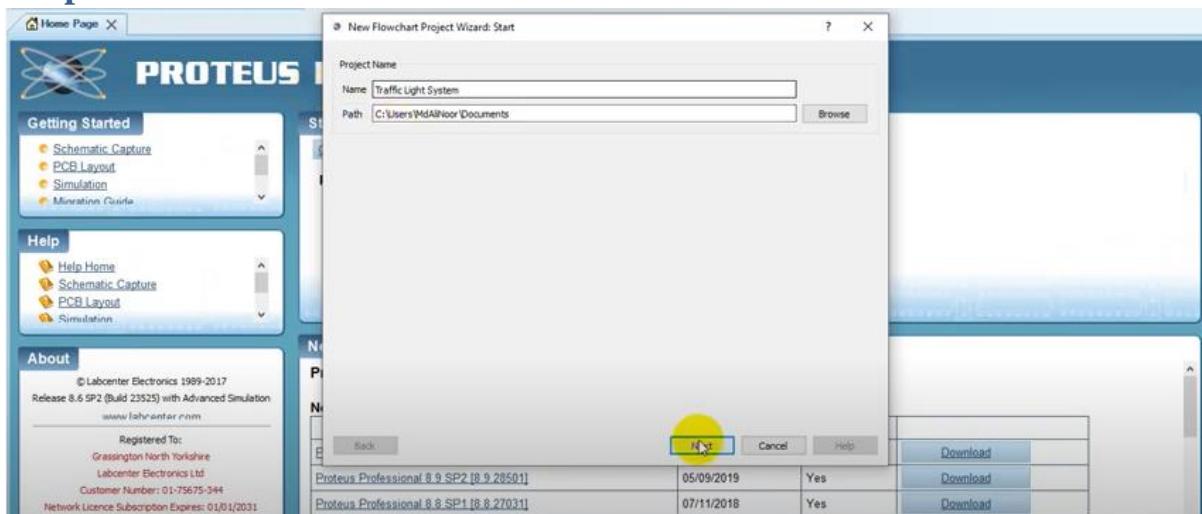
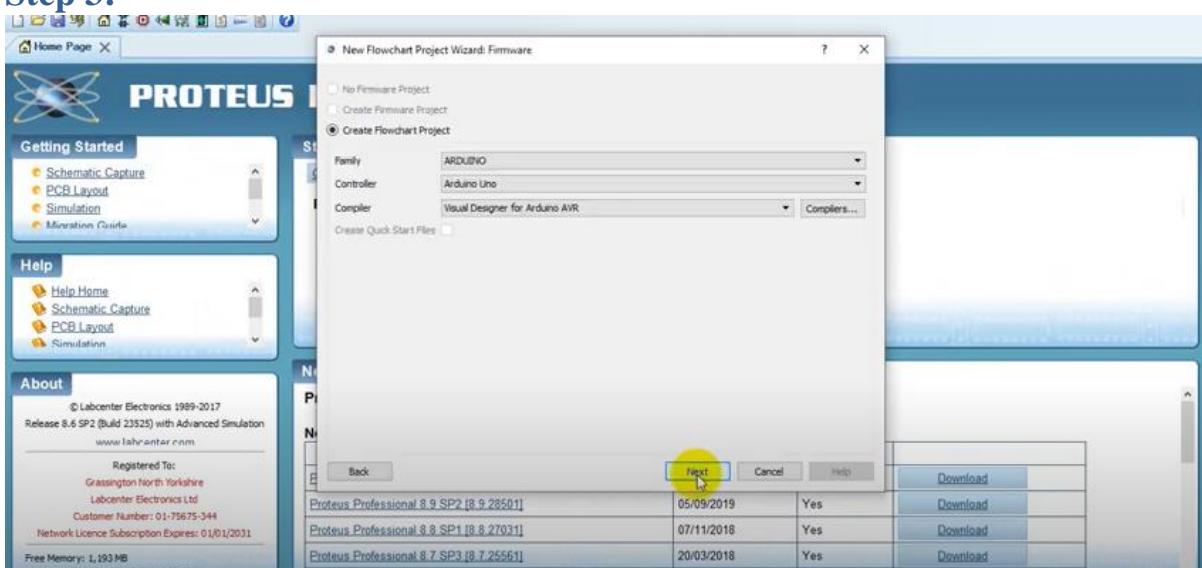
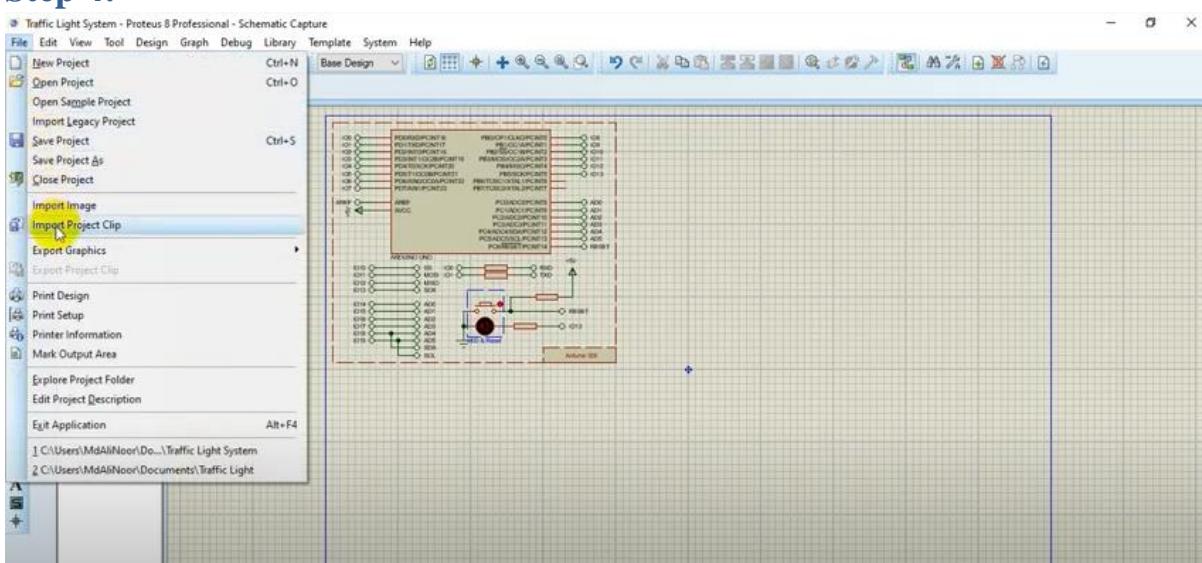
Traffic Light System

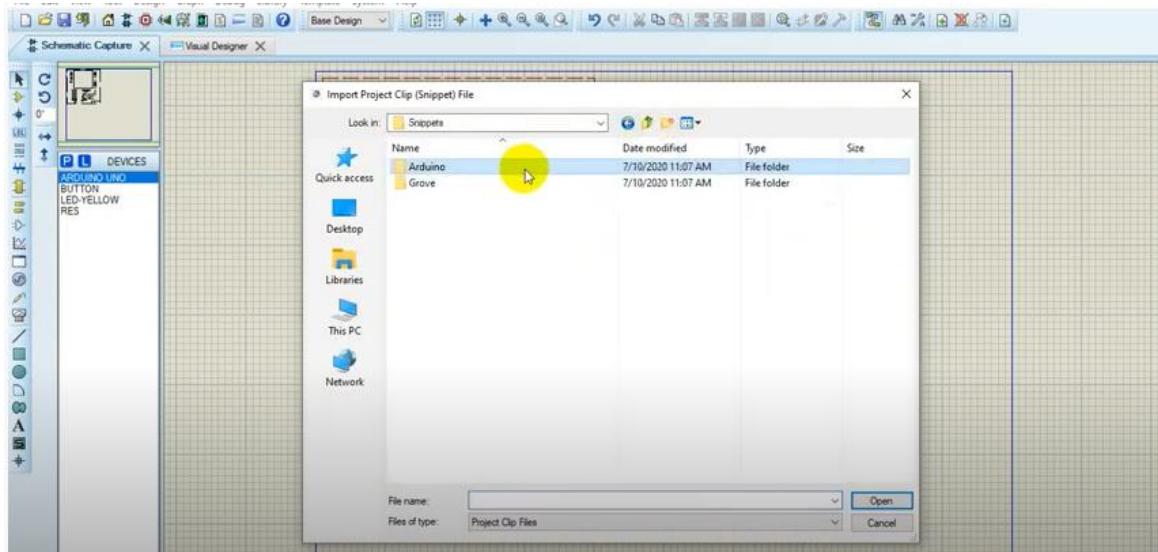
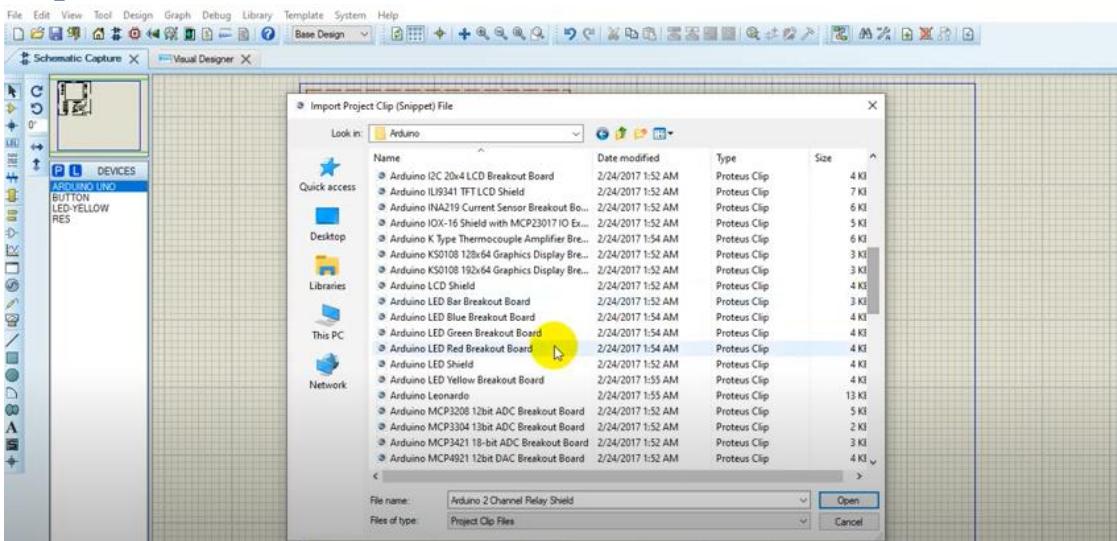
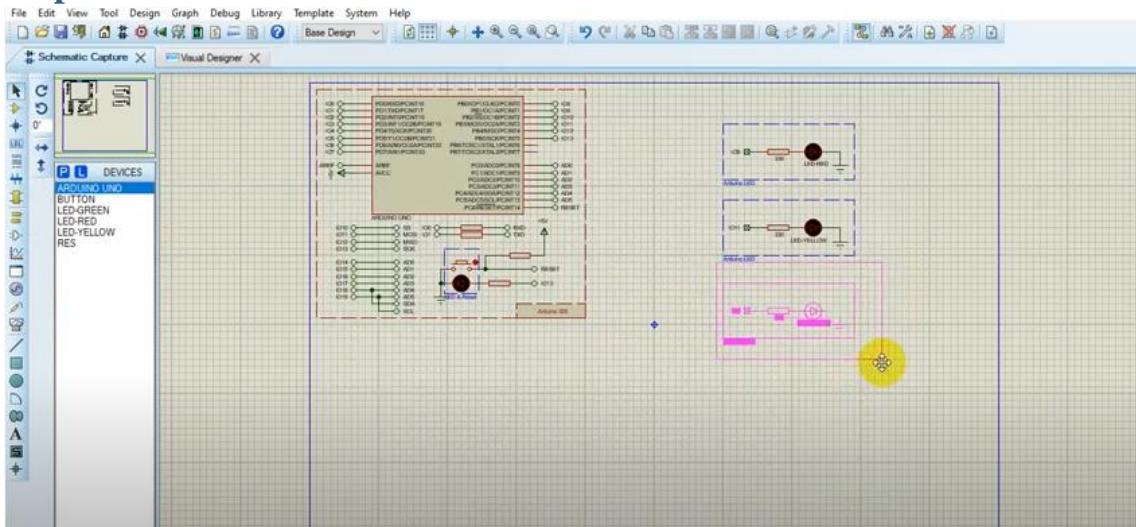


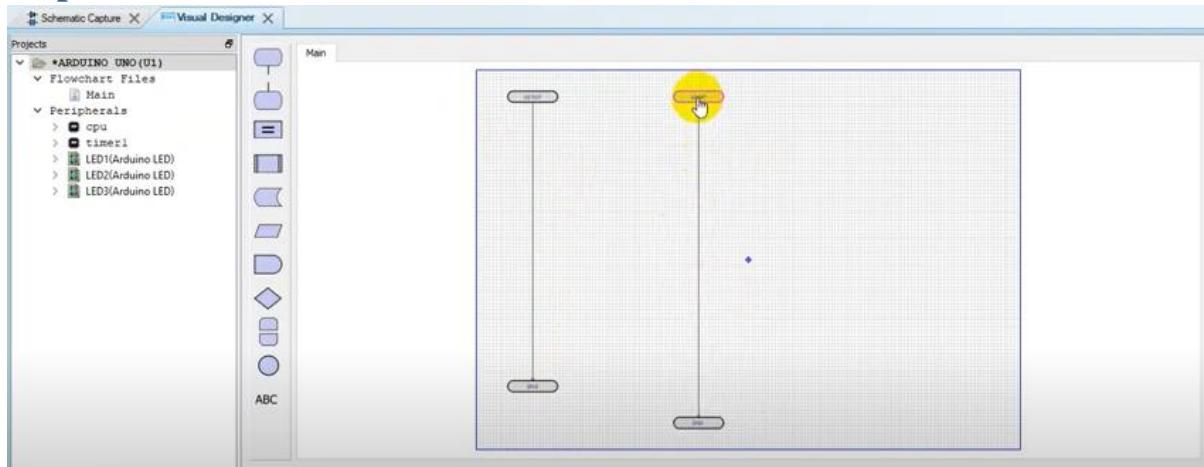
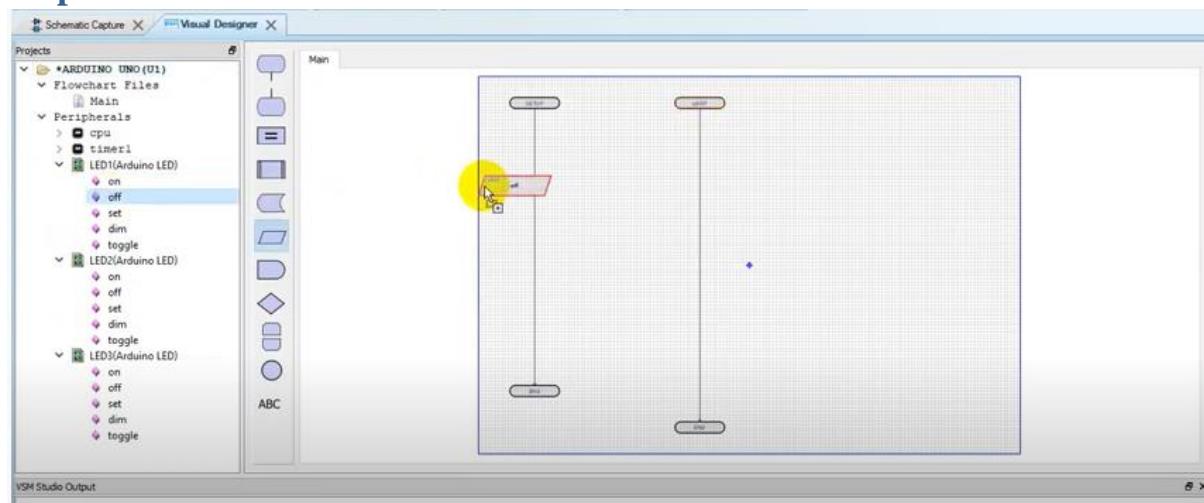
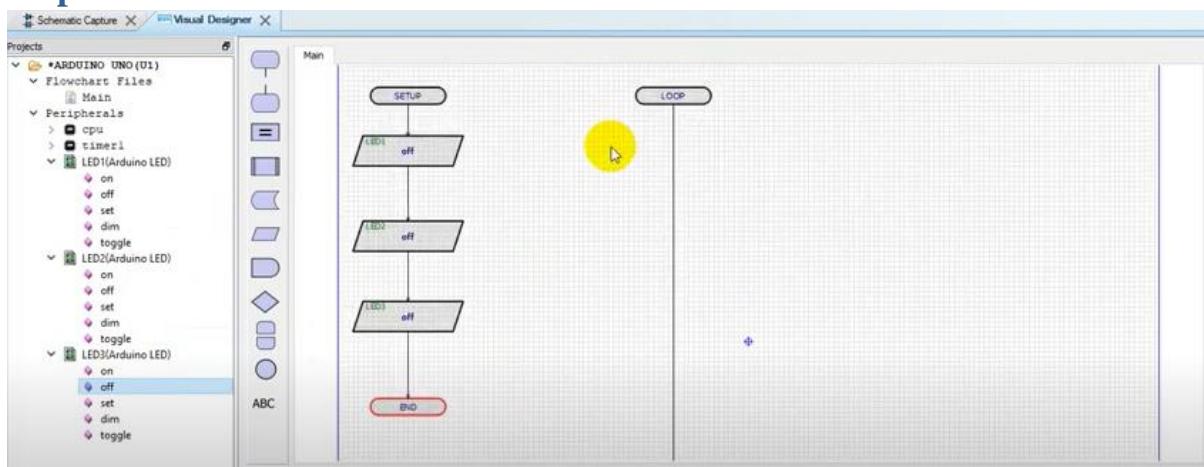
~~X~~ **Simulation design:** → Insert screenshot of schematic
capture (when any one LED is ON)
and screenshot of flowchart.

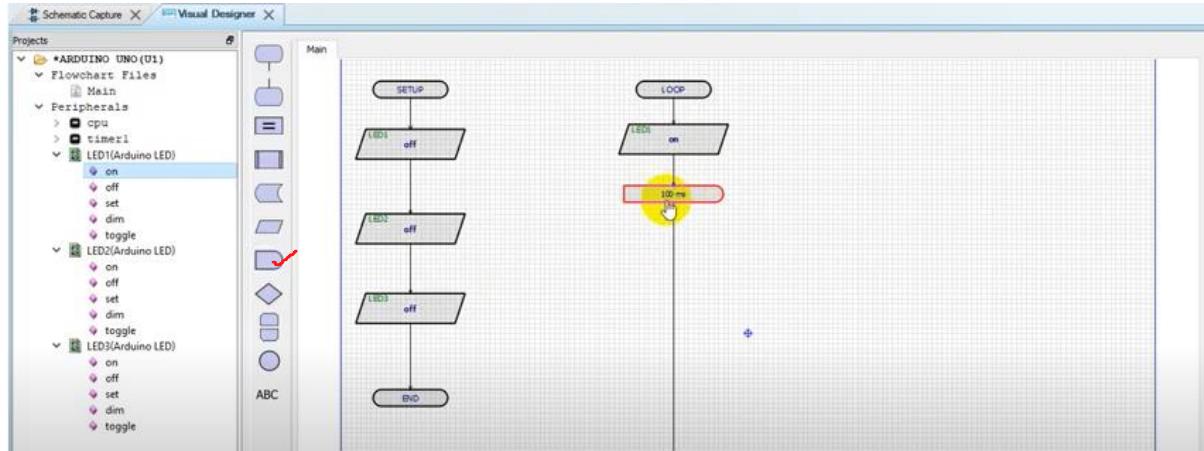
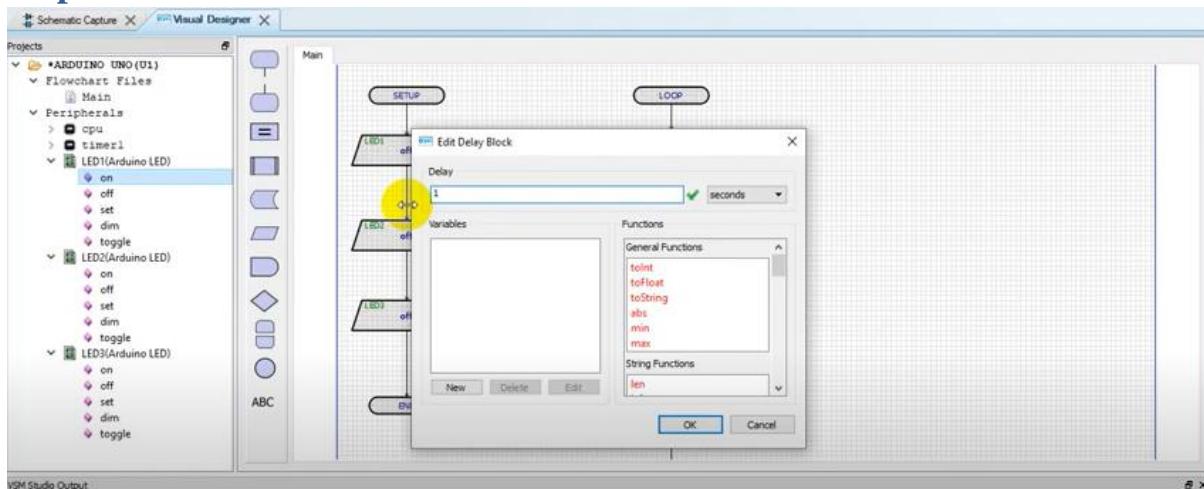
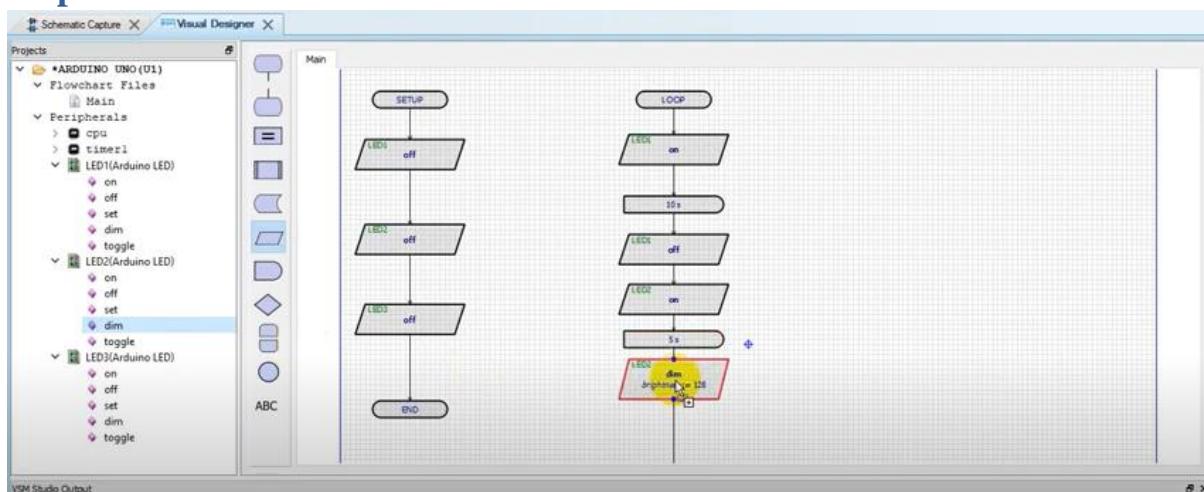
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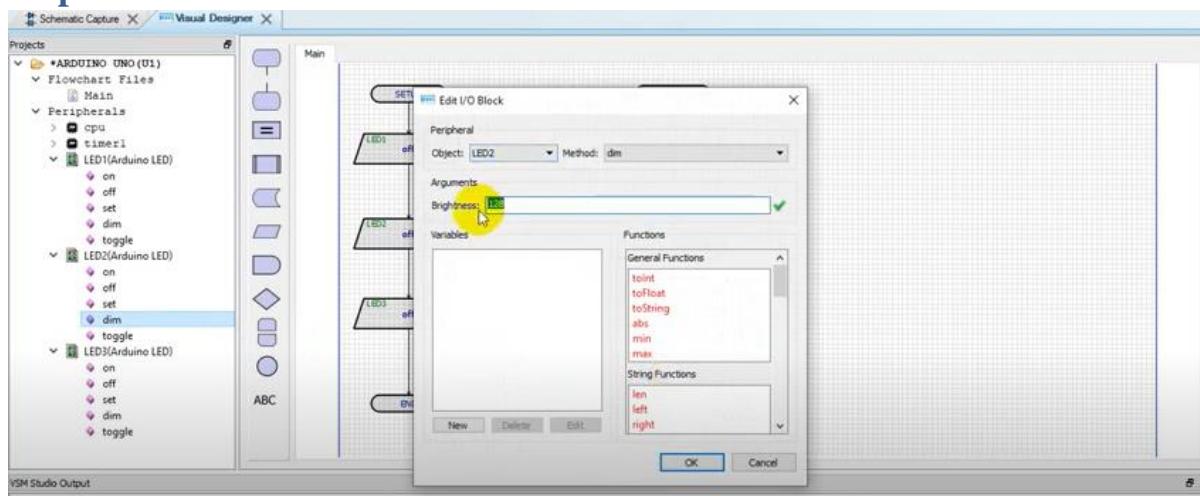
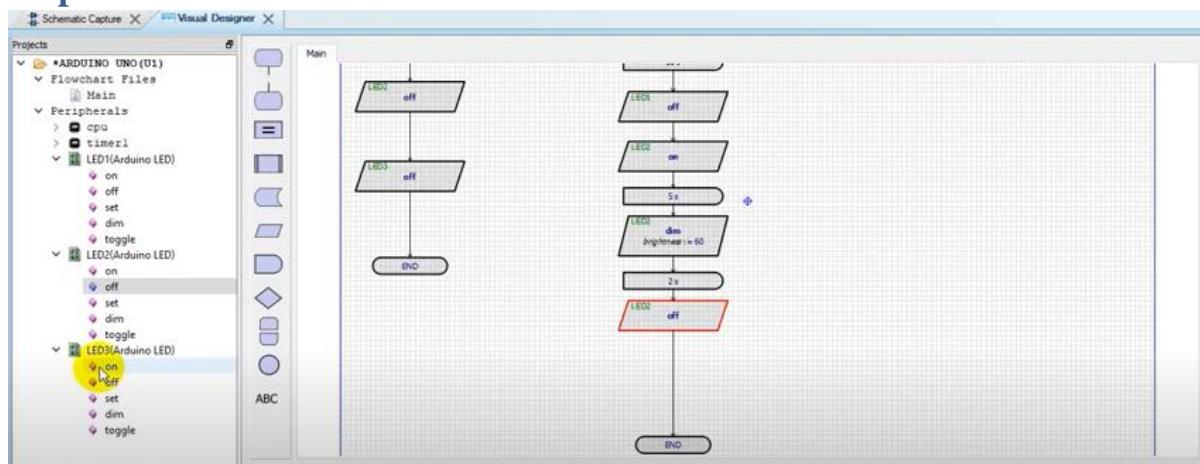
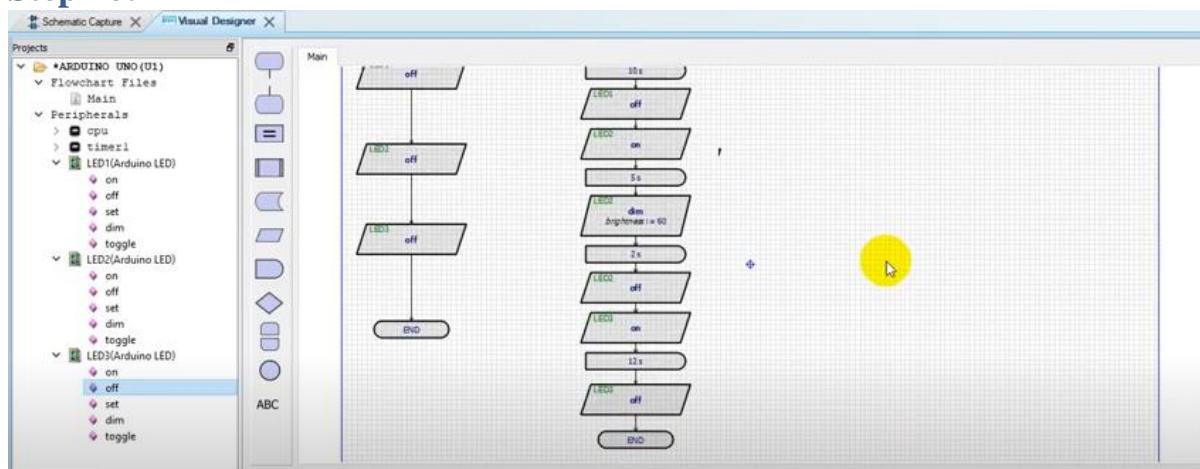
Description	Release Date	USC Valid	Download
Proteus Professional 8.10 SP3 [8.10.29560]	18/05/2020	Yes	Download
Proteus Professional 8.9 SP2 [8.9.28501]	05/09/2019	Yes	Download
Proteus Professional 8.8 SP1 [8.8.27031]	07/11/2018	Yes	Download
Proteus Professional 8.7 SP3 [8.7.25561]	20/03/2018	Yes	Download
Proteus Professional 8.6 SP3 [8.6.23160]	24/07/2017	Yes	Download

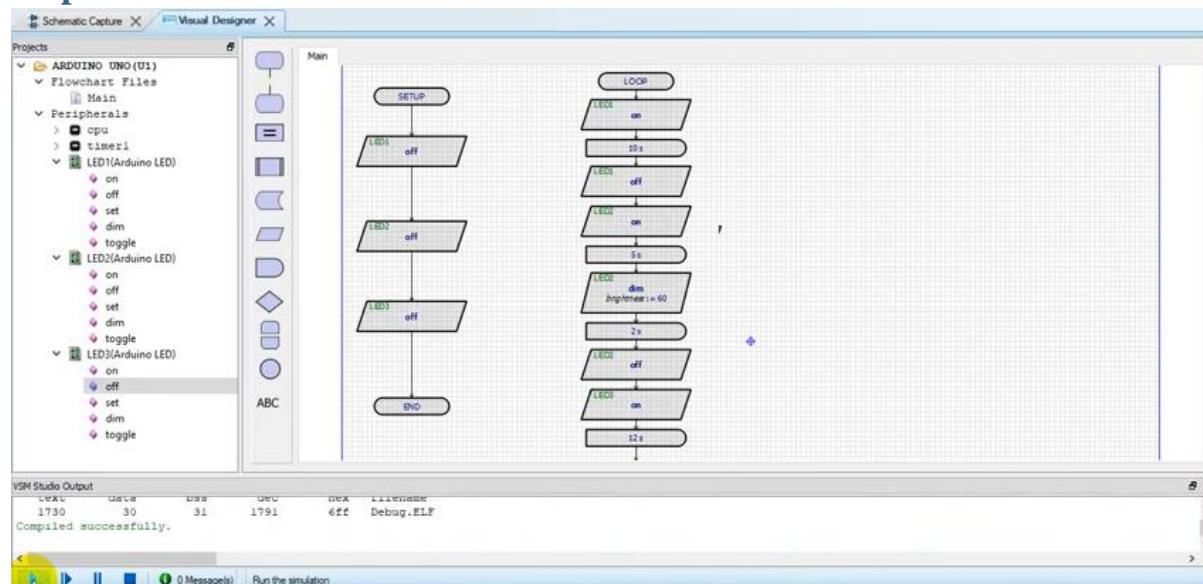
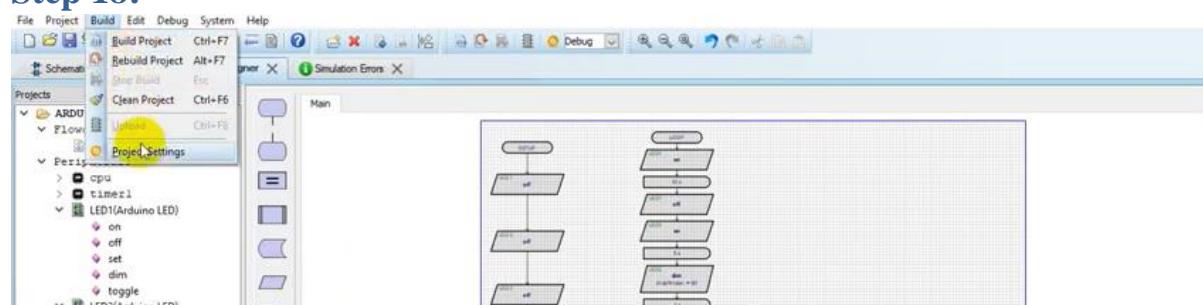
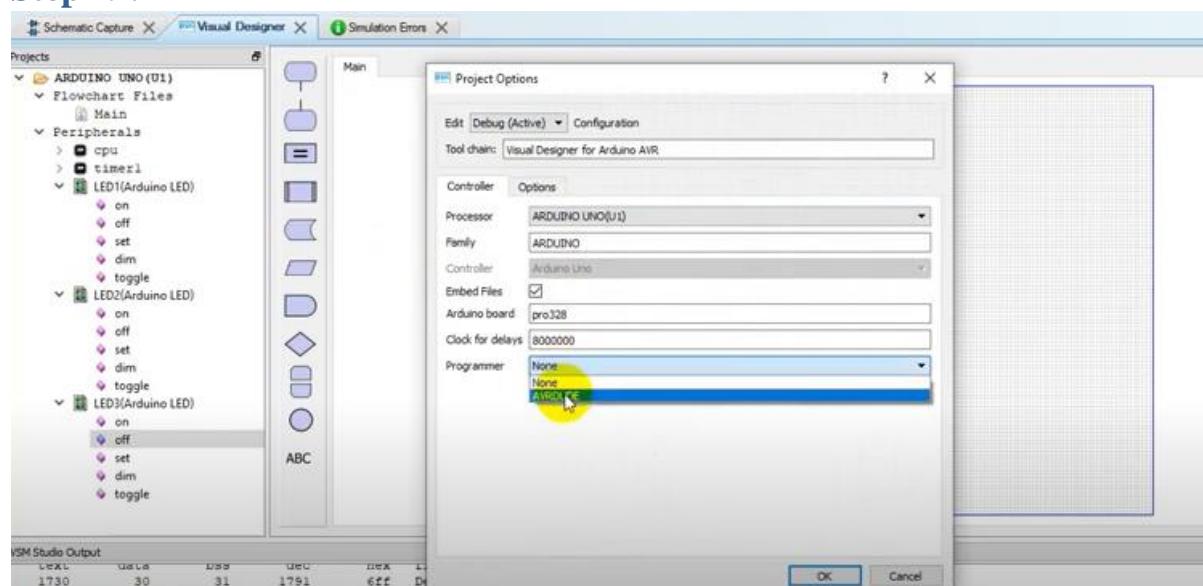
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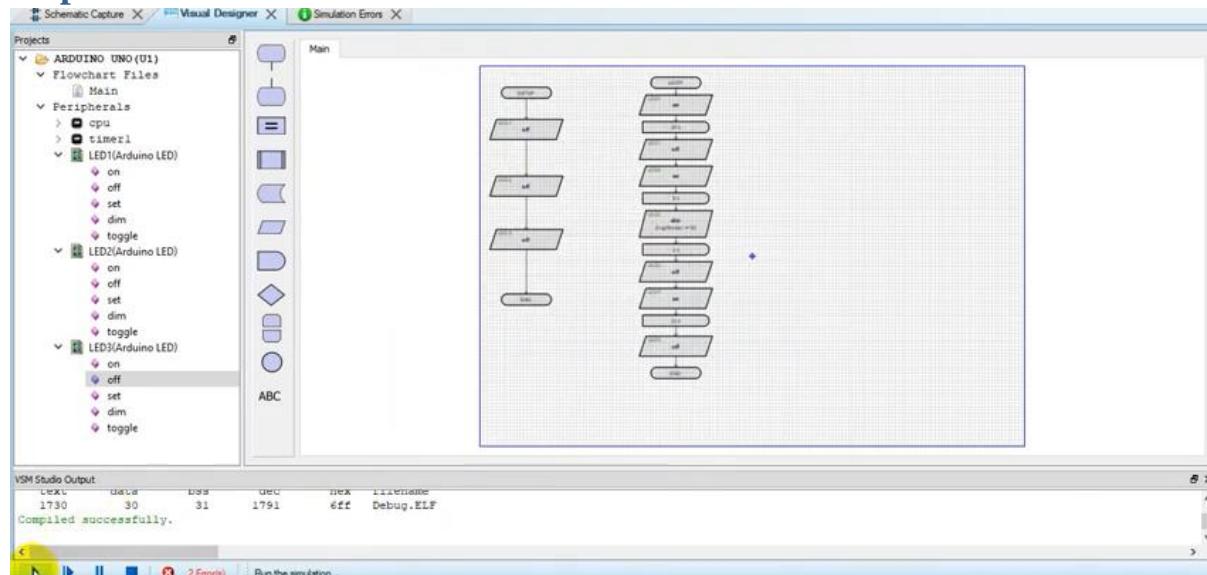
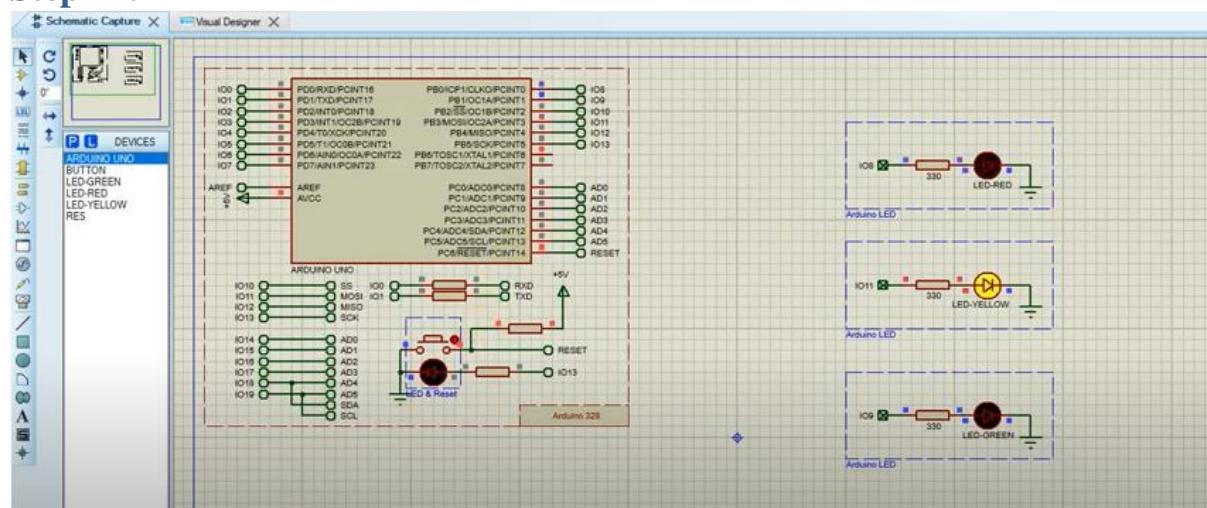
Step 5:**Step 6:****Step 7:**

Step 8:**Step 9:****Step 10:**

Step 11:**Step 12:****Step 13:**

Step 14:**Step 15:****Step 16:**

Step 17:**Step 18:****Step 19:**

Step 20:**Step 21:****Questions for report writing:**

Discussion: 3-4 liner discussing the result as a whole

- 1) Modify the design for Two Way Traffic Light System

X Reference(s):

- 1) <https://www.arduino.cc/>.
- 2) <https://www.labcenter.com/visualdesigner/>
- 3) <https://youtu.be/yHB5it0s2oU>