



HOME AUTOMATION USING PLC

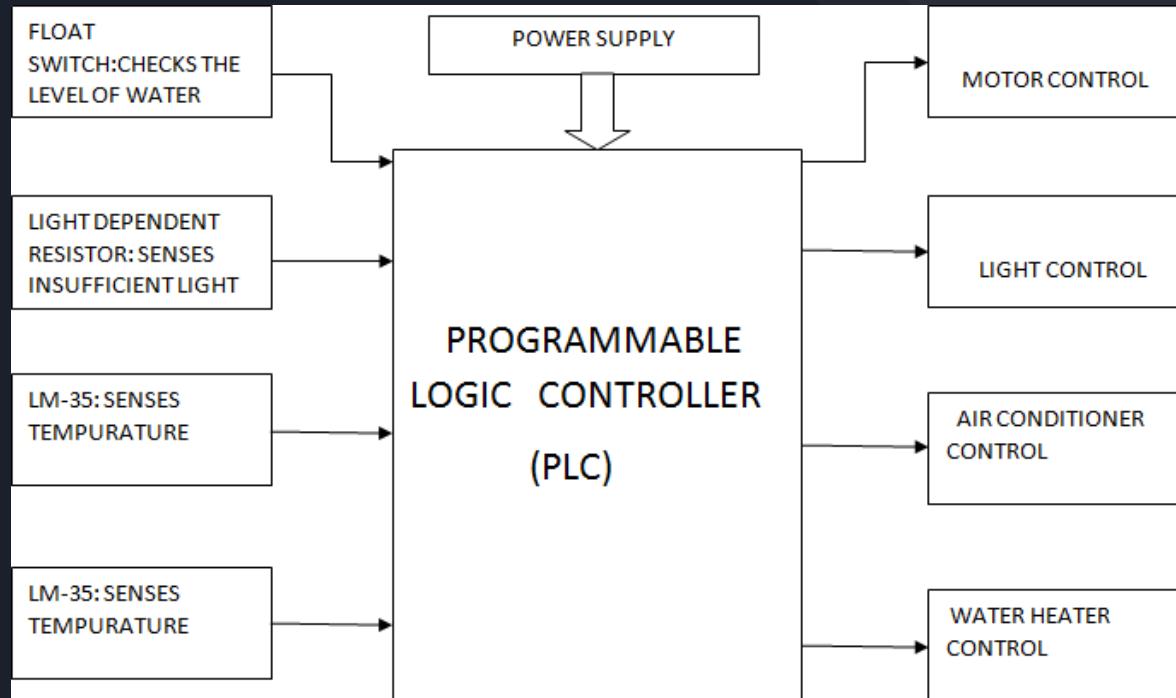
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What is Concept of Home Automation?

- Imagine you forgot to turn the lights OFF once you leave the house or want to turn ON the Air conditioner before getting home so that you can enjoy the precooled environment.
- These things can only be possible through home automation and that's why for user convenience and comfort it is used nowadays in modern homes.



How PLC is used in Home Automation.



Why PLC for Home Automation?

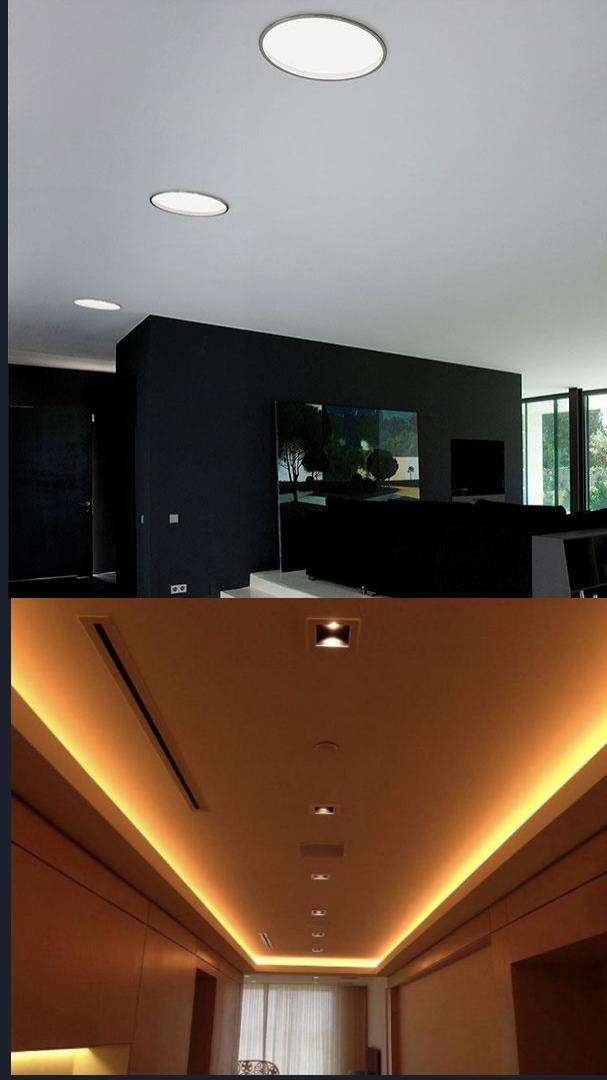
- Though there are many products for home automation in the market but here in the project PLC is used because;
- Programming complexity is less and it is easier to program.
- The number of inputs are more.
- Reliability, durability, and flexibility are some other advantages of PLC used in this project.



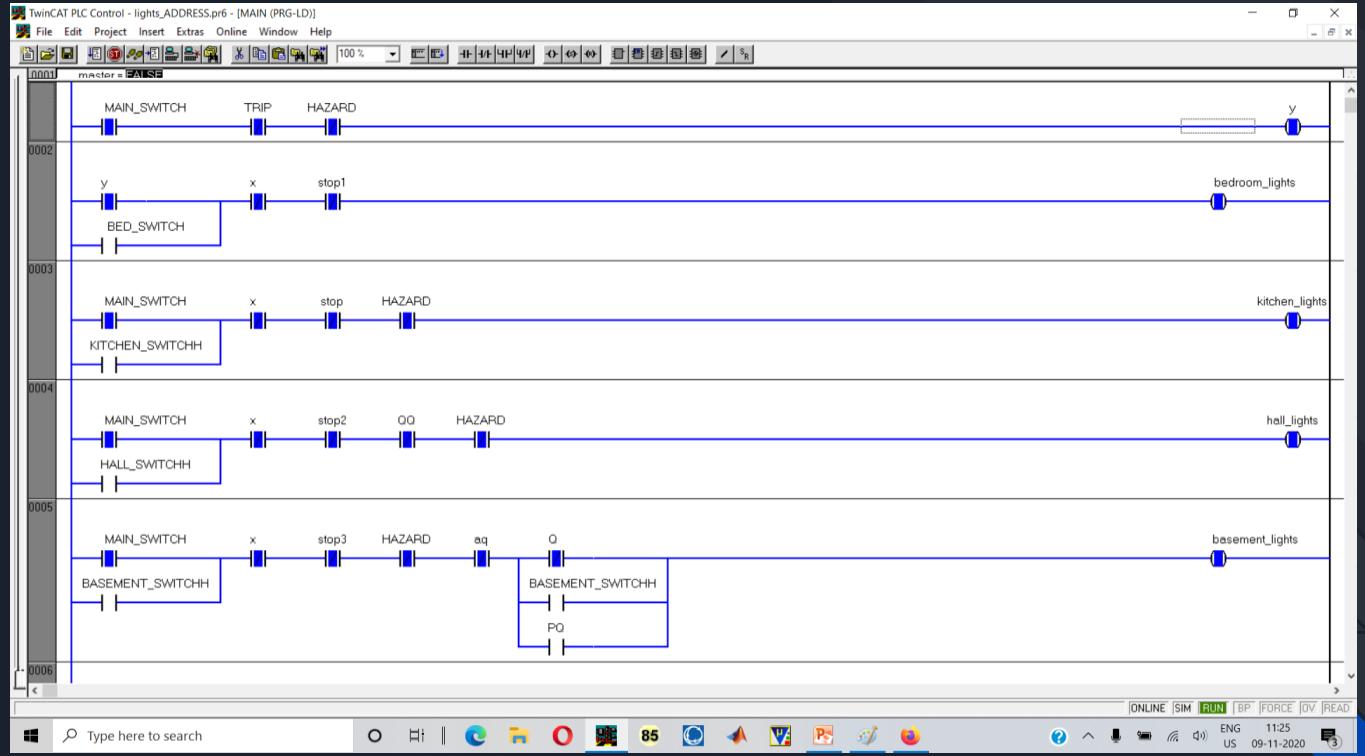
Overview of the Project.

1. Bedroom
2. Hall
3. Kitchen
4. Basement

- All Contains 4 Ceiling Lights and 4 Strip lights on every side of ceiling as illustrated in the Fig. Respectively.
- As the master Switch is pressed all the Strip Lights will be ON and individual switch control is also given.

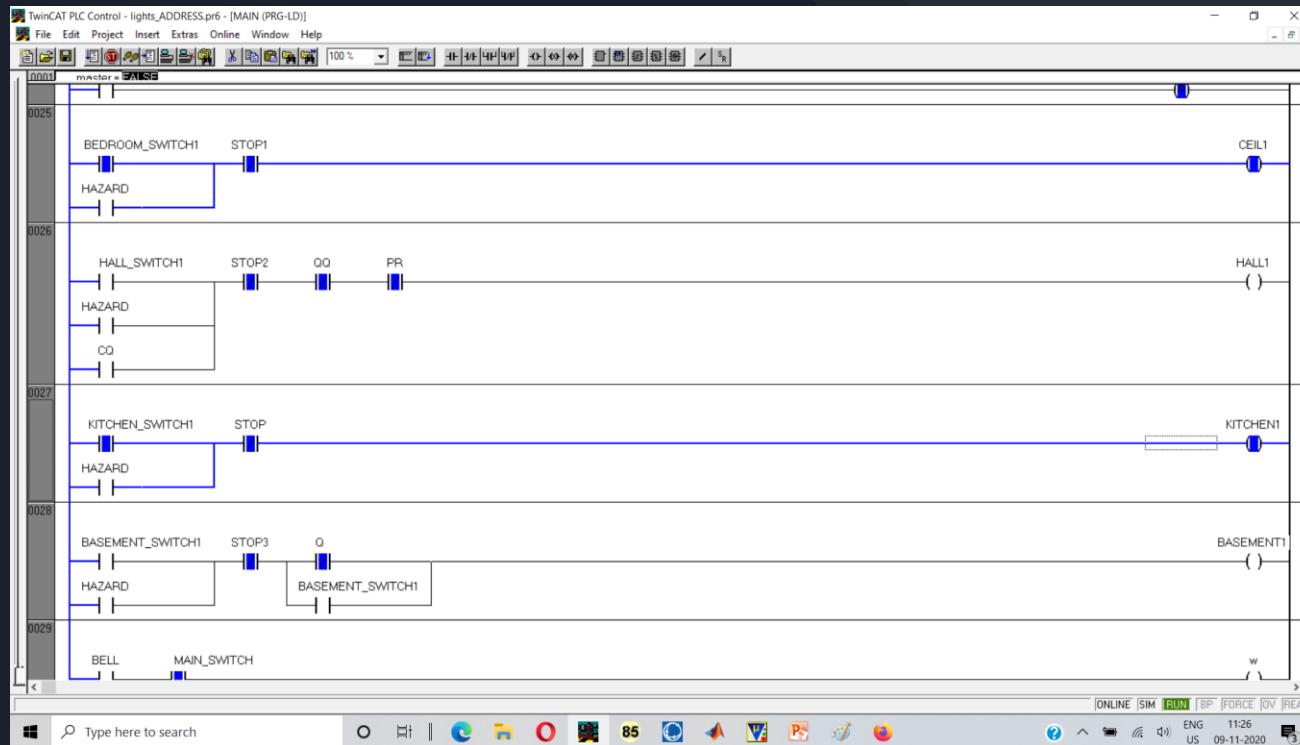


Ladder Diagram



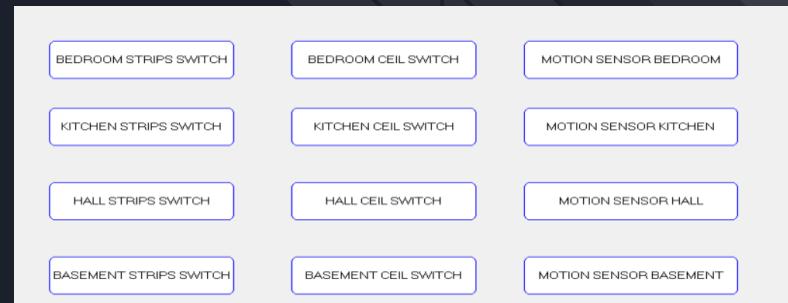
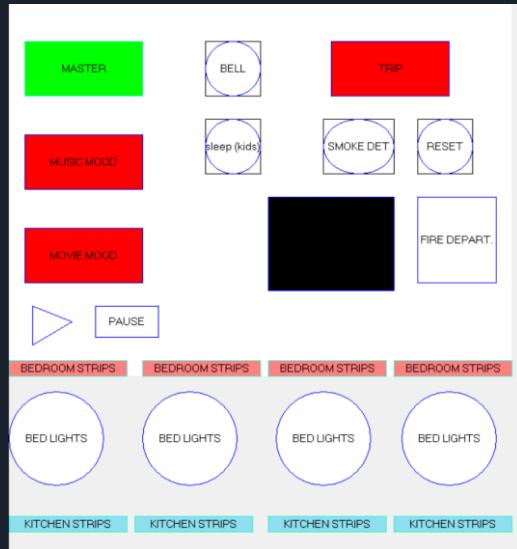
Strip lights Control

Ladder Diagram



Ceiling Lights Control

Visualization

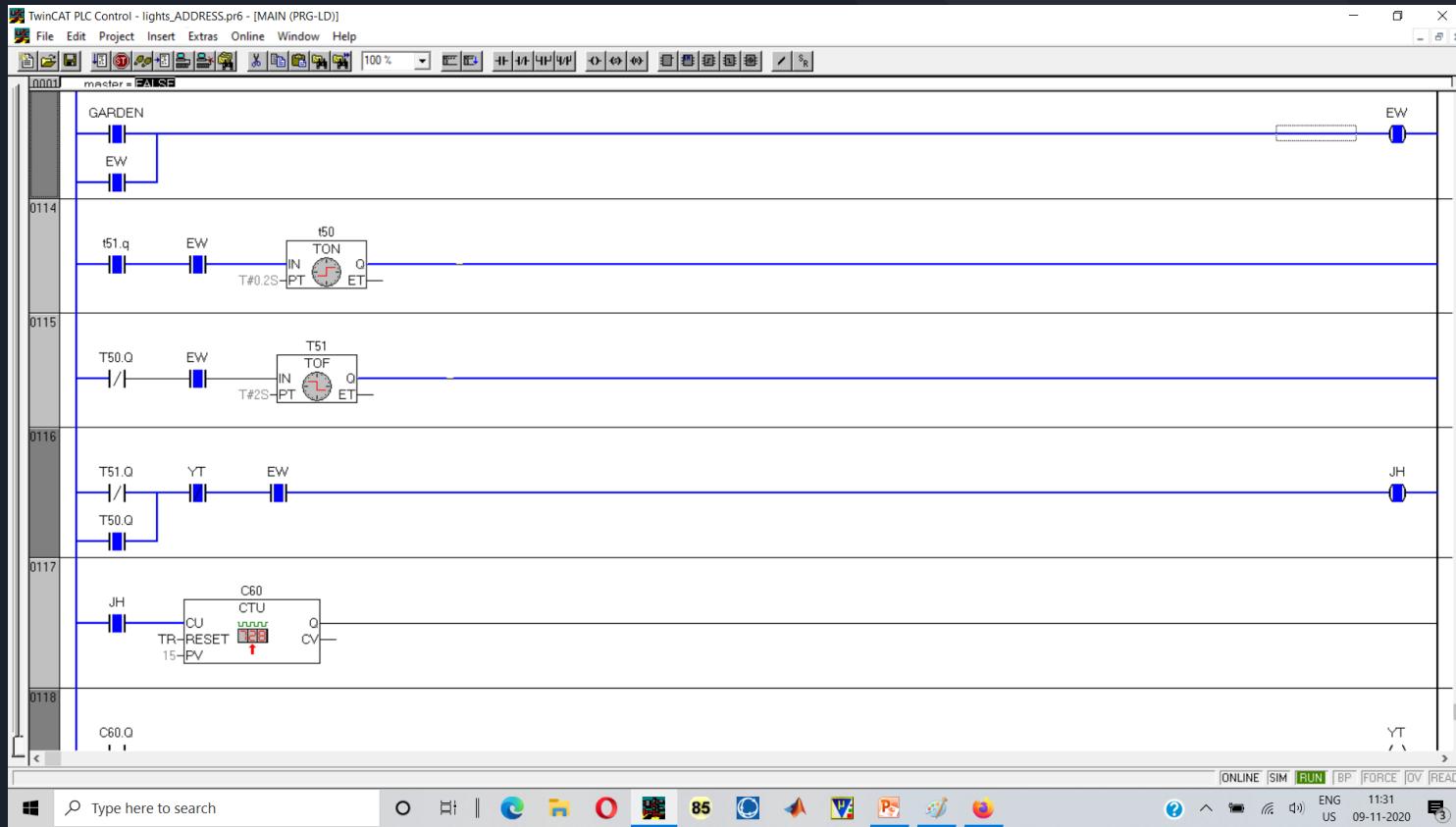


5. Water Sprinklers in Garden

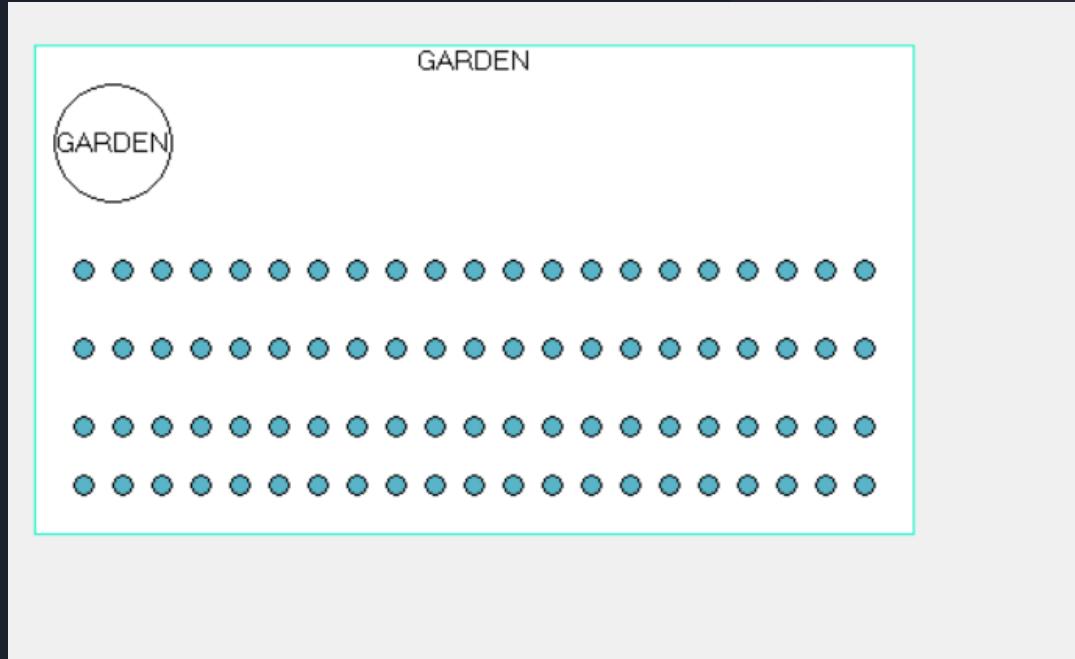
- When the switch is pressed the water sprinklers in the garden will release water at a certain interval of time for some designated minutes or for particular count to save water.



Ladder Diagram



Visualization

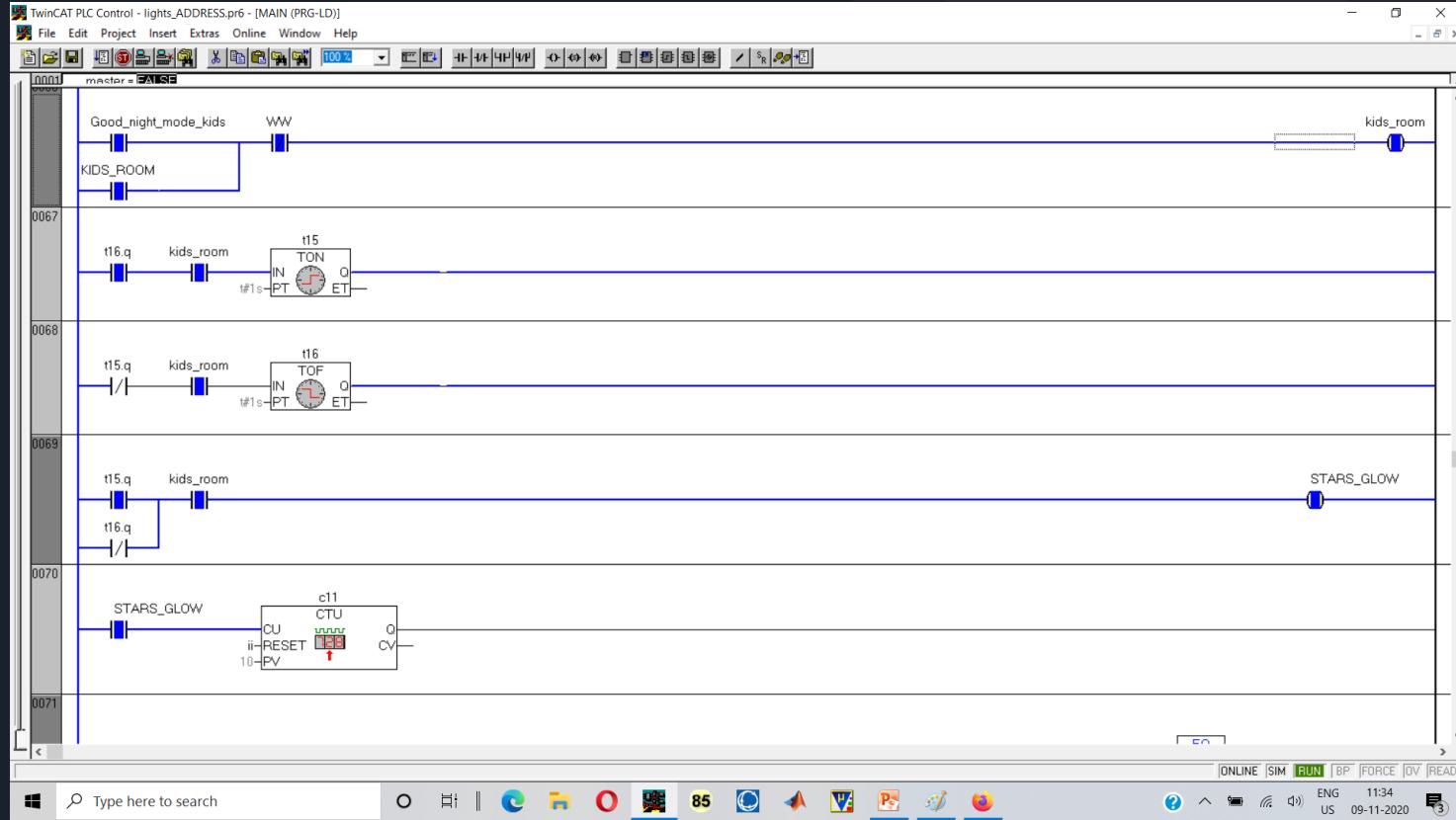


6. Warning sign to sleep for kids Room

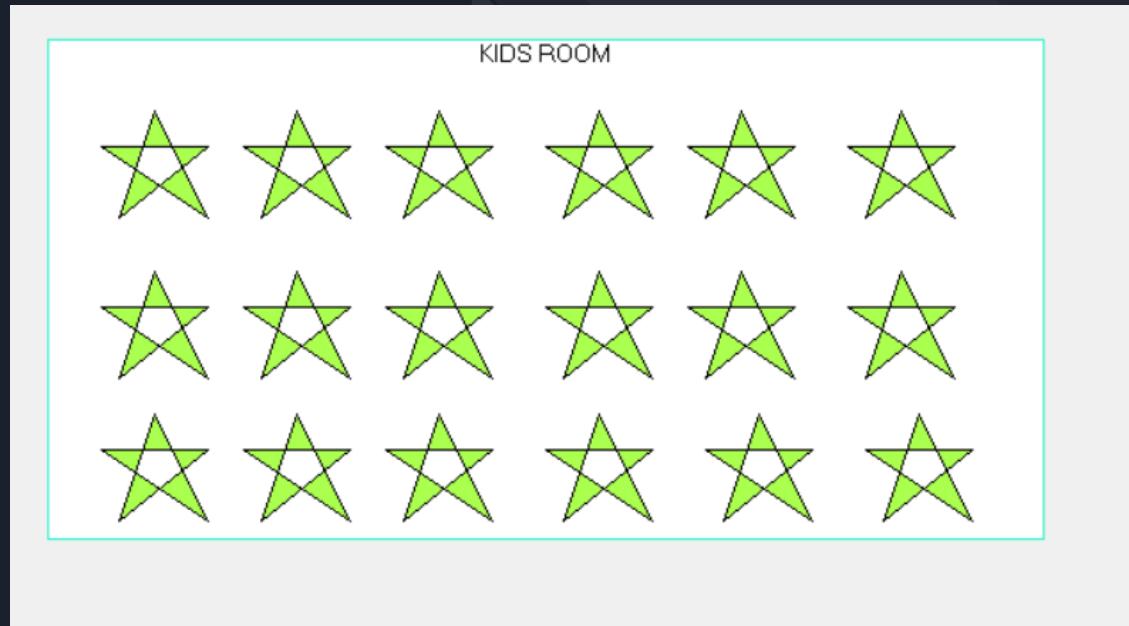
- When this Mode is ON the stars will blink for 4 times to show as a sign for the kids to sleep if they are engaged in playing games or watching TV.



Ladder Diagram



Visualization

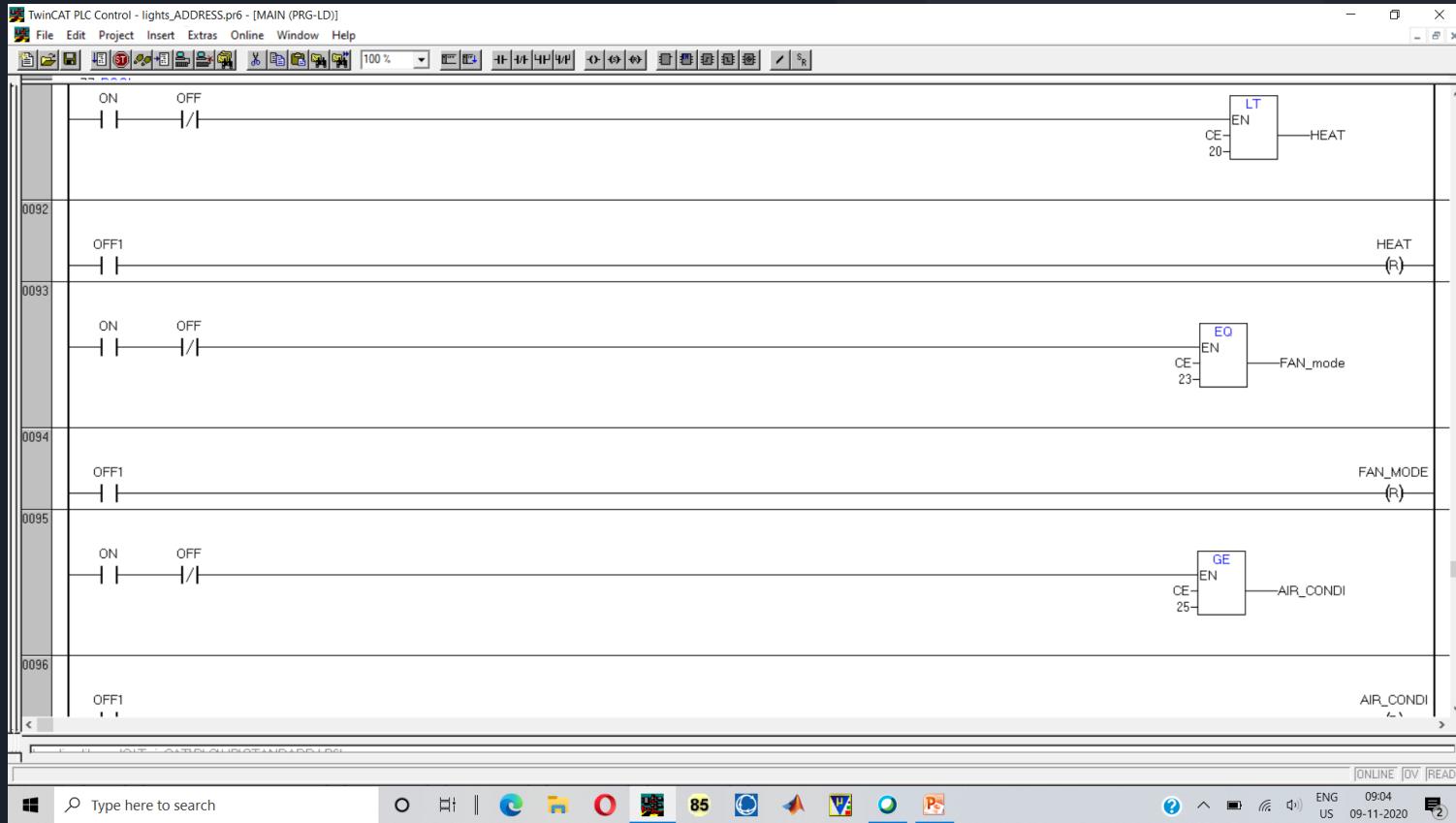


7. Smart Temperature control

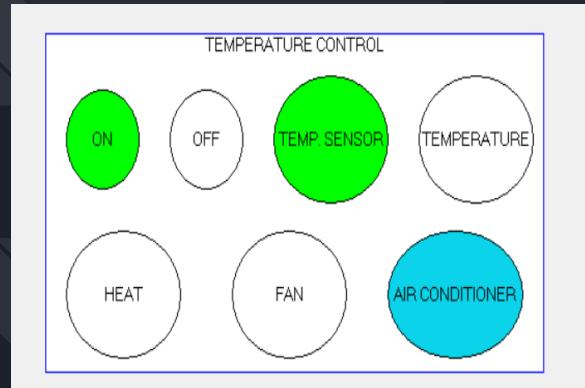
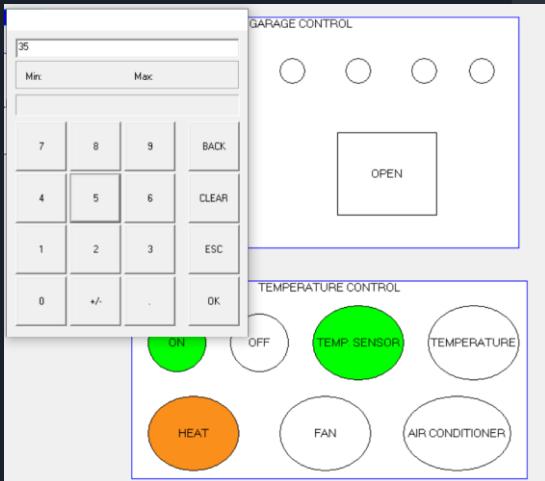
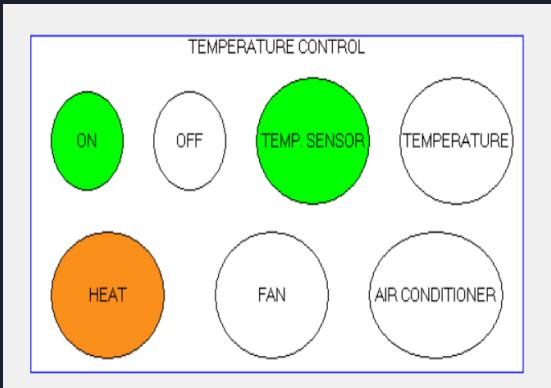
- According to the temperature outside the home the sensor will sense and this thermostat will vary the temperature inside the home as set or preferred by the user automatically.



Ladder Diagram



Visualization

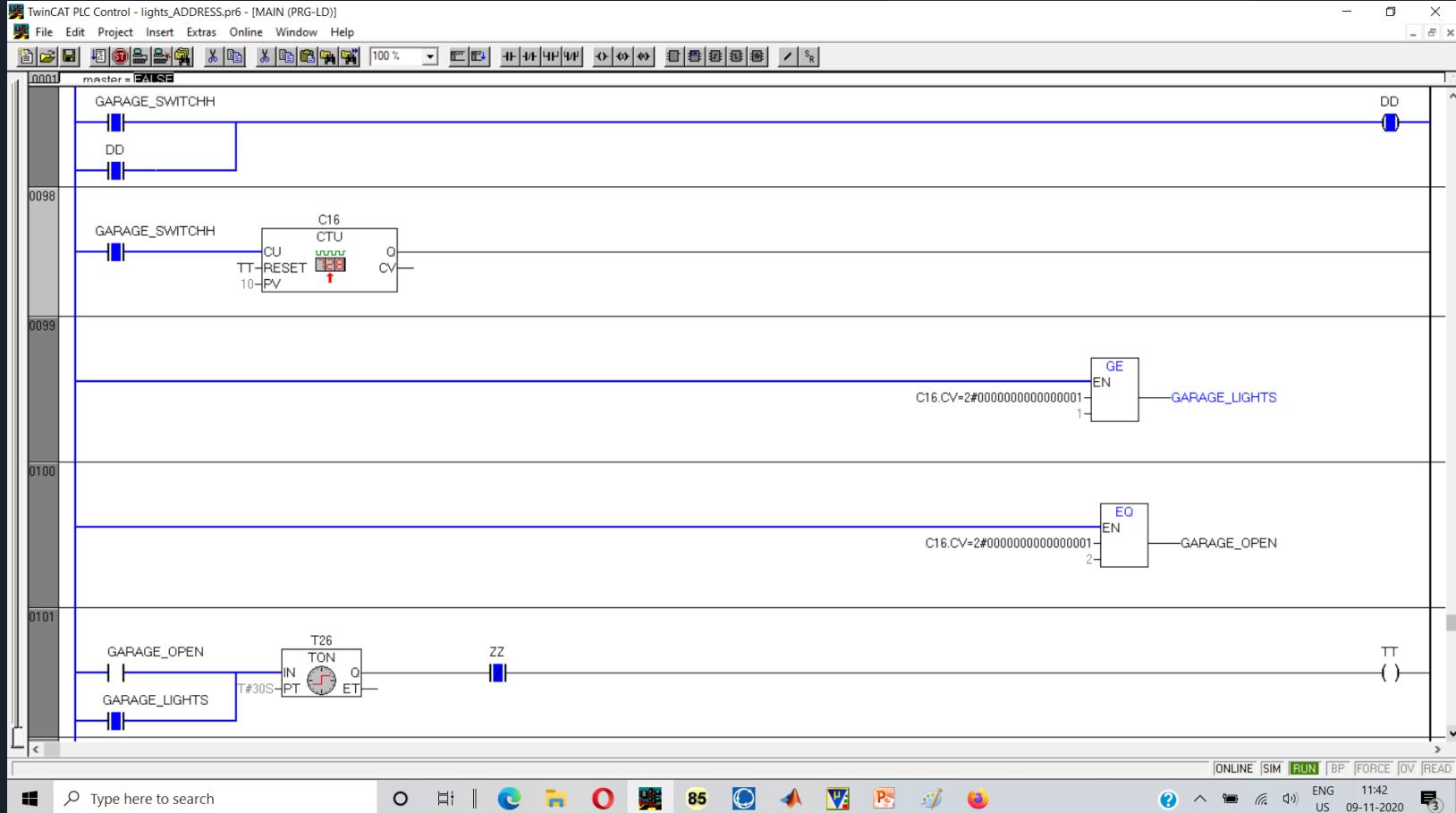


8. Smart Garage Control

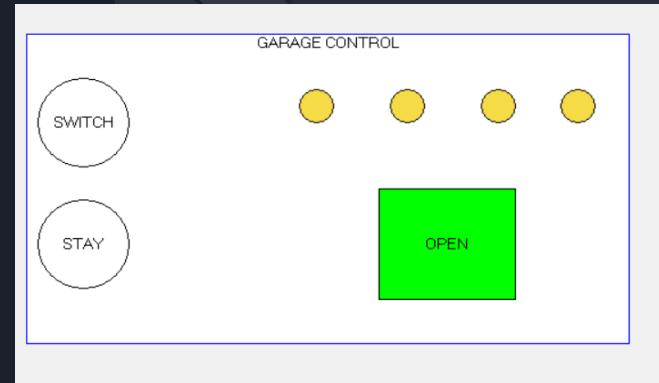
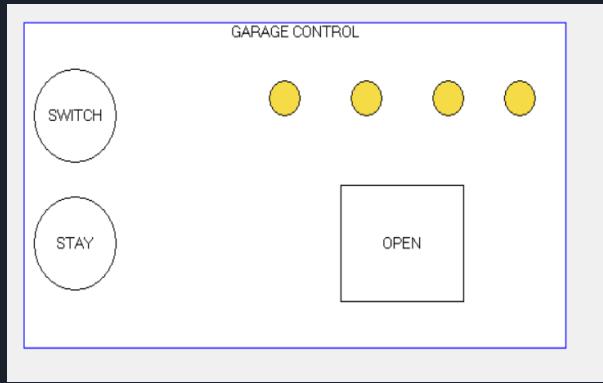
- When this button is pressed one time the Garage Lights will be turned ON and if we press this for the second time the Garage will be opened.



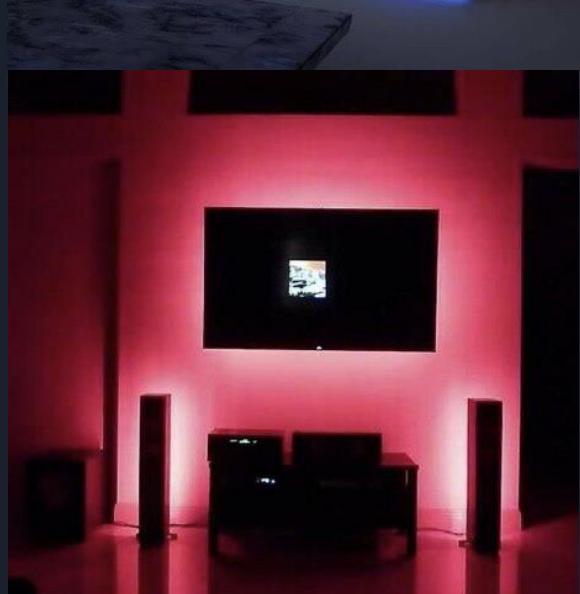
Ladder Diagram



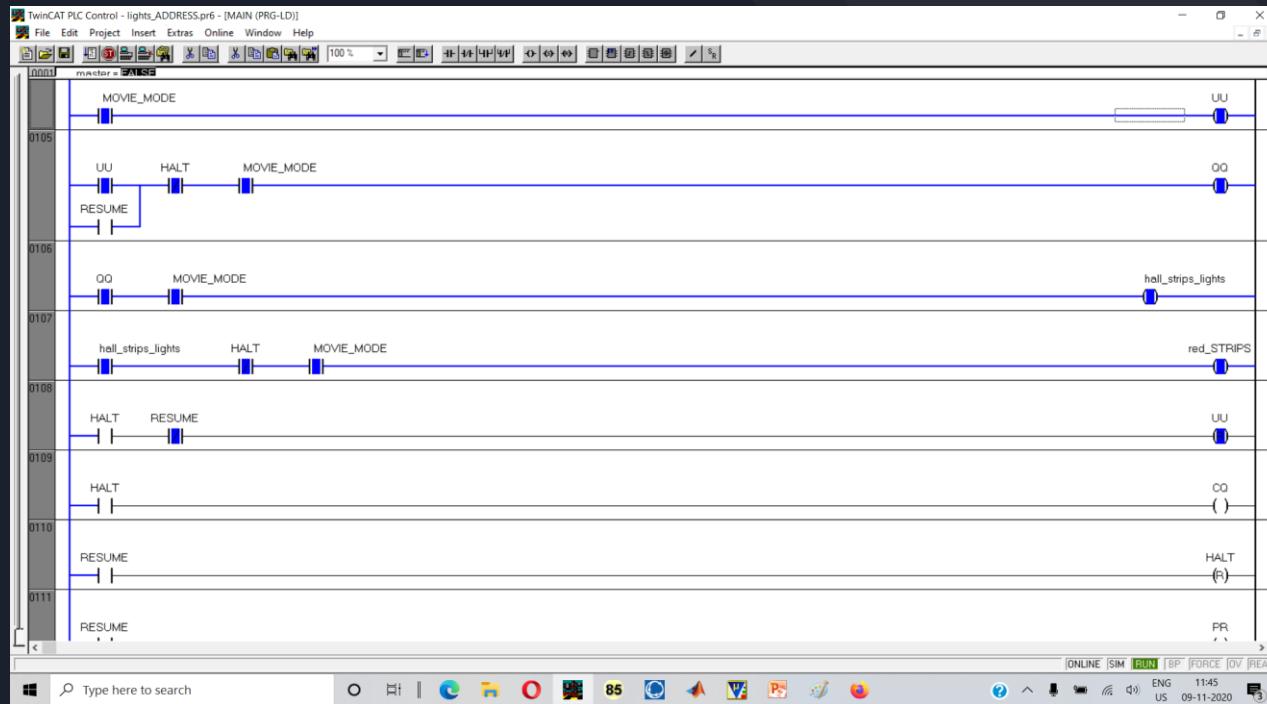
Visualization



- Music mode and Movie mode are the two modes when pressed the lighting of the strips changes automatically providing effects and creating a mood accordingly as shown in the Fig. Respectively.

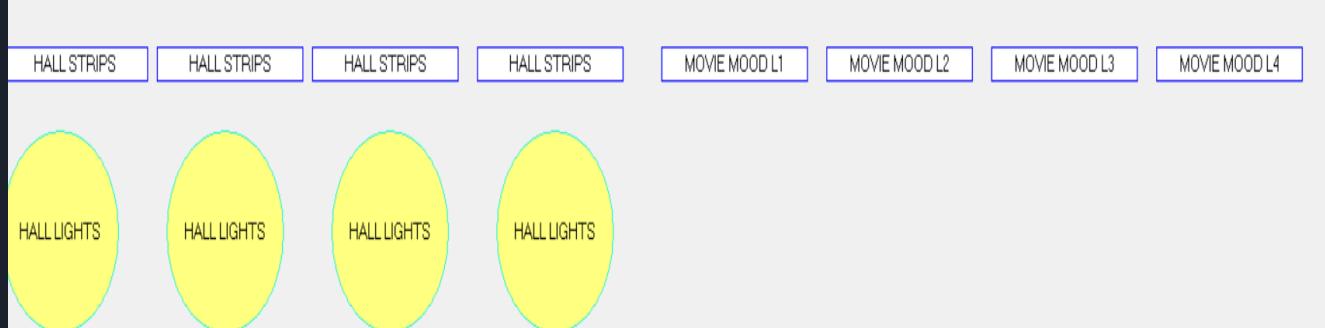
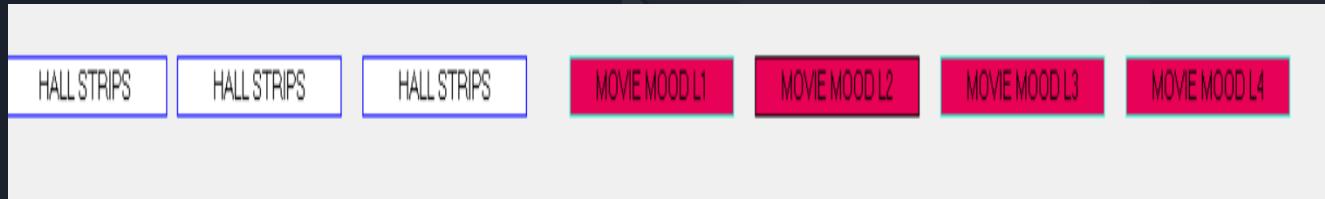
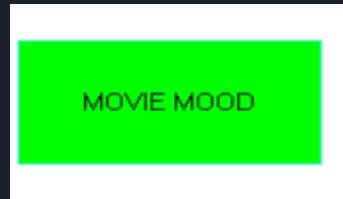


Ladder Diagram

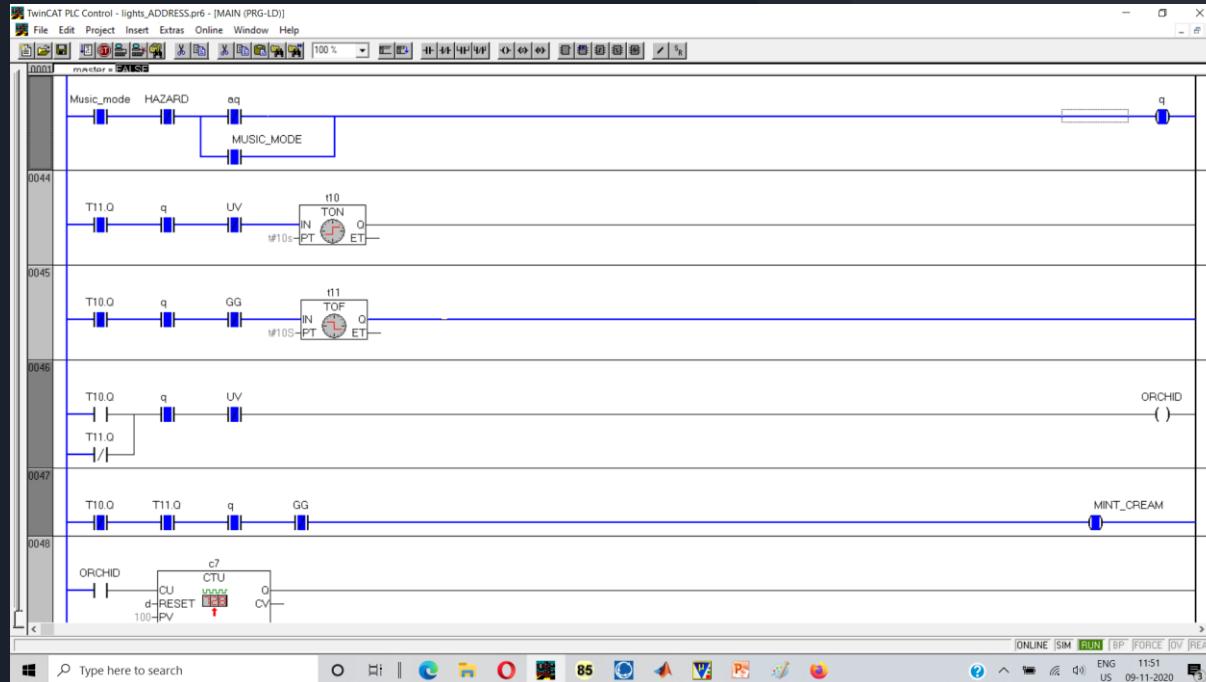


Movie mode

Visualization



Ladder Diagram



Music mode

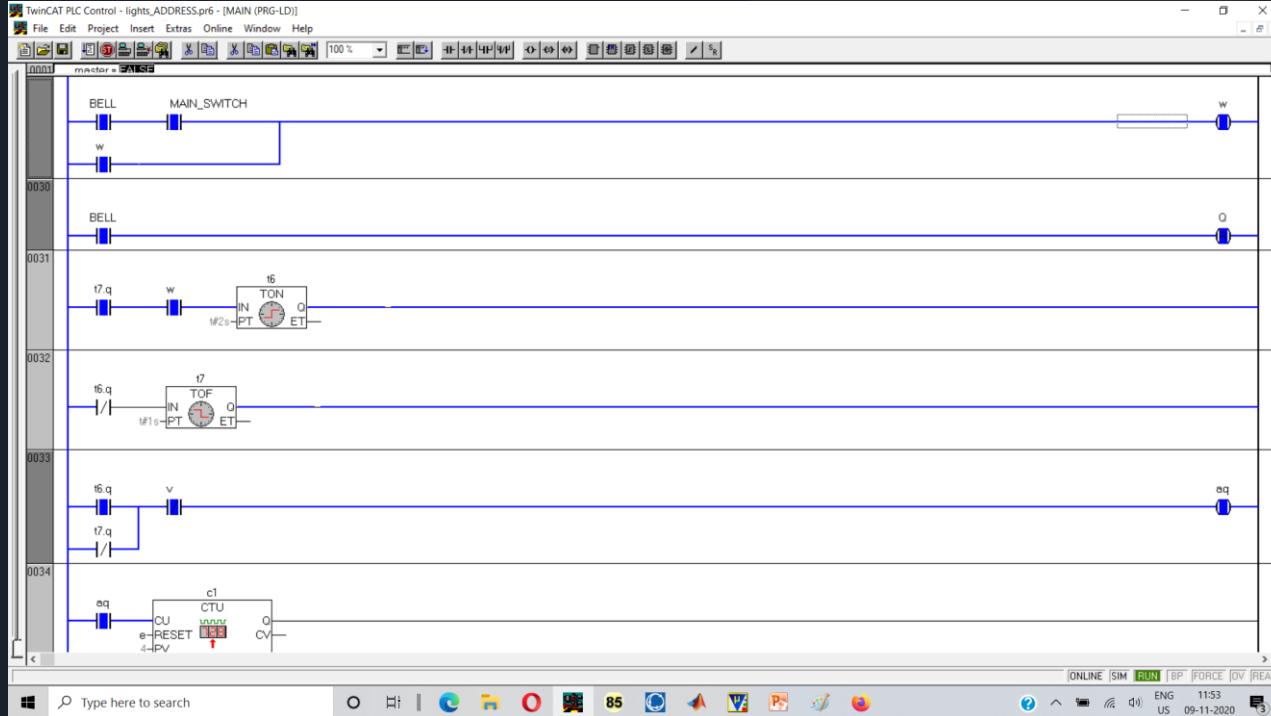
Visualization



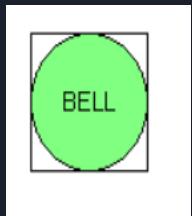
- Other things or devices used in this project are DoorBell and Smoke detector which provides as a input to PLC and the automation works accordingly as set by the program.



Ladder Diagram

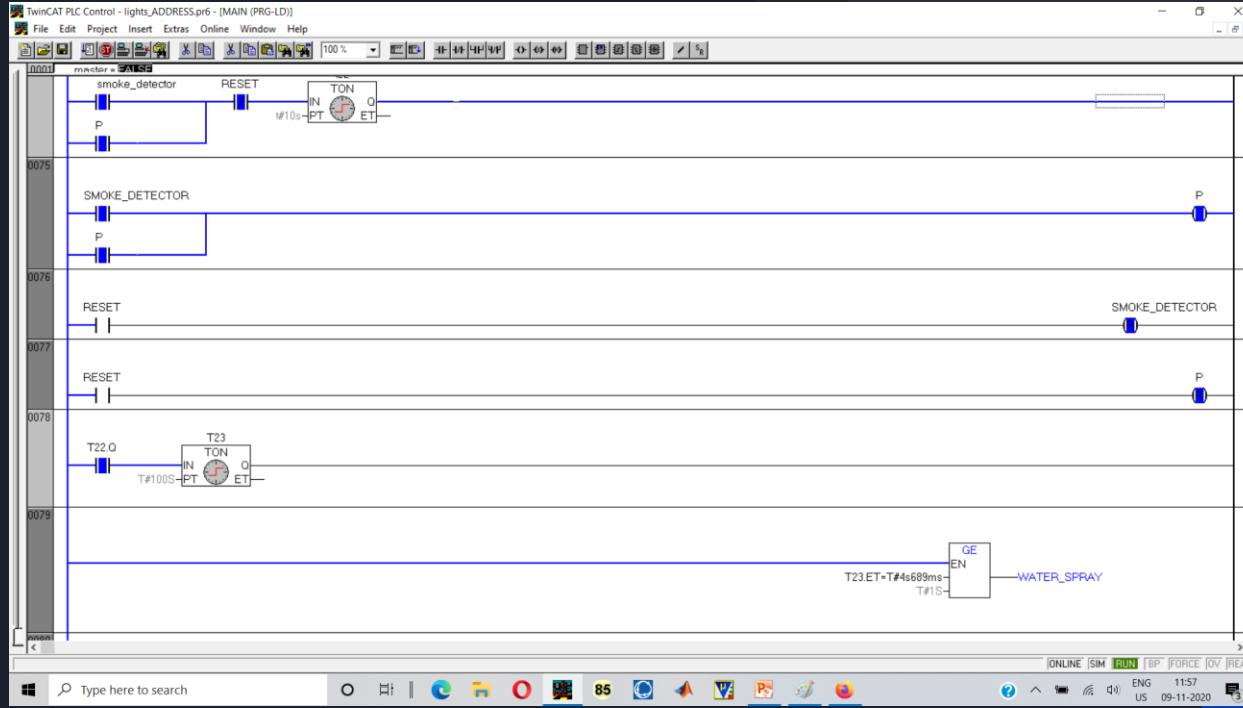


Visualization



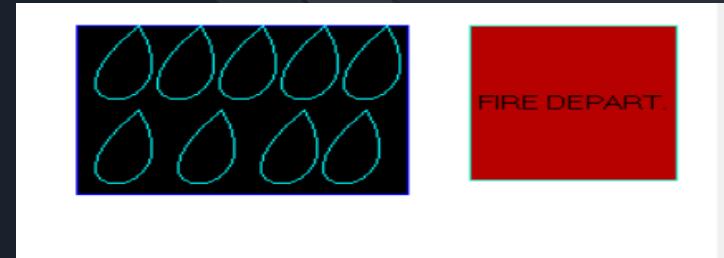
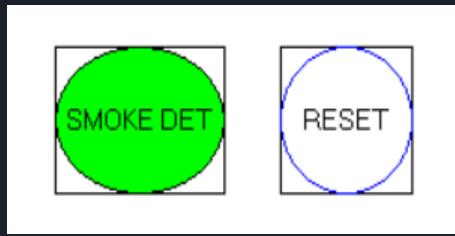
BASEMENT STRIPS BASEMENT STRIPS BASEMENT STRIPS BASEMENT STRIPS

Ladder Diagram



Smoke detector

Visualization





Now, let's jump to the Ladder diagram and Visualisation for this project.



THANK YOU

