# Automatic Street Light Control

Sadiq Sonalkar

CS22014

# Overview

My project is Automatic Street Light Control. With the help of an IR Sensor, we will control the street light.

So when any person is walking the street light above the person will automatically turn on because of the sensor it triggered.

I will simulate my project using Proteus and for the coding, I will be using Keil.

# Objective

- Streetlights are quite an important part of a city. These street lights are switched ON in the evening and are switched OFF in the morning.
- In order to reduce this waste of electricity, we need an automated Street Light Monitoring System Using IoT.
- With the help of IoT, streetlights can switch ON and OFF automatically.
- Power Consumption is quite low in these street lights using IoT which also leads to energy conservation.
- There are 3 sensors in our project. If you want, we can increase the number of parking slots by adding a few more IR sensors and modifying the code accordingly.

# Proteus

Proteus is used to simulate, design, and drawing of electronic circuits. By using proteus you can make two-dimensional circuit designs as well.

With the use of this engineering software, you can construct and simulate different electrical and electronic circuits on your personal computers or laptops.

Circuit simulation gives students a fast practical learning tool.

A software solution allows instructors to prepare and re-use virtual labs.

# Keil

Keil is a software development tool used for creating applications for microcontrollers. It provides a complete integrated development environment (IDE) for writing, compiling, and debugging embedded software for a wide range of microcontrollers, including ARM-based microcontrollers.

Overall, Keil is widely used in the development of embedded systems and is a popular tool among embedded system developers, especially those working with ARM-based microcontrollers.

# Component Used:

Micro Controller (AT89C51)

Button

Relay (5V)

AC Voltage Source

Ground

Transistor (BC547)

Power

Lamp

**Flow of the project:**

Across each sensor, we will place a load i.e. lamp.

 Relay connection will be done on MCU using port P2.

And for the sensor connection to MCU, we will use port P1.

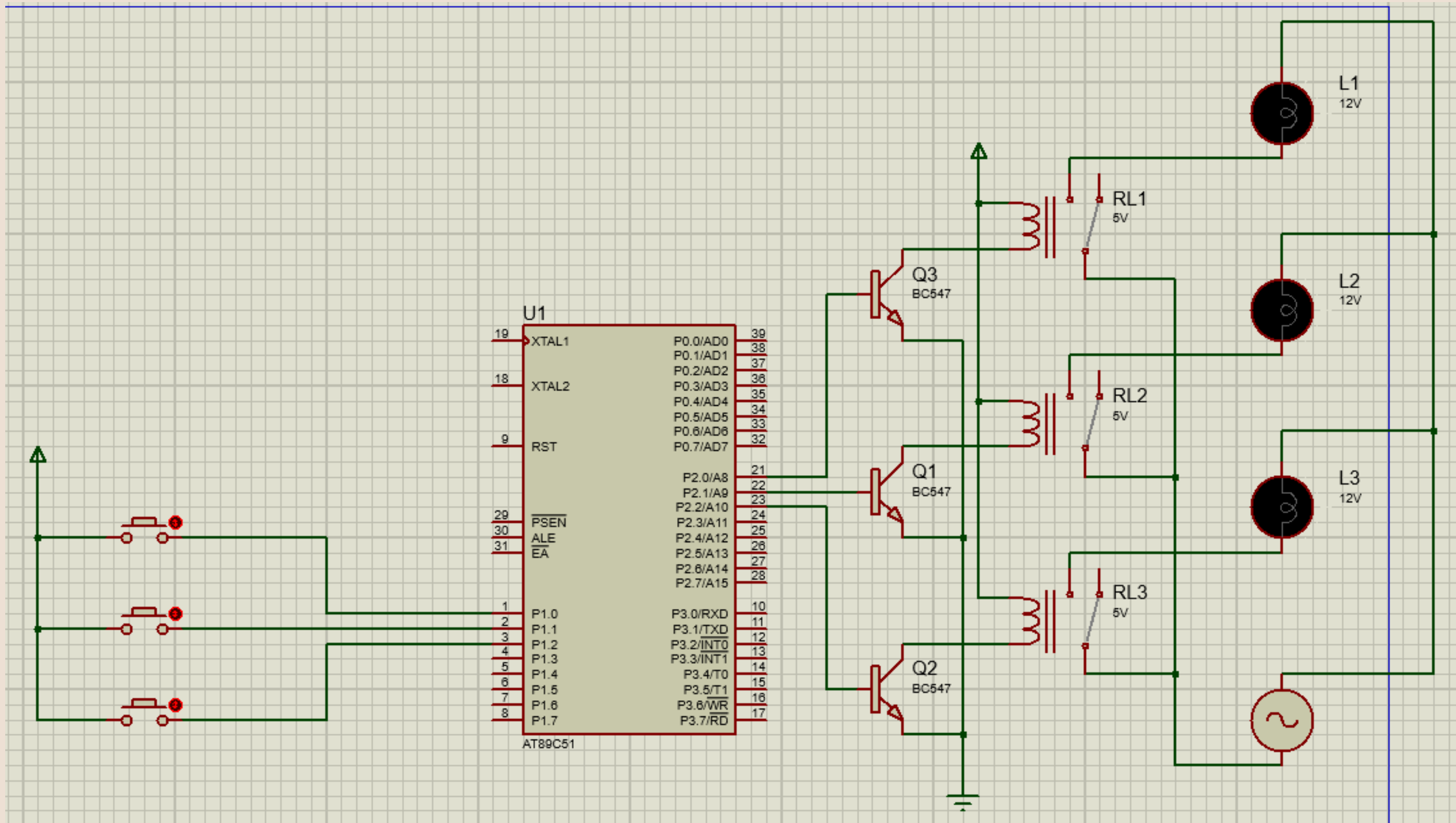Initially, all the sensors and the load will be 0.

We will run a while loop infinitely so that one condition is met.

Then we tried all the conditions i.e. when all sensors are off.

When only 1 sensor is on, When 2 sensors are on, and lastly when all sensors are on.

Then we will compile and generate the HEX Code file.

# Diagram:

- 3 relays are used to drive the electrical load.
- AC Source will generate Alternating Current.
- We have 1 sensor across each relay.
- One end of the sensor will be connected to MCU and the other end will be connected to Power.
- We will use a transistor as an interface between the relays and MCU.
- We will connect the collector of the transistor to the relay, the base to MCU, and the emitter to the ground.
- One end of a lamp will be connected to AC Source and another end to the relay.
- The relay should be 5V because MCU can't handle other Voltage Relay.

# Project Implementation

# Thank you!

Sadiq Sonalkar

CS22014