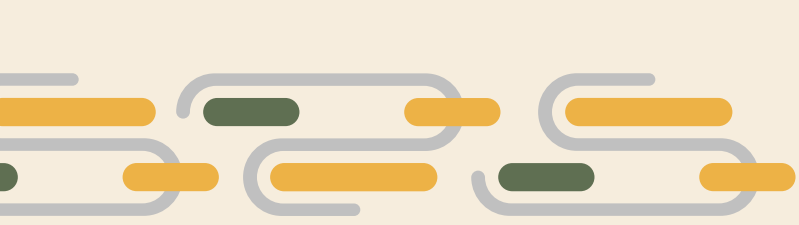


AUTOMATIC STREET LIGHT CONTROL

This system implements microcontroller control of street illumination through IR sensors to monitor and manage energy usage effectively.

**Presented by:
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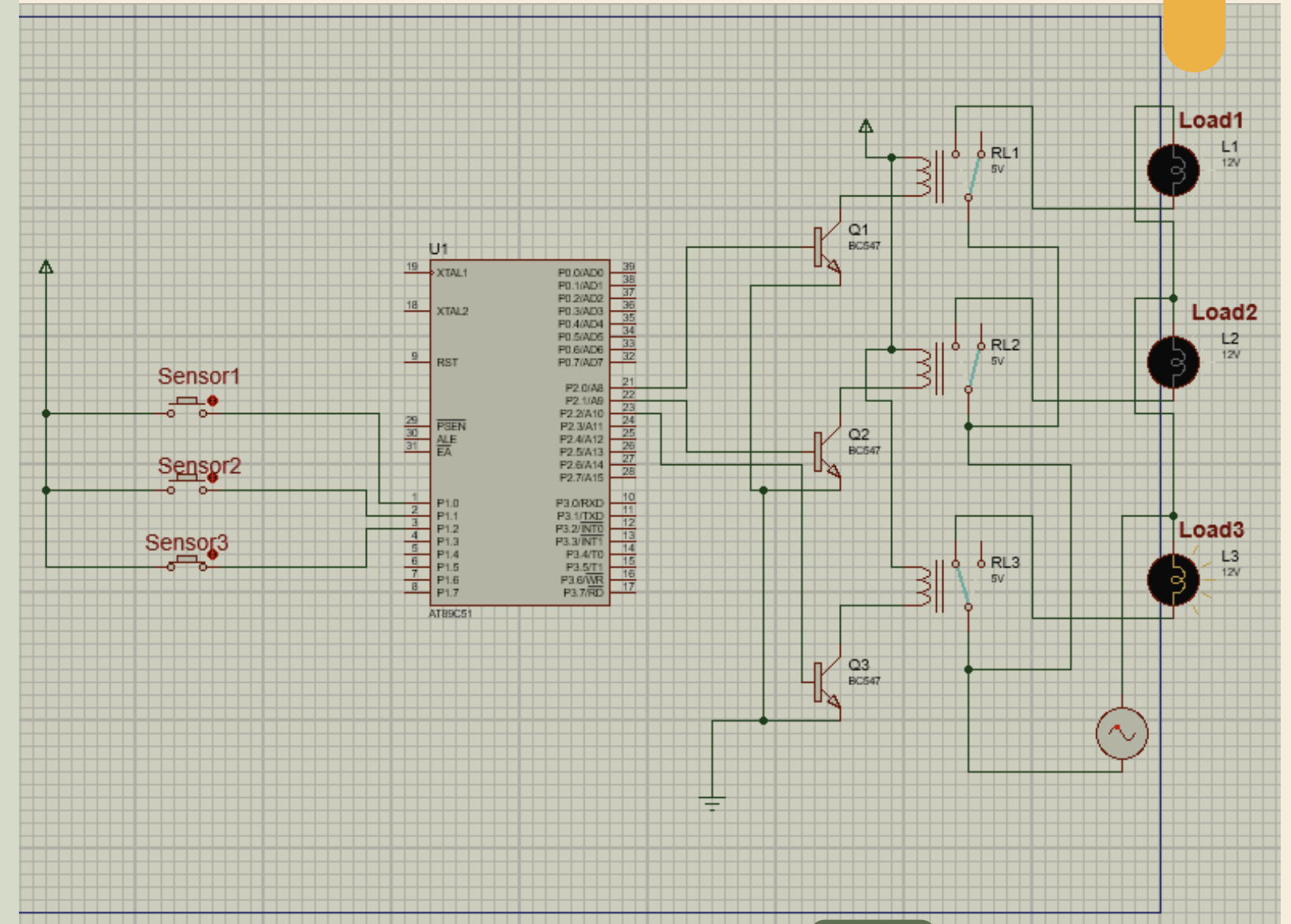
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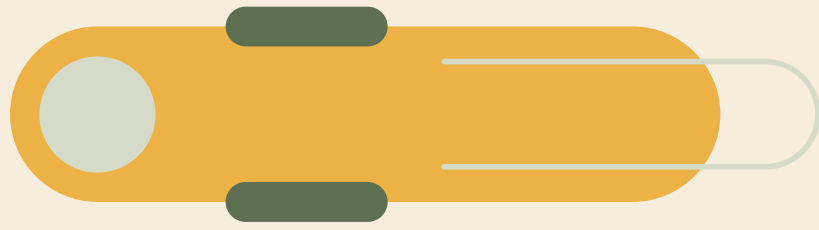


INTRODUCTION

Overview

The Automatic Street Light Control System operated through combination of AT89C51 microcontroller and infrared (IR) sensors. When people approach street lights the installed IR sensors activate those street lights automatically. The smart system operates through illumination of spaces which contain people to reduce energy consumption. Proteus simulation software has been used to test the system while embedded C code creation and compilation has been done through Keil IDE.





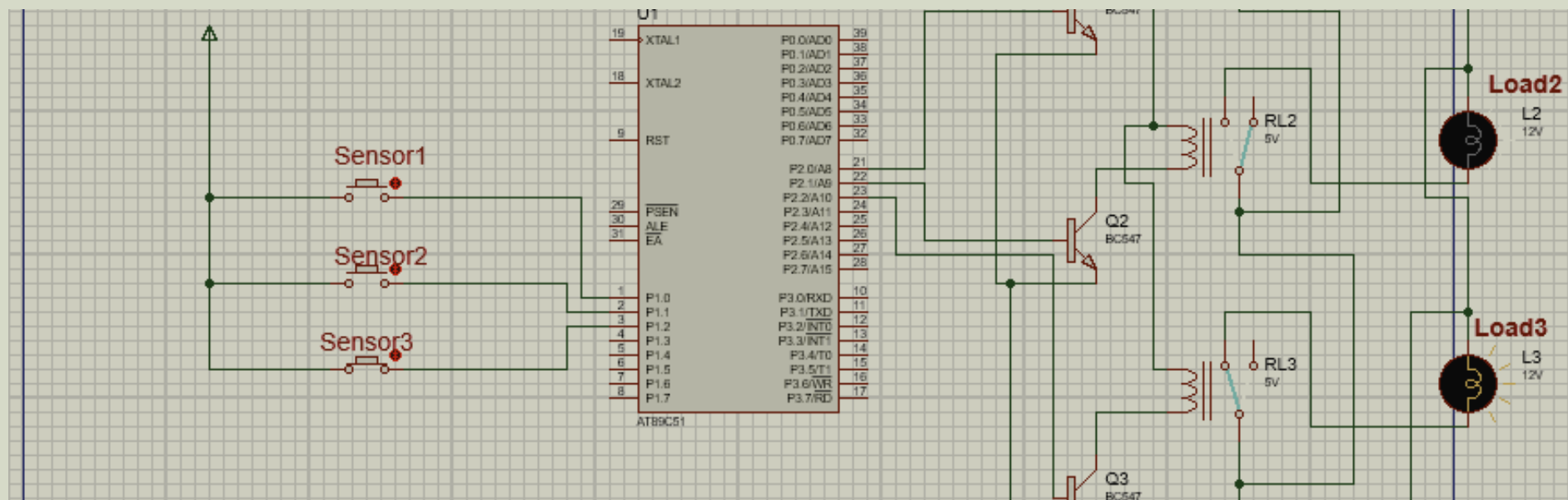
OBJECTIVE

Nighttime street illumination functions as a security measure for people. The lights operate without interruption even though no human presence is detected. This wastes electricity.

The implemented system relies on sensors to implement this solution. A person's passage activates the light mechanism. The lamp operates only while people are present. This saves energy.

More sensors can be installed to maintain coverage of extensive locations including streets and parking lots. Users can easily operate the system while simultaneously preserving the environment.

SIMULATION SOFTWARE & DEVELOPMENT ENVIRONMENT



Proteus:

- A software used to design and simulate electronic circuits.
- Lets you test your microcontroller code in a virtual circuit (e.g., LEDs, sensors).
- Like a virtual lab for building and testing electronics without physical components.

```
1 #include <reg51.h>
2
3 sbit sensor1 = P1^0;
4 sbit sensor2 = P1^1;
5 sbit sensor3 = P1^2;
6 // sensors on street//
7 sbit load1 = P2^0;
8 sbit load2 = P2^1;
9 sbit load3 = P2^2;
10 // street light connections//
11
```

Keil:

- A software used to write, compile, and debug programs for microcontrollers.
- Helps create embedded system code in C or Assembly.
- Like a classroom where you test and fix code before using real hardware.



COMPONENT USED:

- **Micro Controller (AT89C51)**
- **Button**
- **Relay (5V)**
- **AC Voltage Source**
- **Ground**
- **Transistor (BC547)**
- **Power**
- **Lamp**



PROJECT WORK FLOW

- Start with defining the problem and project idea
- Conduct background research and feasibility analysis
- Design the system architecture and plan development
- Begin development in phases (hardware/software)
- Test each phase and integrate components
- Finalize the project after successful testing

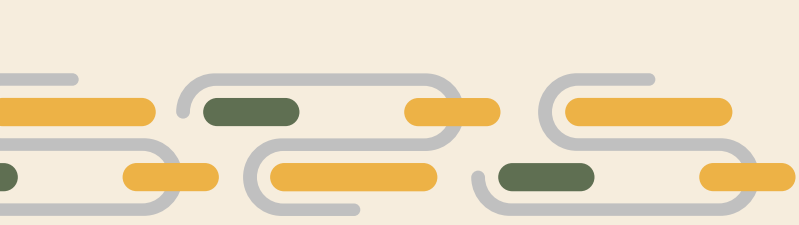
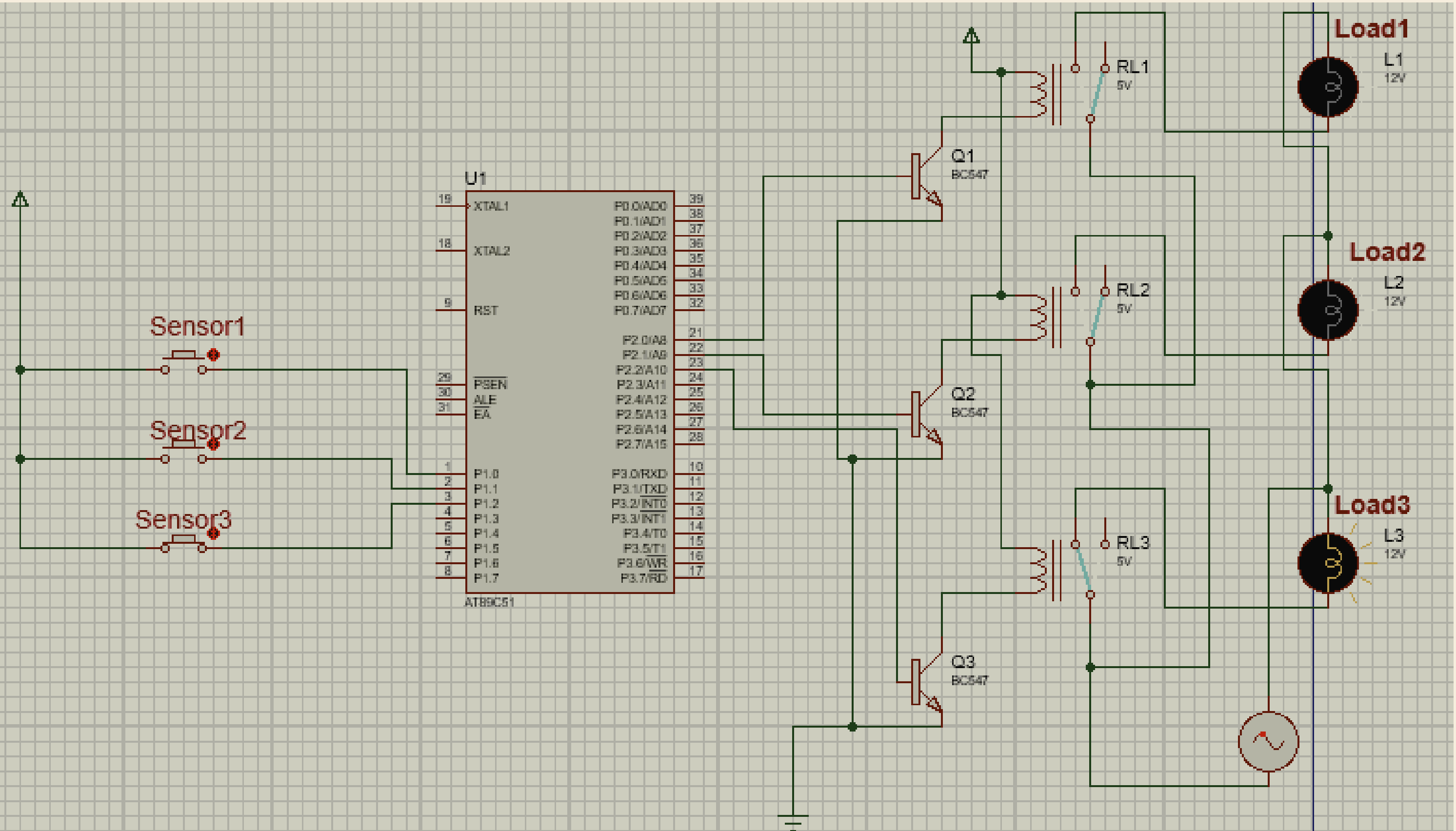


DIAGRAM:



HARDWARE IMPLEMENTATION

- Choose the required electronic components based on design
- Create a circuit diagram and design the PCB layout
- Fabricate or print the PCB and assemble components
- Test the assembled hardware to ensure functionality
- Troubleshoot and fix any hardware-related issues



PROJECT IMPLEMENTATION



- Combine hardware and software into a complete working system
- Run functional and performance tests on the integrated setup
- Identify and resolve any bugs or integration issues
- Make necessary optimizations for efficiency and reliability
- Finalize and deploy the complete project for end use



THANK YOU