

PC BASED ELECTRICAL LOAD CONTROL

ABSTRACT

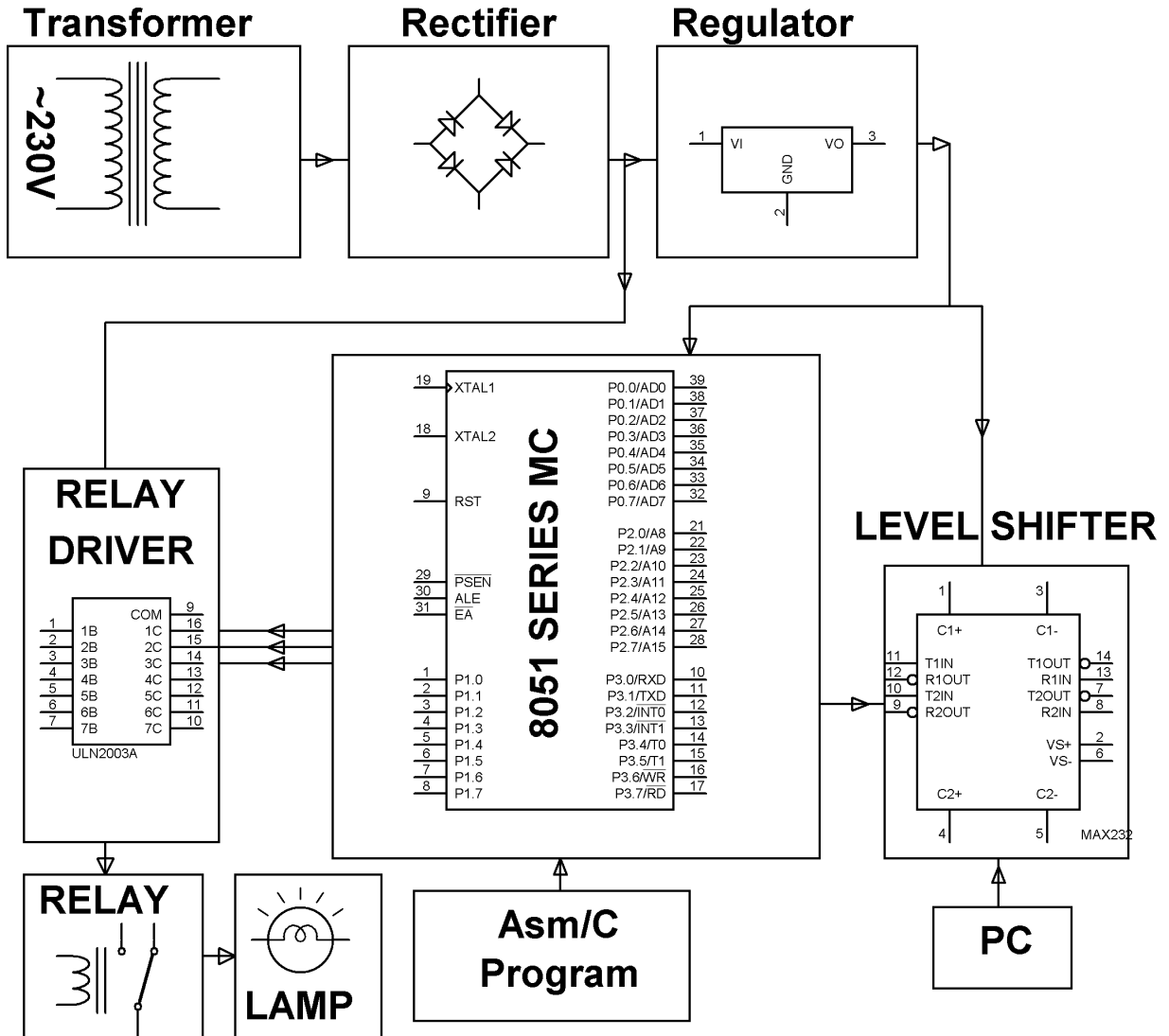
The aim of this project is to control the electrical appliances through a personal computer (PC). For example, theatre lighting can be centrally controlled from the PC for better stage management. Presently, they are manually managed which makes it difficult to coordinate the lighting with the respective scene. With this system, one can control the electrical appliances ON/OFF by just being seated at one place using a PC.

This system is integrated with the electrical loads and also connected to the PC where centralized control takes place. It uses an RS-232 protocol from the microcontroller to communicate with the PC. To turn on/off the appliances, we use Hyper Terminal on PC. Once the connection is established with the PC, then the system starts working. The microcontroller used in this project belongs to 8051 family.

This project can be further enhanced by implementing a GUI based control panel on the PC with appropriate embedded software. The intensity control can also be incorporated using power electronics devices.

Note: The project works only on operating systems having hyper terminal (E.g. Windows XP). The computer must have a RS232 serial port.

BLOCK DIAGRAM



HARDWARE REQUIREMENTS:

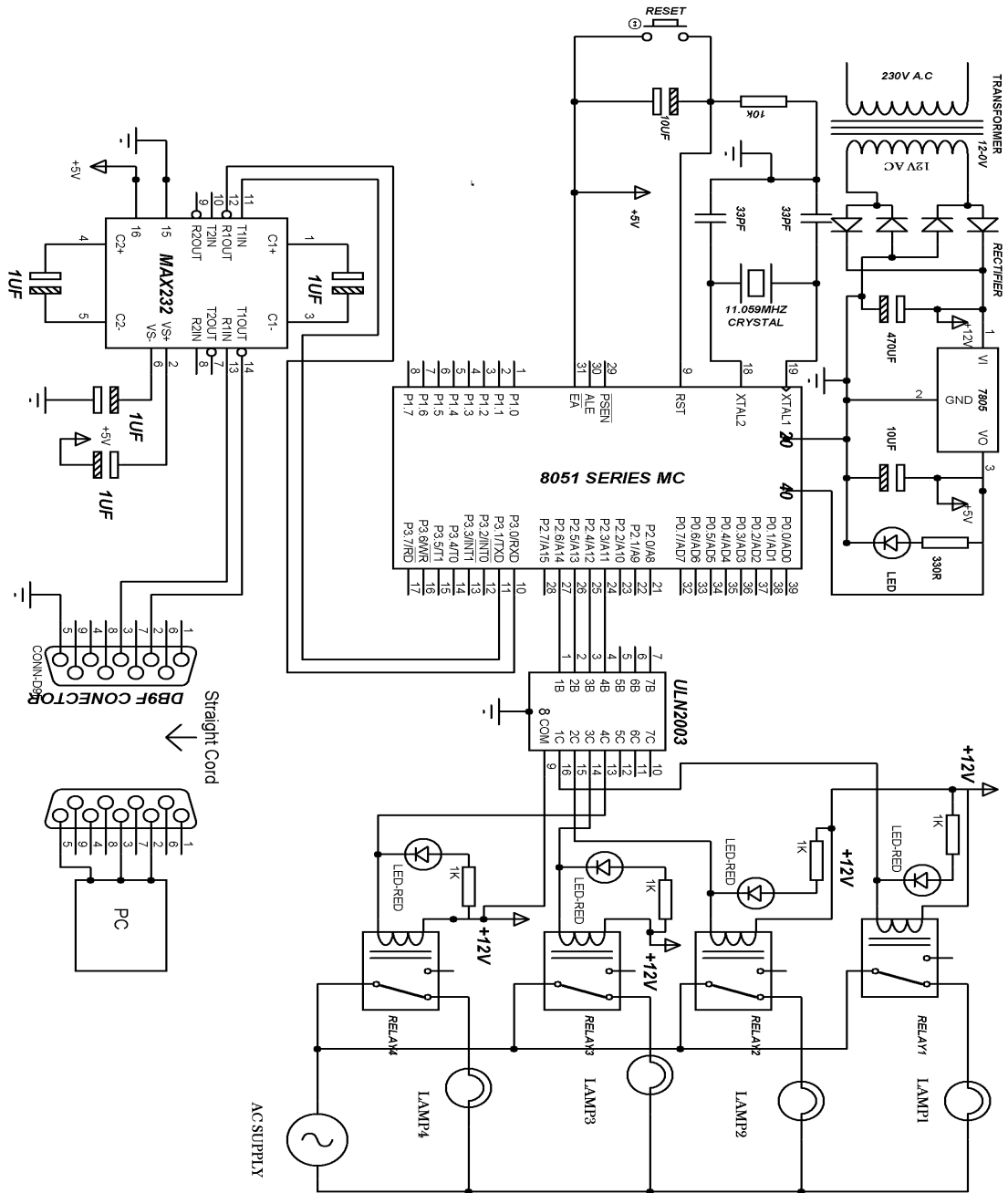
8051 series Microcontroller, Level Shifter IC, DB Connector, Relays, Relay Driver, Transformer, Diodes, capacitors, Resistors, LED, Crystal, Lamps.

SOFTWARE REQUIREMENTS:

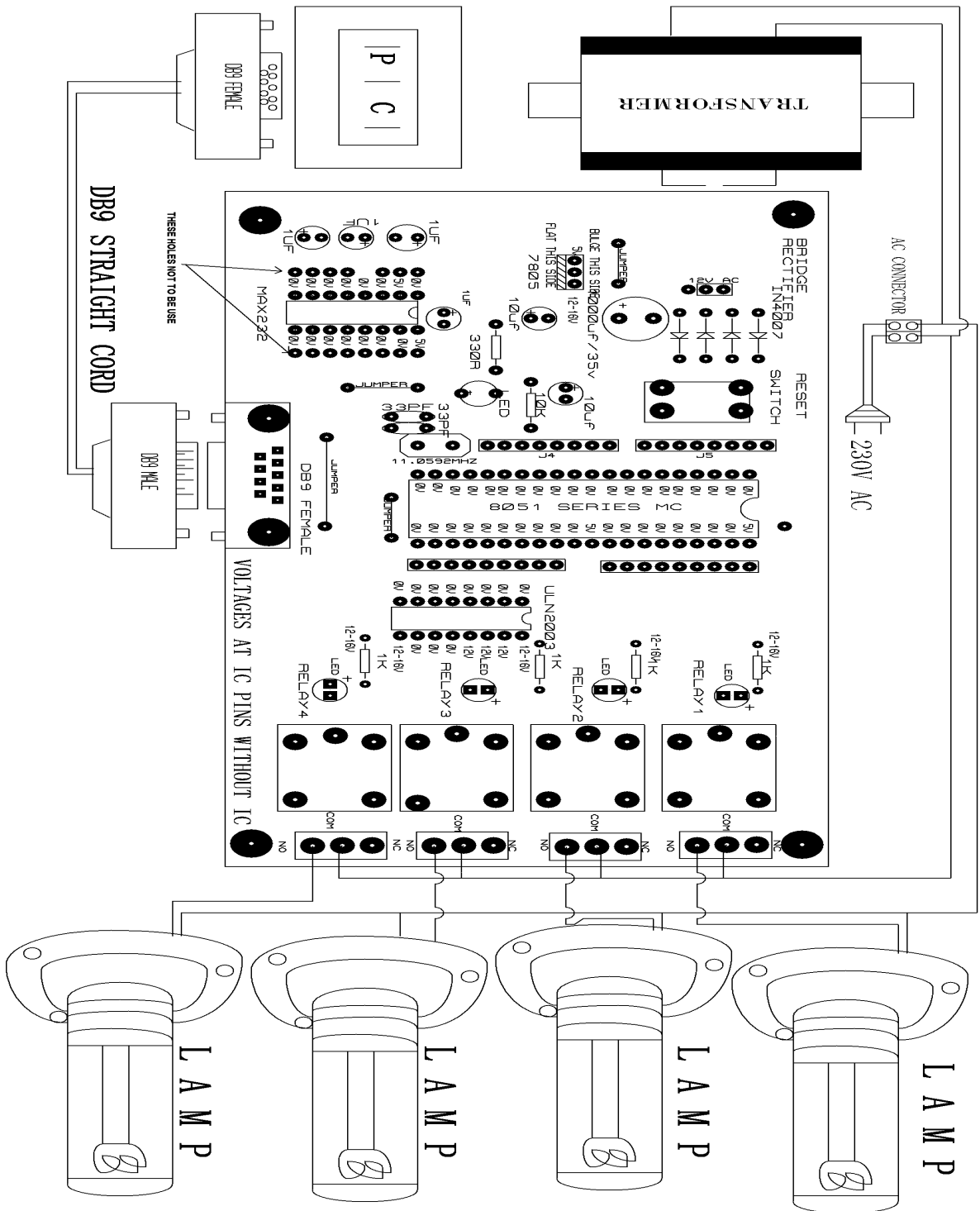
Keil compiler

Language: Embedded C or Assembly

Circuit diagram



PCB artwork



-		
<u>Component list</u>	<u>Quantity</u>	<u>Checked</u>
<u>Resistors</u>		
330R	1	
10K	1	
1K	4	
<u>Capacitors</u>		
1000Uf/35V	1	
10uF/63V	2	
1uF/63V	4	
33pF Ceramic	2	
<u>Integrated Circuits</u>		
7805	1	
AT89S52	1	
MAX232	1	
ULN2003A	1	
<u>IC Bases</u>		
40-PIN BASE	1	
16-PIN BASE	2	
<u>Diodes</u>		
1N4007	4	
<u>Miscellaneous</u>		
CRYSTAL 11.0592MHz	1	
DB9 FEMALE CONNECTOR	1	
LAMP	4	
LAMP HOLDER	4	
LED-RED	5	
12V RELAY	4	
4 PIN PUSH BUTTON	1	
POWER CORD	1	
TRANSFORMER 0-12V	1	
MALE BURGE 2-PIN	1	
FEMALE BURGE 2PIN (For Transformer)	1	
PCB CONNECTOR 3-PIN	4	

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AC CONNECTOR 2-PIN	1	
HEAT SINK	1	
SCREW NUT FOR HEAT-SINK	1	
SERIAL COMMUNICATION CABLE (DB9 CORD)	1	
COPPER WIRE FOR LOAD		
ASSEMBLED PCB (WORKING)	1	
PLAIN PCB	1	
ZERO BOARD	1	
SOLDERING IRON	1	
CUTTER	1	
MULTIMETER	1	
SCREW DRIVER	1	
SOLDERING LED (50 gm)		
CONNECTING WIRE		
RIBBON WIRE FOR ZEROBOARD		

**For complete synopsis, weekly reports, source code, black books
Please mail your complete details on support@makeitortakeit.in
We will mail you within 24hours from the time you mail us.**

Name of the student
PROJECT NAME

Group member 1

Group member 3

Group member 2

Group member 4

Group member 5

College name

Branch

Note to make your kit /project

You need basic knowledge & logic of components /soldering /disordering /breadboard circuiting/PCB designing/etching.

1. You can download the projects from our website makeitortakeit.in and get started to build one, we help you with the basics of know & how.
2. You can purchase the complete do it yourself kit & assemble it.
3. At the last moment, If you are short on time /if your project is not giving output!!!!!! Readymade project kit is available.
4. **Training (optional)** available if you want us to help u in your projects, it includes.
 - 7 sessions, (timing mutually decided).
 - hands on training on breadboard circuiting ,soldering,desoldering,pcb making ,how to use instruments
 - Stepwise guidance you build your project right from the scratch **.
 - complete documentation/references(hard & soft copy)
 - Plotting and Implementing Scale Model.
 - Troubleshooting.
 - Programming of Controllers
 - PCB Software tool, Hardware Cutting, Drilling and Etching