PC BASED OPTIMIM POWER MANAGEMENT SYSTEM FOR HOTELS
[front end]

ABSTRACT

The aim of the project "PC BASED OPTIMIM POWER MANAGEMENT SYSTEM FOR HOTELS" is to design a system using which the AC loads in a hotel can be controlled through a PC using the microcontroller 8051 through which the power management can be optimized.

The project is designed in such a way that the controller is interfaced to PC using serial communication technique. Serial communication is often used either to control or to receive data from an embedded microprocessor. In serial communication the data is sent as one bit at a time. Serial communication is a form of I/O in which the bits of a byte being transferred appear one after the other in a timed sequence on a single wire. Serial communication is commonly used in applications such as industrial automation systems, scientific analysis and certain consumer products. Here the serial communication is established between the PC and the controller by a line driver IC max232 which acts as a voltage converter. And the loads will also be interfaced to the controller through relays. Depending on the input received from the PC, the controller will perform the predefined task of turning ON/OFF the loads. Here the front end application will also be developed on C# .NET platform for the visual effects so that the application can be easily accessed. Here we will design the buttons to operate the loads. By clicking on these buttons the corresponding data will be passed to the controller serially. And an LCD will also be interfaced to the controller to display the status of loads.

This project uses regulated 5V, 500mA power supply. Unregulated 12V DC is used for relay.7805 three terminal voltage regulator is used for voltage regulation. Bridge type full wave rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

APPLICATIONS:

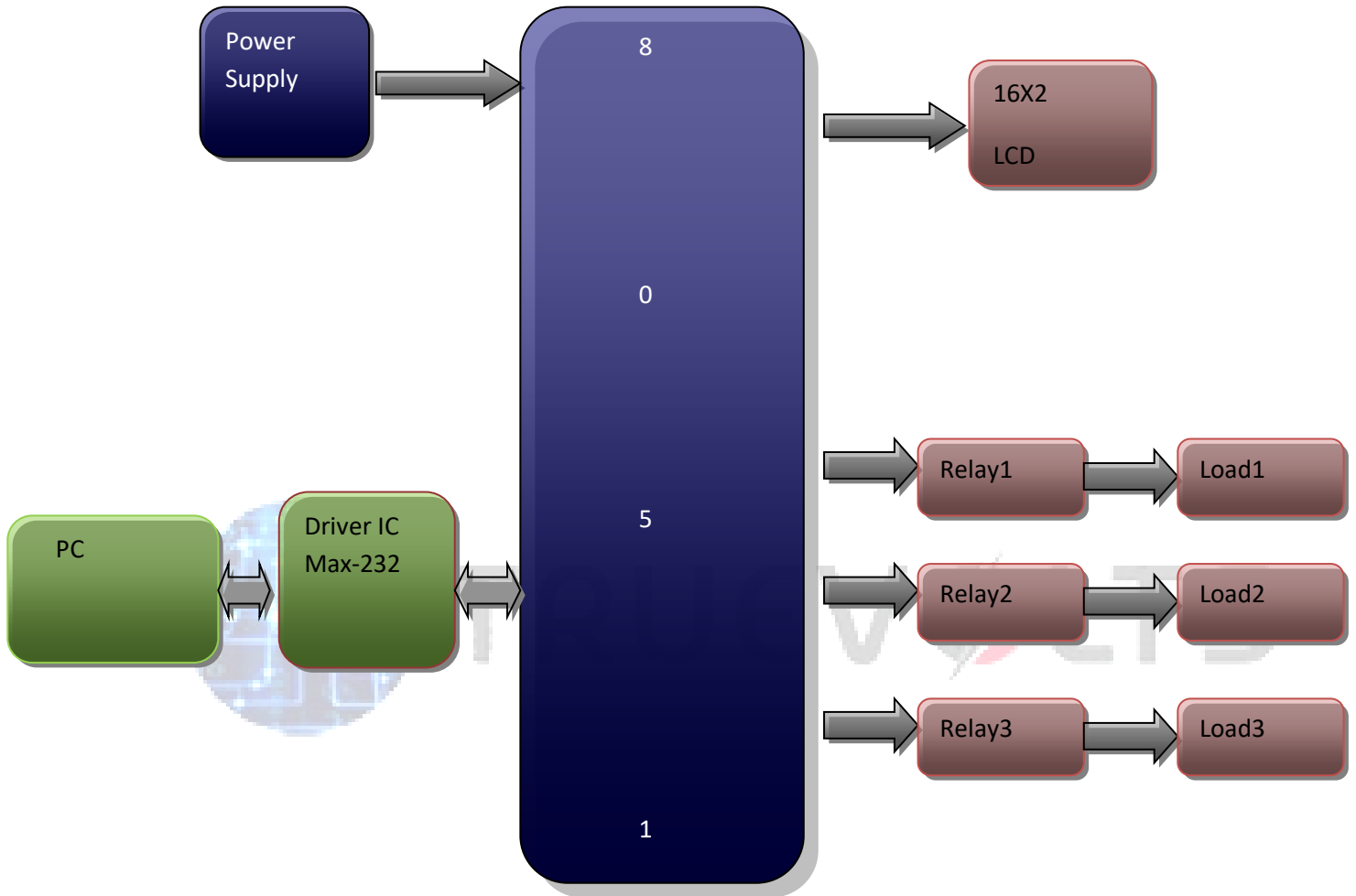- ➤ Industrial applications
- ➤ Domestic applications

BLOCK DIAGRAM:

Power Supply		8		16X2 LCD

Driver IC Max-232 | PC

Relay1 → Load1
Relay2 → Load2
Relay3 → Load3

(Microcontroller labels: 8, 0, 5, 1)

POWER SUPPLY BLOCK DIAGRAM:

Step down Transformer → Bridge Rectifier → Filter → Regulator → Output