EMBEDDED STREET LIGHT CONTROL SYSTEM

DESCRIPTION:

The project is aimed to design an embedded system using which the street lights can be automated using LDR.

Nowadays, human has become too busy and is unable to find time even to switch off the lights wherever not necessary. This can be seen more often in the case of street lights. The present system is like, the street lights will be switched on in the evening before the sun sets and they are switched off the next day morning after there is sufficient light on the roads. But the actual timings for these street lights to be switched ON are when there is absolute darkness. With this, the power will be wasted up to some extent. This project gives the best solution for electrical power wastage. Also the manual operation of the lighting system is completely eliminated.

The Project is Embedded Street light control system using 8051 Microcontroller. This project is very useful for commercial sign boards, advertising boards, street lights for automation lighting system. This system switches on the lights only in darkness. As it works with LDR sensor, no programming of timings and battery back-up is required. When the light focuses on LDR it sends signal to microcontroller, depending on that signal the lights will be turned off through relays and when LDR detects darkness the street lights will be automatically turned on. There is no need for manual controlling system. This is a simple and very useful system.

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. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

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TECHNICAL SPECIFICATIONS:

HARDWARE:

Micro controller   :   AT89x series

Crystal   :   11.0592 MHz

LDR sensor

Light

Relay

Power supply

Transformer   :   12V step down

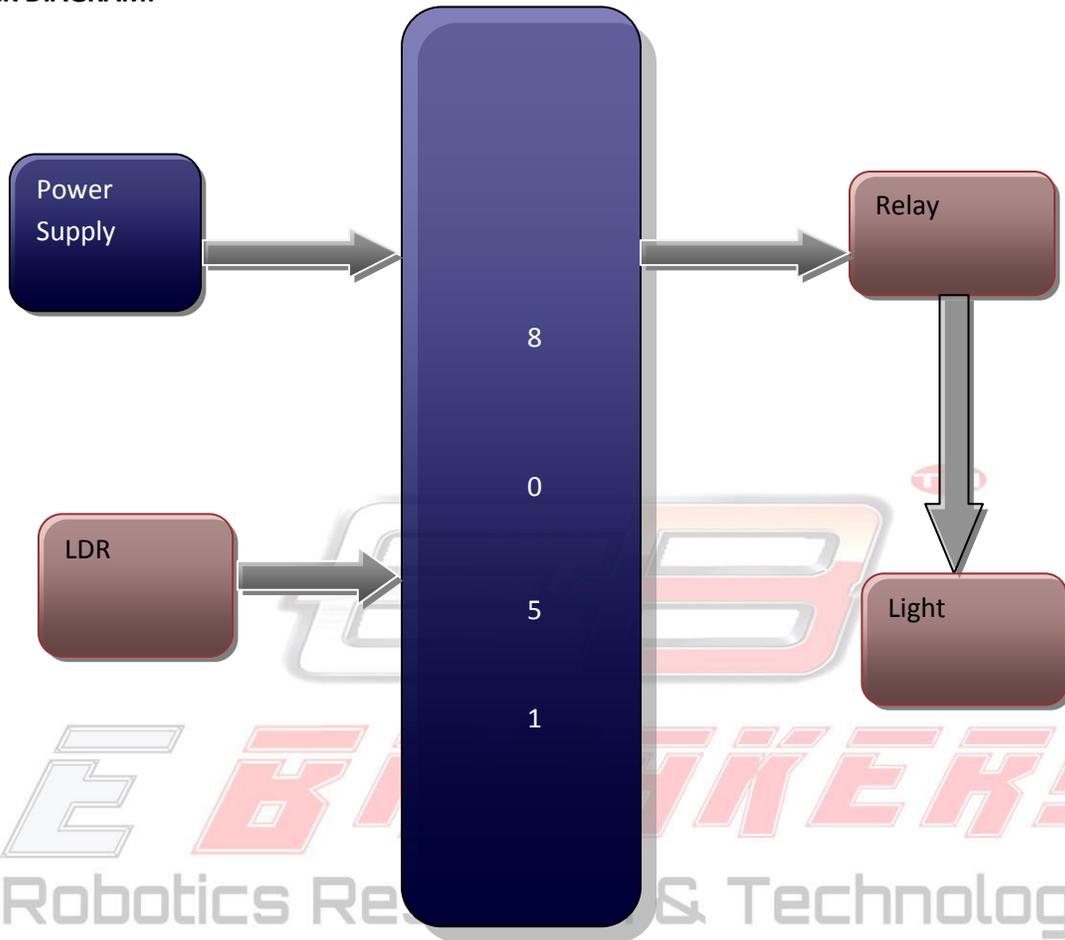Filter   :   1000uf/25V

Voltage Regulator   :   7805, 7812

SOFTWARE:

Keil IDE

UC flash

Proteus

APPLICATIONS:

- ➢ Industrial applications
- ➢ Power savings applications

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BLOCK DIAGRAM:

POWER SUPPLY BLOCKDIAGRAM: