7.1.2 Sensor based energy conservation system-report

The manual systems are transforming into smart systems with the incorporation of Embedded Systems. It is a real time project which is used to automate the Light in the corridor without the manual operating by humans. Smart control of electrical devices has become inevitable so as it leads to energy conservation to the possible extent. A light may be in an ON state and may be functioning even though it is day time. There is a lot of wastage in power due to lack of proper monitoring done on the devices we use. The lights are not turned OFF after using them so more amount of electricity is consumed. If we have a system which automatically switches ON and OFF the electric devices such as lights. In order to overcome this problem a Smart system is developed. The smart system contains an Arduino Uno microcontroller, light dependent resistor sensor, Relay board and electrical devices such as Lights. . The beauty of the proposed work is that the wastage of unused electricity can be reduced, lifetime of the lights gets enhance because the lights do not stay ON during the day time. The Arduino Uno microcontroller is the main element in this Automation system which corresponds to initiate necessary actions. The Light dependent Resistor (LDR) sensor measures the light intensity. If the light intensity is less than the threshold value, the microcontroller Arduino Uno takes the decision to turn ON the lights in the evening with the help of relay. If the light intensity is more than the threshold value, the microcontroller Arduino Uno takes the decision to turns OFF the lights in the morning with the help of relay. The switching ON and OFF of the lights are done by the relay. By using LDR sensor energy conservation is done.

(i)   Block diagram
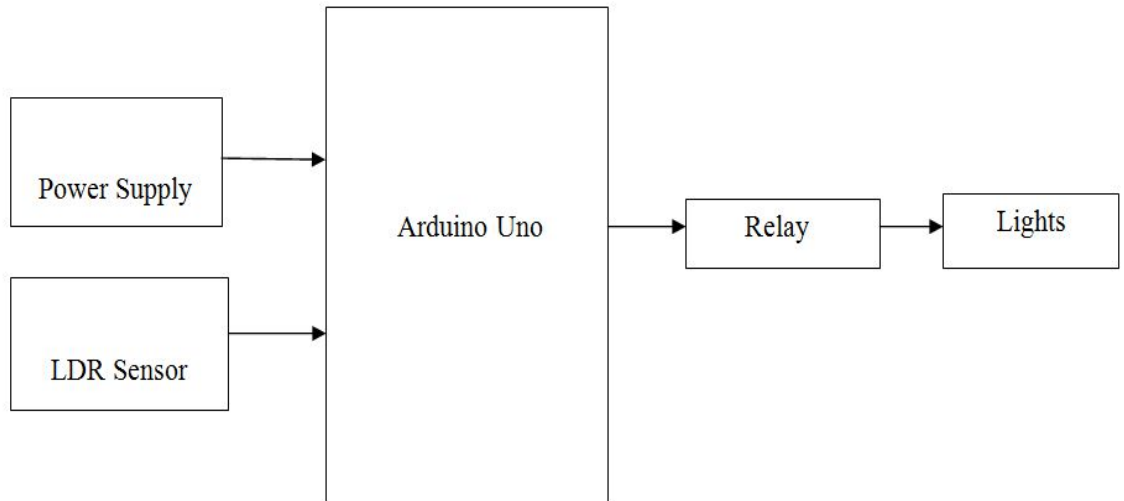
(ii)   Geo-tagged Photographs

      (a) Hardware of the implemented system

(b) In the morning Lights are turned OFF

(c) In the evening Lights are turned ON