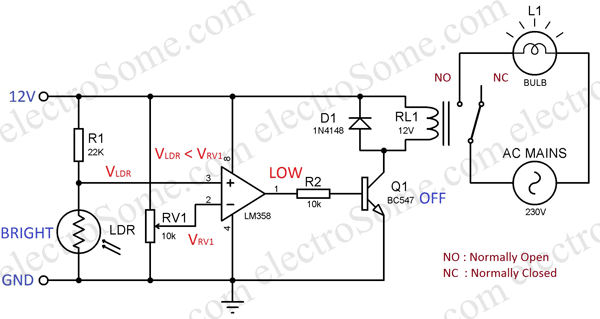
**Experiment 1 : design an automatic night lighting system such the system is only activated when the master control switch is pressed.**

**a.below 50% value of full brightness all LEDs constantly ON.**

**b.above 50% value of full brightness only first LED is ON.**

**CIRCUIT DIAGRAM:**



**THEORY :**

Automatic night lamp as the name suggests is for turning ON and OFF the lamp automatically without the need of human interventions. It senses the light intensity from surroundings and find whether its day or night. And it automatically turns ON when the surrounding is dark and it turns OFF when it receives light from surroundings. A sensor called LDR is used to detect the light intensity. This project finds wide outdoor applications in streets, gardens and public places where it finds difficulty to appoint a person to operate the lights.

CONCEPT USED :

The main part of this circuit is the light dependent resistor (LDR). It is a sensor which is a particular kind of resistor whose resistance decreases when exposed to light. Likewise it offers high resistance in dark. The resistance value changes from few 100 ohms to mega ohm range. The LDR is placed in a potential divider network. So voltage across LDR changes with intensity of light. Voltage across the LDR is given to the positive terminal of a comparator.

CODE:

Void setup()

{pinMode(A0,INPUT);

pinMode(13,output);

}

Void loop()

{ if(analogRead(A0) < 514)

{digitalWrite(13,HIGH);

Else

{ digitalWrite(13,LOW);

}

Delay(10);

}