**DIFFERENT LED PATTERNS BY WAVING**

Aim of this project is to form 3 led patterns :

1. Blinking of 8 led altogether.
2. Glowing 8 led in increasing order (from corner to opp. side).
3. Glowing 8 led in converging order.

Components required are :

1. Hardware – AVR development board (with Atmega16 microcontroller) , program driver, USB cable, 3 female to female wires, 2 set of 8 wire attached together(female to female), IR sensor.
2. Software- code vision AVR, AVR program loader.

Skill required are:

Knowledge of basic C programming , knowledge of installing using AVR code vision, knowledge of designing circuit.

About the project:

According to our aim we are forming 3 led patterns on AVR development board with the help of IR sensor .We have used code vision to program these pattern in such a sequence that when we wave our hand or a finger in front of IR sensors the led on IR sensor will glow . Microcontroller will use these signals generated as input and further signals are used as input for the code given below.

Code Used:

#include <mega16.h>

#include <stdlib.h>

#include <math.h>

#include <delay.h>

int count=1;

interrupt[EXT\_INT0]void ext\_int0\_isr(void)

{

if(count>4)

{count=1;

count++;

}

}

void main(void)

{

int i,j,sum=0,count=1;

while (1)

{

switch(count)

{

case 1:

{if(PINB.0==1)

{DDRA=255;

PORTA=255;

delay\_ms(1000);

PORTA=0;

delay\_ms(1000);

} case 2:

{

if(PINB.0==1)

{

DDRA=255;

sum=0;

for(j=0;j<8;j++)

{

sum=pow(2,j)+sum;

PORTA=sum;

delay\_ms(1000);

} }

case 3:

{

if(PINB.0==1)

{

DDRA=255;

sum=0;

for(i=0;i<4;i++)

{

sum=sum+pow(2,i)+pow(2,(7-i));

PORTA=sum;

delay\_ms(1000);

} }

}

}

}

}

}

}

Mechanism:

1. Waving in front of IR sensor.
2. An IR sensor receives input and send it in port B.0 of micro controller (atmega 16).
3. This input will used in the loop coded and will run the cases sequentially.
4. On running the cases the output will be seen in led in form of pattern.
5. Only one pattern will be generated on waving once, so on waving second time next pattern will be generated.