**โค้ดภาษาซี**

#include <avr/io.h>

#include <avr/interrupt.h>

#define *F\_CPU* 1000000ul

#include <util/delay.h>

unsigned char row;

void blink(unsigned char num, unsigned char p );

int main(void)

{

DDRB = 0xF0;

PORTB = 0x0F;

DDRD = 0xFB;

PORTD = 0xFF;

EICRA = (1 << ISC01) | (1 << ISC00); // Falling Edge Interrupt

EIMSK = 1 << INT0; // Enable INT0

sei();

while (1)

{

PORTB = 0x0F;

sei();

}

}

ISR(INT0\_vect)

{

cli();

for(unsigned char i=0; i<3; i++)

{

PORTB = ~(1 << (6 - i));

row = PINB & 0x0F;

switch(row)

{

case 0x07: blink(1 + i, 1); break;

case 0x0B: blink(4 + i, 1); break;

case 0x0D: blink(7 + i, 1); break;

case 0x0E: if(i == 0) blink(10, 1);

else if(i == 1) blink(5, 0);

else blink(11, 1);

break;

}

}

}

void blink(unsigned char num, unsigned char p )

{

for(unsigned char i=0; i<num; i++)

{

PORTD ^= (0x01 << p);

*\_delay\_ms*(300);

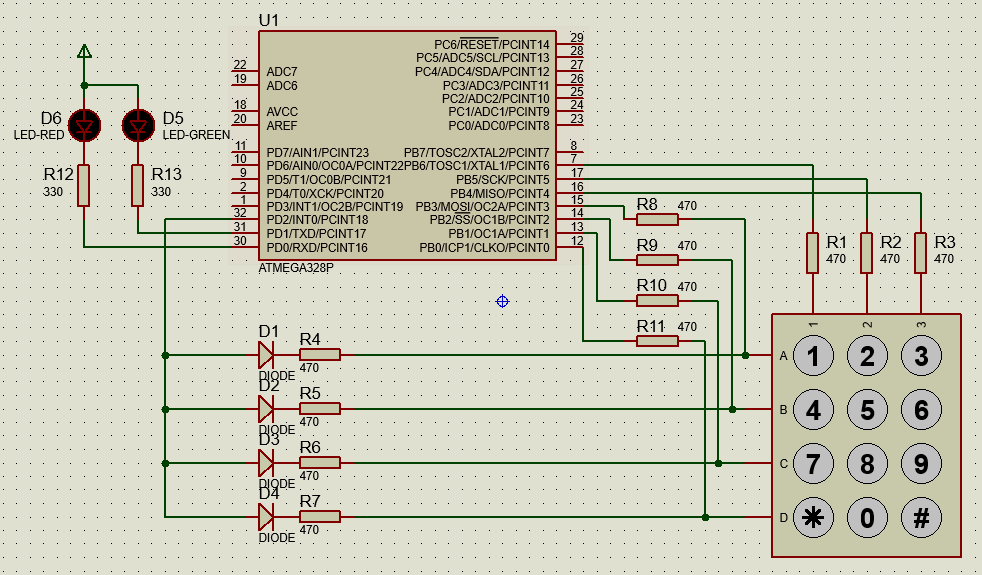
PORTD ^= (0x01 << p);

*\_delay\_ms*(300);

}

}

**ภาพวงจรบน Proteus**



**ภาพการทำงานของวงจรบน Proteus**

