```
/*
 * Timer 1 Output Compare A interrupt is used to blink LED
 */
interrupt [TIM1_COMPA] void timer1_compa_isr(void)
{
//char a,b,c,d;
cnt=(cnt+1)%50;
if (cnt==0) LED1 = ~LED1; // invert LED
//
key=read_keyboard();
if (key!=-1)
    {
    write_LED(key);
    write_PF(key);
    }
}

char read_keyboard(void)
{
// line 0 - PA0,  line 1 - PA1,  line 2 - PA2,  line 3 - PA3 - outputs
char scan[4]={0xFE,0xFD,0xFB, 0xF7};
char row,col;
char cod=0xFF;

for (row=0; row<4; row++)
{
PORTA=scan[row];
delay_us(1);
// col 0 - PA4,  col 1 - PA5,  col 2 - PA6,  col 3 - PA7 - inputs
col=PINA>>4;
if (col!=0x0F)
    {
    if (col==0x0E) col=0;
    if (col==0x0D) col=1;
    if (col==0x0B) col=2;
    if (col==0x07) col=3;
    cod=4*row+col;
    break;
    }
}
return cod;
}

void write_LED(char a)
{
// write PORTC bits 7-4 with a 4 bits value a3-a0
char val;
val=a & 0x0F;
PORTC=(PORTC & 0x0F) | (val << 4);
}
void write_PF(char a)
{
// write PORTC bits 3-0 with a 4 bits value a3-a0
char val;
val=a & 0x0F;
PORTC=(PORTC & 0xF0) | val;
}
```