

هو العليم



دانشکده مهندسی برق و رباتیک

آزمایشگاه ریزپردازنده - پیش گزارش آزمایش شماره ۲

موضوع آزمایش:

نمایش کلمه **HELP** بر روی سون سگمنت‌های مالتی پلکسر آند مشترک

اعضای گروه:

حسن رضائی نسب - شماره دانشجویی: ۹۶۲۲۷۴۳

استاد:

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ساعت آزمایشگاه:

یکشنبه ۸-۱۰

حالت اول: کلمه مورنظر نمایش داده شود

```
#include <mega8535.h>

#include <delay.h>

// Declare your global variables here


void main(void)
{
    unsigned char HELP[]={0x89, 0x86, 0xC7, 0x8C};


    // Input/Output Ports initialization

    // Port A initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRA=(1<<DDA7) | (1<<DDA6) | (1<<DDA5) | (1<<DDA4) | (1<<DDA3) | (1<<DDA2) | (1<<DDA1) |
    (1<<DDA0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTA=(0<<PORTA7) | (0<<PORTA6) | (0<<PORTA5) | (0<<PORTA4) | (0<<PORTA3) | (0<<PORTA2) |
    (0<<PORTA1) | (0<<PORTA0);


    // Port B initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRB=(1<<DDB7) | (1<<DDB6) | (1<<DDB5) | (1<<DDB4) | (1<<DDB3) | (1<<DDB2) | (1<<DDB1) |
    (1<<DDB0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTB=(0<<PORTB7) | (0<<PORTB6) | (0<<PORTB5) | (0<<PORTB4) | (0<<PORTB3) | (0<<PORTB2) |
    (0<<PORTB1) | (0<<PORTB0);


    // Port C initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRC=(1<<DDC7) | (1<<DDC6) | (1<<DDC5) | (1<<DDC4) | (1<<DDC3) | (1<<DDC2) | (1<<DDC1) |
    (1<<DDC0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTC=(0<<PORTC7) | (0<<PORTC6) | (0<<PORTC5) | (0<<PORTC4) | (0<<PORTC3) | (0<<PORTC2) |
    (0<<PORTC1) | (0<<PORTC0);


    // Port D initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
```

```
DDRD=(1<<DDD7) | (1<<DDD6) | (1<<DDD5) | (1<<DDD4) | (1<<DDD3) | (1<<DDD2) | (1<<DDD1) |  
(1<<DDD0);
```

```
// State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
```

```
PORTD=(0<<PORTD7) | (0<<PORTD6) | (0<<PORTD5) | (0<<PORTD4) | (0<<PORTD3) | (0<<PORTD2) |  
(0<<PORTD1) | (0<<PORTD0);
```

```
while (1)
```

```
{
```

```
    PORTA=0x01;
```

```
    PORTB=HELP[0];
```

```
    delay_us(10);
```

```
    PORTA=0x02;
```

```
    PORTB=HELP[1];
```

```
    delay_us(10);
```

```
    PORTA=0x04;
```

```
    PORTB=HELP[2];
```

```
    delay_us(10);
```

```
    PORTA=0x08;
```

```
    PORTB=HELP[3];
```

```
    delay_us(10);
```

```
}
```

```
}
```

حالت دوم: کلمه موردنظر به صورت چشمک‌زن (۲ ثانیه) نمایش داده شود

```
#include <mega8535.h>

#include <delay.h>

// Declare your global variables here

void main(void)
{
    unsigned char HELP[]={0x89, 0x86, 0xC7, 0x8C};
    unsigned char seven[]={0x01, 0x02, 0x04, 0x08};
    int i=0;

    bit flag=0;

    // Input/Output Ports initialization
    // Port A initialization
    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRA=(1<<DDA7) | (1<<DDA6) | (1<<DDA5) | (1<<DDA4) | (1<<DDA3) | (1<<DDA2) | (1<<DDA1) |
    (1<<DDA0);
    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTA=(0<<PORTA7) | (0<<PORTA6) | (0<<PORTA5) | (0<<PORTA4) | (0<<PORTA3) | (0<<PORTA2) |
    (0<<PORTA1) | (0<<PORTA0);

    // Port B initialization
    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRB=(1<<DDB7) | (1<<DDB6) | (1<<DDB5) | (1<<DDB4) | (1<<DDB3) | (1<<DDB2) | (1<<DDB1) |
    (1<<DDB0);
    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTB=(0<<PORTB7) | (0<<PORTB6) | (0<<PORTB5) | (0<<PORTB4) | (0<<PORTB3) | (0<<PORTB2) |
    (0<<PORTB1) | (0<<PORTB0);

    // Port C initialization
    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRC=(1<<DDC7) | (1<<DDC6) | (1<<DDC5) | (1<<DDC4) | (1<<DDC3) | (1<<DDC2) | (1<<DDC1) |
    (1<<DDC0);
    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTC=(0<<PORTC7) | (0<<PORTC6) | (0<<PORTC5) | (0<<PORTC4) | (0<<PORTC3) | (0<<PORTC2) |
    (0<<PORTC1) | (0<<PORTC0);
```

```
// Port D initialization
```

```
// Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
```

```
DDRD=(1<<DDD7) | (1<<DDD6) | (1<<DDD5) | (1<<DDD4) | (1<<DDD3) | (1<<DDD2) | (1<<DDD1) |  
(1<<DDD0);
```

```
// State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
```

```
PORTD=(0<<PORTD7) | (0<<PORTD6) | (0<<PORTD5) | (0<<PORTD4) | (0<<PORTD3) | (0<<PORTD2) |  
(0<<PORTD1) | (0<<PORTD0);
```

```
while (1)
```

```
{
```

```
    if (flag==0){
```

```
        PORTA=0x01;
```

```
        PORTB=HELP[0];
```

```
        delay_us(100);
```

```
        i++;
```

```
        PORTA=0x02;
```

```
        PORTB=HELP[1];
```

```
        delay_us(100);
```

```
        i++;
```

```
        PORTA=0x04;
```

```
        PORTB=HELP[2];
```

```
        delay_us(100);
```

```
        i++;
```

```
        PORTA=0x08;
```

```
        PORTB=HELP[3];
```

```
        delay_us(100);
```

```
        i++;
```

```
        if (i==20000){
```

```
            flag=1;
```

```
        }}
```

```
    if(flag==1){  
        i=0;  
        PORTA=0;  
        PORTB=0;  
        delay_ms(2000);  
        flag=0;  
    }  
}  
}
```

حالت سوم: کلمه موردنظر به سبک تابلوی روان نمایش داده شود

```
#include <mega8535.h>

#include <delay.h>

// Declare your global variables here


void main(void)
{
    unsigned char HELP[]={0x89, 0x86, 0xC7, 0x8C};
    unsigned char seven[]={0x01, 0x02, 0x04, 0x08};
    int i=0;
    int j=0;
    bit flag=0;


    // Input/Output Ports initialization

    // Port A initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRA=(1<<DDA7) | (1<<DDA6) | (1<<DDA5) | (1<<DDA4) | (1<<DDA3) | (1<<DDA2) | (1<<DDA1) |
    (1<<DDA0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTA=(0<<PORTA7) | (0<<PORTA6) | (0<<PORTA5) | (0<<PORTA4) | (0<<PORTA3) | (0<<PORTA2) |
    (0<<PORTA1) | (0<<PORTA0);


    // Port B initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRB=(1<<DDB7) | (1<<DDB6) | (1<<DDB5) | (1<<DDB4) | (1<<DDB3) | (1<<DDB2) | (1<<DDB1) |
    (1<<DDB0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTB=(0<<PORTB7) | (0<<PORTB6) | (0<<PORTB5) | (0<<PORTB4) | (0<<PORTB3) | (0<<PORTB2) |
    (0<<PORTB1) | (0<<PORTB0);


    // Port C initialization

    // Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
    DDRC=(1<<DDC7) | (1<<DDC6) | (1<<DDC5) | (1<<DDC4) | (1<<DDC3) | (1<<DDC2) | (1<<DDC1) |
    (1<<DDC0);

    // State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
    PORTC=(0<<PORTC7) | (0<<PORTC6) | (0<<PORTC5) | (0<<PORTC4) | (0<<PORTC3) | (0<<PORTC2) |
    (0<<PORTC1) | (0<<PORTC0);
```

```
// Port D initialization
```

```
// Function: Bit7=Out Bit6=Out Bit5=Out Bit4=Out Bit3=Out Bit2=Out Bit1=Out Bit0=Out
```

```
DDRD=(1<<DDD7) | (1<<DDD6) | (1<<DDD5) | (1<<DDD4) | (1<<DDD3) | (1<<DDD2) | (1<<DDD1) |  
(1<<DDD0);
```

```
// State: Bit7=0 Bit6=0 Bit5=0 Bit4=0 Bit3=0 Bit2=0 Bit1=0 Bit0=0
```

```
PORTD=(0<<PORTD7) | (0<<PORTD6) | (0<<PORTD5) | (0<<PORTD4) | (0<<PORTD3) | (0<<PORTD2) |  
(0<<PORTD1) | (0<<PORTD0);
```

```
while (1)
```

```
{
```

```
    if (i==0){
```

```
        PORTA=0x01;
```

```
        PORTB=HELP[0];
```

```
        delay_ms(1000);
```

```
        i=1;
```

```
    }
```

```
    if (i==1){
```

```
        PORTA=0x01;
```

```
        PORTB=HELP[0];
```

```
        delay_us(100);
```

```
        j++;
```

```
        PORTA=0x02;
```

```
        PORTB=HELP[1];
```

```
        delay_us(100);
```

```
        j++;
```

```
        if (j==10000){
```

```
            i=2;
```

```
            j=0;
```

```
        }}
```

```
    if (i==2){
```

```
        PORTA=0x01;
```

```
        PORTB=HELP[0];
```

```
        delay_us(100);
```



```
j++;

PORTA=0x02;
PORTB=HELP[1];
delay_us(100);
j++;

PORTA=0x04;
PORTB=HELP[2];
delay_us(100);
j++;

if (j==10000){
    i=3;
    j=0;
}

}

if (i==3){
    PORTA=0x01;
    PORTB=HELP[0];
    delay_us(100);
    j++;

    PORTA=0x02;
    PORTB=HELP[1];
    delay_us(100);
    j++;

    PORTA=0x04;
    PORTB=HELP[2];
    delay_us(100);
    j++;

    PORTA=0x08;
```

```
PORTB=HELP[3];
delay_us(100);
j++;

if (j==10000){
    i=4;
    j=0;
}

}

if (i==4){

PORTA=0x02;
PORTB=HELP[1];
delay_us(100);
j++;

PORTA=0x04;
PORTB=HELP[2];
delay_us(100);
j++;

PORTA=0x08;
PORTB=HELP[3];
delay_us(100);
j++;

if (j==10000){
    i=5;
    j=0;
}

}
```

```
if (i==5){

    PORTA=0x04;
    PORTB=HELP[2];
    delay_us(100);
    j++;

    PORTA=0x08;
    PORTB=HELP[3];
    delay_us(100);
    j++;

    if (j==10000){
        i=6;
        j=0;
    }

}

if (i==6){

    PORTA=0x08;
    PORTB=HELP[3];
    delay_ms(0100);
    i=0;
    j=0;

}

}

}
```