

**دانشکده مهندسی برق و رباتیک**

**آزمایشگاه ریزپردازنده - پیش­گزارش آزمایش شماره 2**

**موضوع آزمایش:**

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

**اعضای گروه:**

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**استاد:**

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**ساعت آزمایشگاه:**

**یکشنبه 10-8**

**حالت اول: کلمه مورنطر 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(2 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;

}

}

}