**LAB 2**

**A-1)** Hi You Did Good Job Word by Word

# include <reg52.h>

#define uint unsigned int,

#define uchar unsigned char

void delay(uint z) // Delay Function

{

uint x, y;

for(x=z; x>0; x--)

for(y=415; y>0; y--);

}

void bitOff(uchar D) //Switch Off D1-D4

{

if(D==1) P2=0xFF;

if(D==2) P2=0xFF;

if(D==3) P2=0xFF;

if(D==4) P2=0xFF;

}

void sevenSegmentNum(uchar num) // Declaration Of seven segment function,

{

switch(num)

{

case 0: //Case for 0

{

P1=0xC0;

break;

}

case 1: //Case for 1

{

P1=0xF9;

break;

}

case 2: //Case for 2

{

P1=0xA4;

break;

}

case 3: //Case for 3

{

P1=0xB0;

break;

}

case 4:

//Case for 4

{

P1=0x99;

break;

}

case 5: //Case for 5

{

P1=0x92;

break;

}

case 6: //Case for 6

{

P1=0x82;

break;

}

case 7: //Case for 7

{

P1=0xF8;

break;

}

case 8: //Case for 8

{

P1=0x80;

break;

}

case 9: //Case for 9

{

P1=0x98;

break;

}

}

}

void sevenSegmentChar(uchar alph)

{

switch(alph)

{

case 0: //Case for a

{

P1=0xA0;

break;

}

case 1: //Case for b

{

P1=0x83;

break;

}

case 2: //Case for c

{

P1=0xA7;

break;

}

case 3: //Case for d

{

P1=0xA1;

break;

}

case 4: //Case for e

{

P1=0x86;

break;

}

case 5: //Case for f

{

P1=0x8E;

break;

}

case 6: //Case for g

{

P1=0x90;

break;

}

case 7: //Case for h

{

P1=0x8B;

break;

}

case 8: //Case for i

{

P1=0xFB;

break;

}

case 9: //Case for j

{

P1=0xF1;

break;

}

case 10: //Case for k

{

P1=0x8F;

break;

}

case 11: //Case for l

{

P1=0xC7;

break;

}

case 12: //Case for m

{

P1=0xAA;

break;

}

case 13: //Case for n

{

P1=0xAB;

break;

}

case 14: //Case for o

{

P1=0xA3;

break;

}

case 15: //Case for p

{

P1=0x8C;

break;

}

case 16: //Case for q

{

P1=0x9A;

break;

}

case 17: //Case for r

{

P1=0xAF;

break;

}

case 18: //Case for s

{

P1=0x92;

break;

}

case 19: //Case for t

{

P1=0x87;

break;

}

case 20: //Case for u

{

P1=0xE3;

break;

}

case 21: //Case for v

{

P1=0xC1;

break;

}

case 22: //Case for w

{

P1=0x81;

break;

}

case 23: //Case for x

{

P1=0xB9;

break;

}

case 24: //Case for y

{

P1=0x8D;

break;

}

case 25: //Case for z

{

P1=0xB3;

break;

}

}

}

void bitSel(uchar D) //Select D1-D4

{

switch(D)

{

case 1: //Select D1

{

P2=0xFE;

break;

}

case 2: //Select D2

{

P2=0xFD;

break;

}

case 3: //Select D3

{

P2=0xFB;

break;

}

case 4: //Select D4

{

P2=0xF7;

break;

}

}

}

void one(uint i)

{

uint refresh = 100;

uint counter = refresh;

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

{

// hi

bitSel(1); //Select one bit D3

sevenSegmentChar(7);

delay(3);

bitSel(2); //Select two bit D3

sevenSegmentChar(8);

delay(3);

}

counter = refresh;

// you

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

{

// 24, 14, 20

bitSel(1); //Select one bit D3

sevenSegmentChar(24);

delay(2);

bitSel(2); //Select two bit D3

sevenSegmentChar(14);

delay(2);

bitSel(3); //Select two bit D3

sevenSegmentChar(20);

delay(2);

}

counter = refresh;

// did

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

{

bitSel(1); //Select one bit D3

sevenSegmentChar(3);

delay(2);

bitSel(2); //Select two bit D3

sevenSegmentChar(8);

delay(2);

bitSel(3); //Select two bit D3

sevenSegmentChar(3);

delay(2);

}

counter = refresh;

// // good

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

{

bitSel(1); //Select one bit D3

sevenSegmentChar(6);

delay(1);

bitSel(2); //Select two bit D3

sevenSegmentChar(14);

delay(1);

bitSel(3); //Select two bit D3

sevenSegmentChar(14);

delay(1);

bitSel(4); //Select two bit D3

sevenSegmentChar(3);

delay(1);

}

counter = refresh;

//

// // job

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

{

bitSel(1); //Select two bit D3

sevenSegmentChar(9);

delay(2);

bitSel(2); //Select two bit D3

sevenSegmentChar(14);

delay(2);

bitSel(3); //Select two bit D3

sevenSegmentChar(1);

delay(2);

}

}

**A-2) Right to Shift in**

Again the declaration are same as in answer 1 so just copied the main function but during compiling I had all of those this is just for the word file just the word file doesnot became too big.

Main void(),

{

//drag from right to left

uint refresh = 50;

uint counter = refresh;

// h

bitSel(4);

sevenSegmentChar(7);

delay(400);

// hi

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

{

bitSel(3);

sevenSegmentChar(7);

delay(3);

bitSel(4);

sevenSegmentChar(8);

delay(3);

}

// hi\_

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

{

bitSel(2);

sevenSegmentChar(7);

delay(2);

bitSel(3);

sevenSegmentChar(8);

delay(2);

bitSel(4);

bitOff(4);

delay(2);

}

// hi\_y

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

{

bitSel(1);

sevenSegmentChar(7);

delay(1);

bitSel(2);

sevenSegmentChar(8);

delay(1);

bitSel(3);

bitOff(3);

delay(1);

bitSel(4);

sevenSegmentChar(24);

delay(1);

}

// i\_yo

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

{

bitSel(1);

sevenSegmentChar(8);

delay(1);

bitSel(2);

bitOff(2);

delay(1);

bitSel(3);

sevenSegmentChar(24);

delay(1);

bitSel(4);

sevenSegmentChar(14);

delay(1);

}

// \_you

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

{

bitSel(1);

bitOff(1);

delay(1);

bitSel(2);

sevenSegmentChar(24);

delay(1);

bitSel(3);

sevenSegmentChar(14);

delay(1);

bitSel(4);

sevenSegmentChar(20);

delay(1);

}

// you\_

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

{

bitSel(1);

sevenSegmentChar(24);

delay(1);

bitSel(2);

sevenSegmentChar(14);

delay(1);

bitSel(3);

sevenSegmentChar(20);

delay(1);

bitSel(4);

bitOff(4);

delay(1);

}

// ou\_d

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

{

bitSel(1);

sevenSegmentChar(14);

delay(1);

bitSel(2);

sevenSegmentChar(20);

delay(1);

bitSel(3);

bitOff(3);

delay(1);

bitSel(4);

sevenSegmentChar(3);

delay(1);

}

// u\_di

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

{

bitSel(1);

sevenSegmentChar(20);

delay(1);

bitSel(2);

bitOff(2);

delay(1);

bitSel(3);

sevenSegmentChar(3);

delay(1);

bitSel(4);

sevenSegmentChar(8);

delay(1);

}

// \_did

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

{

bitSel(1);

bitOff(1);

delay(1);

bitSel(2);

sevenSegmentChar(3);

delay(1);

bitSel(3);

sevenSegmentChar(8);

delay(1);

bitSel(4);

sevenSegmentChar(3);

delay(1);

}

// did\_

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

{

bitSel(1);

sevenSegmentChar(3);

delay(1);

bitSel(2);

sevenSegmentChar(8);

delay(1);

bitSel(3);

sevenSegmentChar(3);

delay(1);

bitSel(4);

bitOff(4);

delay(1);

}

// id\_g

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

{

bitSel(1);

sevenSegmentChar(8);

delay(1);

bitSel(2);

sevenSegmentChar(3);

delay(1);

bitSel(3);

bitOff(3);

delay(1);

bitSel(4);

sevenSegmentChar(6);

delay(1);

}

// d\_go

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

{

bitSel(1);

sevenSegmentChar(3);

delay(1);

bitSel(2);

bitOff(2);

delay(1);

bitSel(3);

sevenSegmentChar(6);

delay(1);

bitSel(4);

sevenSegmentChar(14);

delay(1);

}

// \_goo

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

{

bitSel(1);

bitOff(1);

delay(1);

bitSel(2);

sevenSegmentChar(6);

delay(1);

bitSel(3);

sevenSegmentChar(14);

delay(1);

bitSel(4);

sevenSegmentChar(14);

delay(1);

}

// good

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

{

bitSel(1);

sevenSegmentChar(6);

delay(1);

bitSel(2);

sevenSegmentChar(14);

delay(1);

bitSel(3);

sevenSegmentChar(14);

delay(1);

bitSel(4);

sevenSegmentChar(3);

delay(1);

}

// ood\_

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

{

bitSel(1);

sevenSegmentChar(14);

delay(1);

bitSel(2);

sevenSegmentChar(14);

delay(1);

bitSel(3);

sevenSegmentChar(3);

delay(1);

bitSel(4);

bitOff(4);

delay(1);

}

// od\_j

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

{

bitSel(1);

sevenSegmentChar(14);

delay(1);

bitSel(2);

sevenSegmentChar(3);

delay(1);

bitSel(3);

bitOff(3);

delay(1);

bitSel(4);

sevenSegmentChar(9);

delay(1);

}

// d\_jo

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

{

bitSel(1);

sevenSegmentChar(3);

delay(1);

bitSel(2);

bitOff(2);

delay(1);

bitSel(3);

sevenSegmentChar(9);

delay(1);

bitSel(4);

sevenSegmentChar(14);

delay(1);

}

// \_job

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

{

bitSel(1);

bitOff(2);

delay(1);

bitSel(2);

sevenSegmentChar(9);

delay(1);

bitSel(3);

sevenSegmentChar(14);

delay(1);

bitSel(4);

sevenSegmentChar(1);

delay(1);

}

**A-3) Display from 0000-9999**

Again the declaration are same as in answer 1 so just copied the main function but during compiling I had all of those this is just for the word file just the word file doesnot became too big.

Main void(),

{

// 10-99

int h, i, j, r, t, repeat;

j = 0;

repeat = 1;

for(t = 0; t < 10; t++)

{

for(h = 0; h < 10; h++)

{

for(i = 0; j < 10; i++)

{

for(r = 0; r < repeat; r++)

{

bitSel(1);

sevenSegmentNum(t);

delay(1);

bitSel(2);

sevenSegmentNum(h);

delay(1);

bitSel(3);

sevenSegmentNum(j);

delay(1);

bitSel(4);

sevenSegmentNum(i);

delay(1);

}

if(i == 9)

{

// set i to -1 because of increment

i = -1;

j++;

}

}

j = 0;

}

h = 0;

}

}

void main ()

{

uchar i; //Declare loop index

while(1)

{

one(i);

//two(i);

//three();

}

}

}