

Wave drive

include <reg52.h>

include <stdio.h>

void delay (int);

void main ()

{

do

{

i2 = 0x01; // 0001

delay (1000);

i2 = 0x02; // 0010

delay (1000);

i2 = 0x04; // 0100

delay (1000);

i2 = 0x08; // 1000

delay (1000);

}

while (1);

{

void delay (int k)

{

int i, j;

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

{

for (j=0; j<100; j++)

}

}

Full drive

```
#include <reg 52.h>
```

```
#include <stdio.h>
```

```
void delay (int);
```

```
void main ();
```

```
{
```

```
do {
```

```
P2 = 0x03; // 0011
```

```
delay (1000);
```

```
P2 = 0x06; // 0110
```

```
delay (1000);
```

```
P2 = 0x09; // 1001
```

```
delay (1000);
```

```
P2 = 0x0C; // 1100
```

```
delay (1000);
```

```
}
```

```
while (1);
```

```
}
```

```
void delay (int A)
```

```
{
```

```
int i, j;
```

```
for (j = 0; j < 100; j++)
```

```
{
```

```
for (i = 0; i < 100; i++)
```

```
{
```

Half drive

#include <reg52.h>

#include <stdio.h>

void delay (int);

void main ()

{

do

{

P2 = 0x01; // 0001

delay (1000);

P2 = 0x03; // 0011

delay (1000);

P2 = 0x02; // 0010

delay (1000);

P2 = 0x06; // 01010

delay (1000);

P2 = 0x04; // 01000

delay (1000);

P2 = 0x0c; // 1100

delay (100);

P2 = 0x08; // 1000

delay (100);

P2 = 0x09; // 1100

delay (100);

}

while (1);

{

void delay (int k)

{

int i, j;

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

{ for (j = 0; j < 100; j++)

{

{

Display messages Fire and help alternatively with flickering effects on a 7-segment display interface for a suitable period of time. Ensure flickering rate that makes it easy to read both the messages.

```
#include <stdio.h>
#include <reg51.h>
char xdata countw_at_0xe803;
char xdata portB_at_0xe801;
char xdata portC_at_0xe802;
char portC[20] = {0x8c, 0xf9, 0xd0,
                  0x86, 0xff, 0xff,
                  0xff, 0xff, 0x89,
                  0x86, 0xc7, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c, 0x8c};
```

```
delay ( )
{
```

```
    long u;
```

```
    for (u = 0; u < 8000; u++); }
```

```
void main ( )
```

```
{ int d, b, j, m;
```

```
  unsigned char k;
```

```
  countw = 0x20;
```

```
do {
```

```
  i = 0;
```

```
  for (d = 0; d < 3; d++) {
```

```
    for (b = 0; b < 4; b++)
```

```
      { k = portC[i++];
```

```
        for (j = 0; j < 8; j++)
```

```
          {
```

R = 14 20x80;

{ if (R == 00)

port B = 0x00;

else

port B = 0x01; }

port C = 0x00;

R = m

A < C = 1; }

delay(C);

}

}

while (1);

}

Program to demo the elevator interface

```
#include <stdio.h>
```

```
#include <reg 51.h>
```

```
unsigned char readdata command word - at  
- 0xc803;
```

```
unsigned char readdata Port A - at 0xc80a;
```

```
unsigned char readdata Port B - at 0xc80f;
```

```
unsigned char readdata presentation, requested  
floor, stop - up
```

```
unsigned long readdata Count 1;
```

```
Relay ()
```

```
{  
for (Count = 0; Count <= 6500; Count++)  
return 0;  
}
```

```
Reset ()
```

```
{  
Step = step 2 0xc0f;  
Port A = Step;  
Step = Step 1 0xc0a;  
Port A = Step;  
return 0;  
}
```

```
Count ()
```

```
{  
Switch (Requested Floor)  
{  
case 0x0d: while (Step < 0xf3)  
{  
Step++;  
}
```



```

    Port A = Step;
    Delay (1);
}
Reset (1);
break;
case 0x06 : while (Step < 0x06)
{
    Step++;
    Port A = Step;
    Delay (1);
}
Reset (1);
break;
case 0x07 : while (Step < 0x07)
{
    Step++;
    Port A = Step;
    Delay (1);
}
Reset (1);
break;
}
return 0;
}
GoDown()
{
    Switch (Requested Floor)
    {
        case 0x00 : while (Step < 0x03)
            Step--;
        Port A = Step;
        Delay (1);
    }
}

```

}

Reset ();

break;

Case 0x0b : while (Step > 0x0f0)

{

Step --;

Port A = Step;

Delay ();

}

Reset ();

break;

Case 0x0c : while (Step > 0x0f0)

{

Step --;

Port A = Step;

Delay ();

}

Reset ();

break;

}

return 0;

}

void main ()

{

CommandWord = 0x82;

Port A = 0x0;

Present Floor = 0x0;

while (1) {

Requested Floor = Port B;

Requested Floor = Requested Floor & 0x0f;

if (Requested floor != 0 or 1 & Requested floor != Present Floor)

if (Requested Floor > Present Floor)

Group (C);

else

Go Down (C);

Present Floor = Requested Floor;

}

Requested Floor = Part B;

}

}

Display messages BANG! ALOE in rolling fashion on a 7-segment display interface for a suitable period of time.

```
#include <stdio.h>
```

```
#include <reg51.h>
```

```
char xdata column = at - 0x803;
```

```
char xdata portB = at - 0x801;
```

```
char xdata portC = at - 0x802;
```

```
char port[20] = {0xff, 0xff, 0xff,  
0xc0, 0x83, 0xc8, 0xc0, 0xc3, 0xc7,  
0xc6, 0xaf, 0x86, 0};
```

```
delay ( )
```

```
{
```

```
long u;
```

```
for ( u = 0; u < 4000; u++ );
```

```
return 0;
```

```
}
```

```
void main ( )
```

```
{
```

```
int d, b, j, m;
```

```
unsigned char B;
```

```
column = 0x80;
```

```
do
```

```
{
```

```
    i = 0;
```

```
    for ( d = 0; d < i; d++ )
```

```
    {
```

```
        for ( b = 13; b > 0; b-- )
```

```
        {
```

```
            delay ( );
```

```
R = part [i++];  
for (j = 0; j < 6; j++)  
{
```

```
    m = R;
```

```
    B = R * 80;
```

```
}
```

```
if (R == 00)
```

```
    part B = 00000;
```

```
else
```

```
    part B = 00001;
```

```
}
```

```
part C = 00001;
```

```
part C = 00000;
```

```
R = m;
```

```
R < 1 = 1;
```

```
}
```

```
}
```

```
delay (1);
```

```
}
```

```
}
```

```
while (1);
```

```
}
```

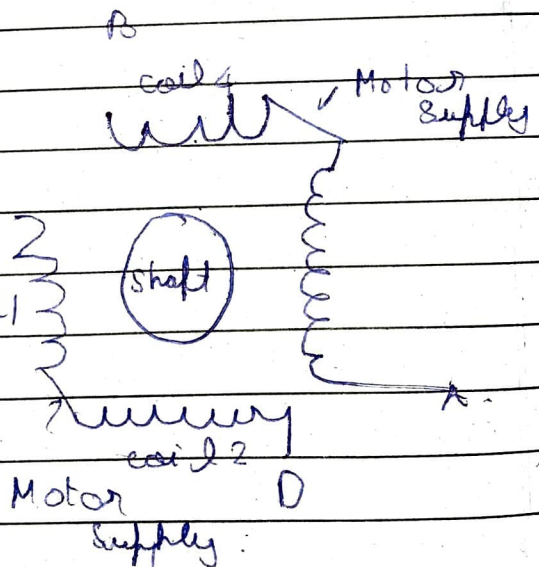

Stepper Motor = (Clock-wise)

```
#include <stdio.h>
#include <reg 51.h>
char xdata port -at 0xe803;
char xdata port -at 0xe800;
char xdata acc -at 0xe30;
```

```
delay() {
    int i;
    for (i = 0; i < 300; i++)
        ;
}
```

```
{
void main()
{
```

```
    port = 0xe80;
    while (1) {
        acc = 0xe88;
        port a = acc;
        delay();
        acc = 0xe44;
        port a = acc;
        delay();
        acc = 0xe72;
        port a = acc;
        delay();
        acc = 0xe11;
        port a = acc;
        delay();
    }
}
```



Drive a stepper motor interface to rotate the motor in anti-clockwise by 11 steps. Introduce suitable delay between successive steps.

```
#include <stdio.h>
```

```
#include <reg51.h>
```

```
char outdata port = 0x00;
```

```
char outdata port a = 0x00;
```

```
char outdata acc = 0x00;
```

```
delay()
```

```
{
```

```
int
```

```
for (j = 0; j < 800; j++)
```

```
{
```

```
return 0;
```

```
}
```

```
void main()
```

```
{
```

```
port = 0x00;
```

```
while (1)
```

```
{
```

```
acc = 0x01;
```

```
port a = acc;
```

```
delay();
```

```
acc = 0x02;
```

```
port a = acc;
```

```
delay();
```

```
acc = 0x04;
```

```
port a = acc;
```

```
delay();
```

```
a(c = 0xc88;  
port a = acc;  
delay C); }
```

Diagram

