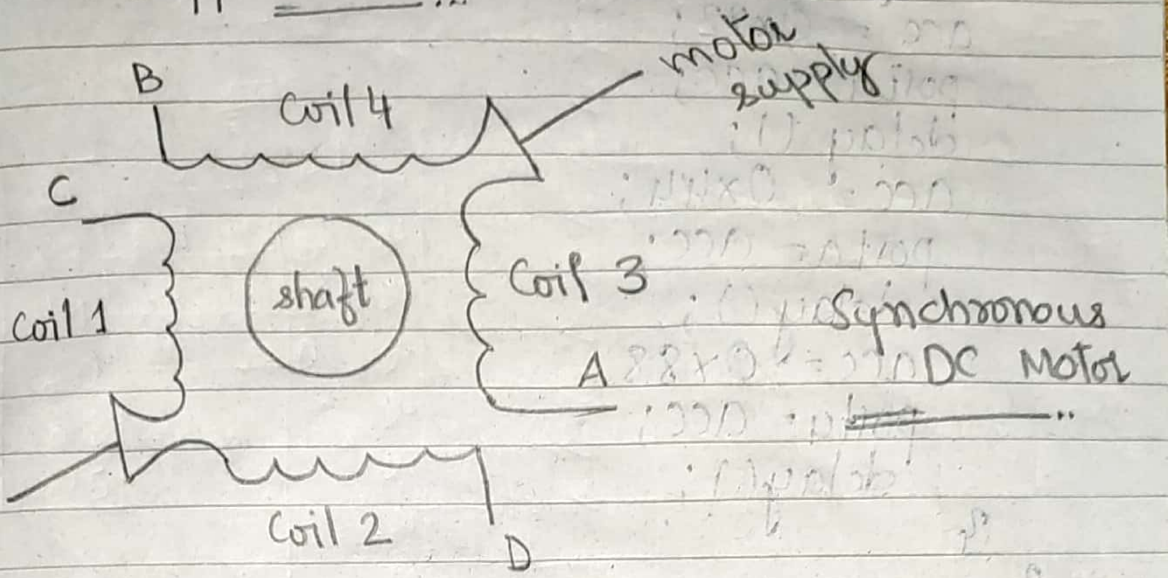
PROGRAM:01)

stepper Motor...

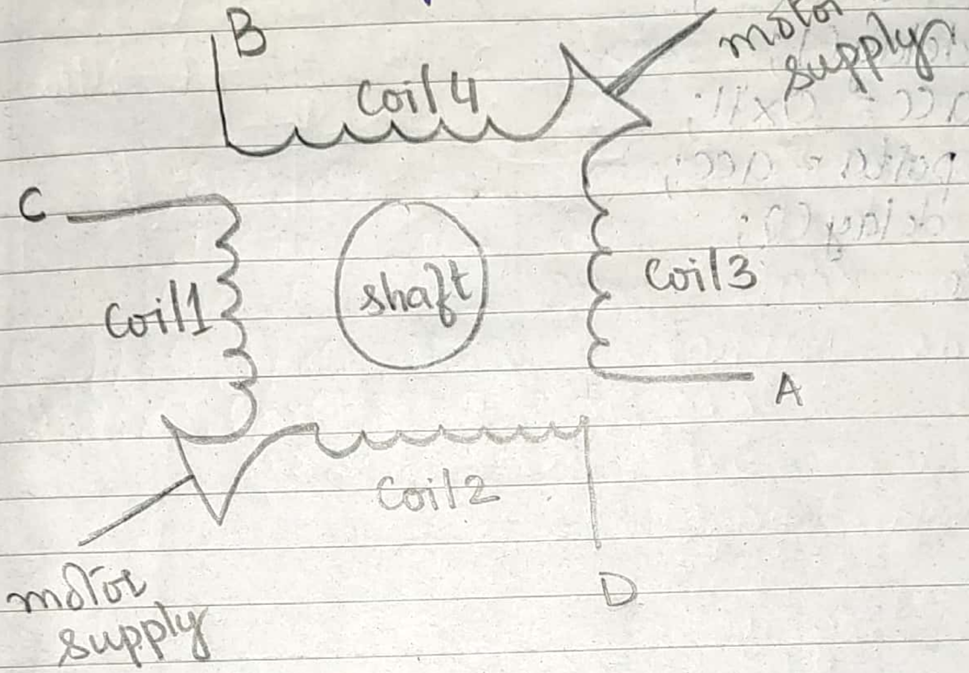


Drive a Stepper Motor interface to rotate the motor in Anti-clock wise by N steps.. Introduce suitable delay between successive steps.

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

char xdata port_at_0xe803;
char xdata port_at_0xe800;
char idata acc_at_0x30;

delay() {
    int j;
    for ( j=0; j< 800; j++)
            { }
  }

void main() {
   port= 0x80;
     while (1)  {
              acc = 0x11;
              porta = acc;
delay();
 acc = 0x22;
  porta = acc;
  delay ();
   acc = 0x44;
    porta= acc;
     delay();
     acc = 0x88
     porta = acc;
      delay();
 }
}
```

PROGRAM: 2)

Derive a Stepper Motor interface to rotate the motor in clockwise by N steps Introduce suitable delay between successive steps:



```
#include <stdio.h>
# include<reg51.h>
char xdata port _at_ 0xe803;
char xdata porta _at_ 0xe800;
~~char xdata idata port~~
char idata acc _at_ 0x30;

delay() {
        int j;
        for (j=0; j<800; j++)
              { }
    }

void main() {
        port = 0x80;
        while (1) {
                acc = 0x88;
                porta = acc;
delay();
 acc = 0x44;
  porta = acc;
   delay();
   acc = 0x22;
    porta = acc;
     delay();
     acc = 0x11;
      porta = acc;
       delay();
     }
 }
```

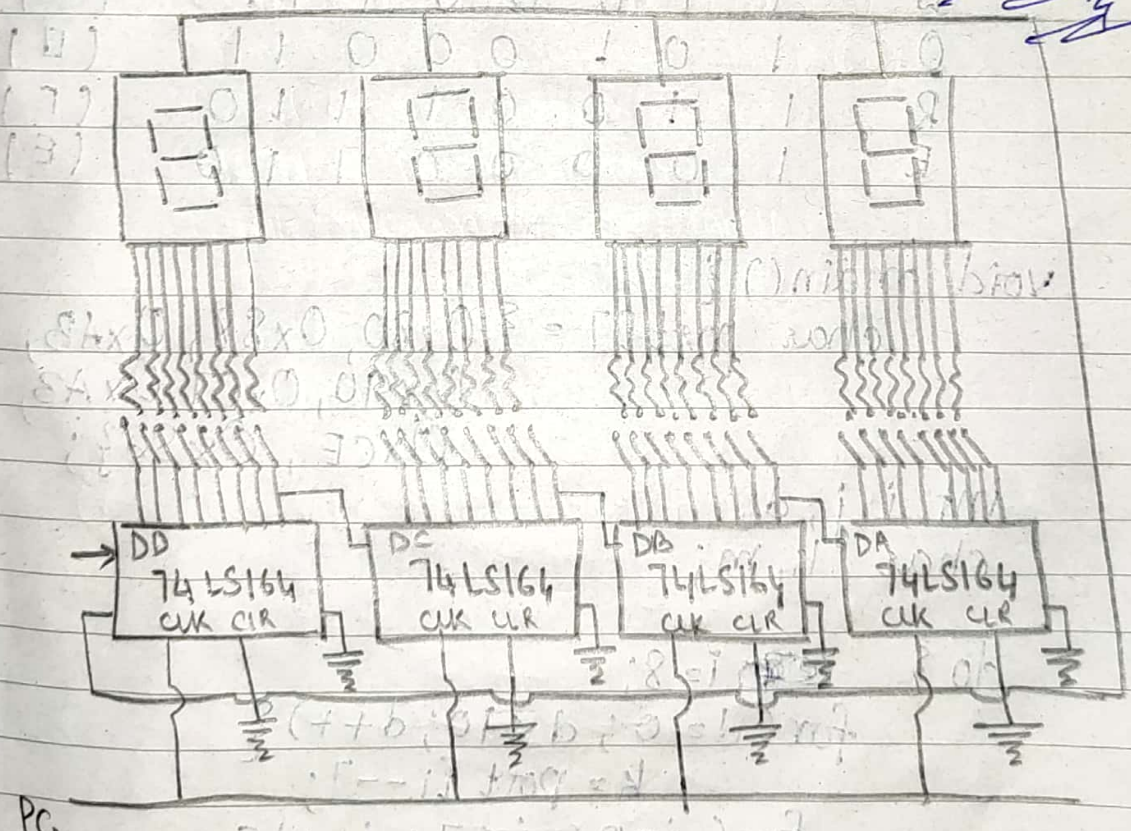
Micro Controller (8051) Program: 3

Common Cathode Type 7 Segment Display to display HELP & FIRE.

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

char xdata CommW_at_0xe803;
char xdata portB_at_0xe801;
char xdata portC_at_0xe802;

delay () {
        long u;
            for (u=0; u<8000; u++);
}

void main() {
        int d, b, j, m;
        unsigned char k;
        CommW = 0x80;
    do {
        i=0;
        for( d=0; d<3; d++) {
            for ( b=0; b<4; b++) {

                k= port[i++];
                for (j=0; j<8; j++){

                    m=k;
                    k=k&0x80;
                    {
                        if (k==00)
                            portB=0x00;
                    else
                            portB= 0x01;
                    }
```

```
             portB = 0x01;
          }
     port C = 0x01;
     port C = 0x00;

      k = m;
      k << = 1;
    }
  }
 delay();
  }
 }
  while(1);
}
```

1BM19CS127



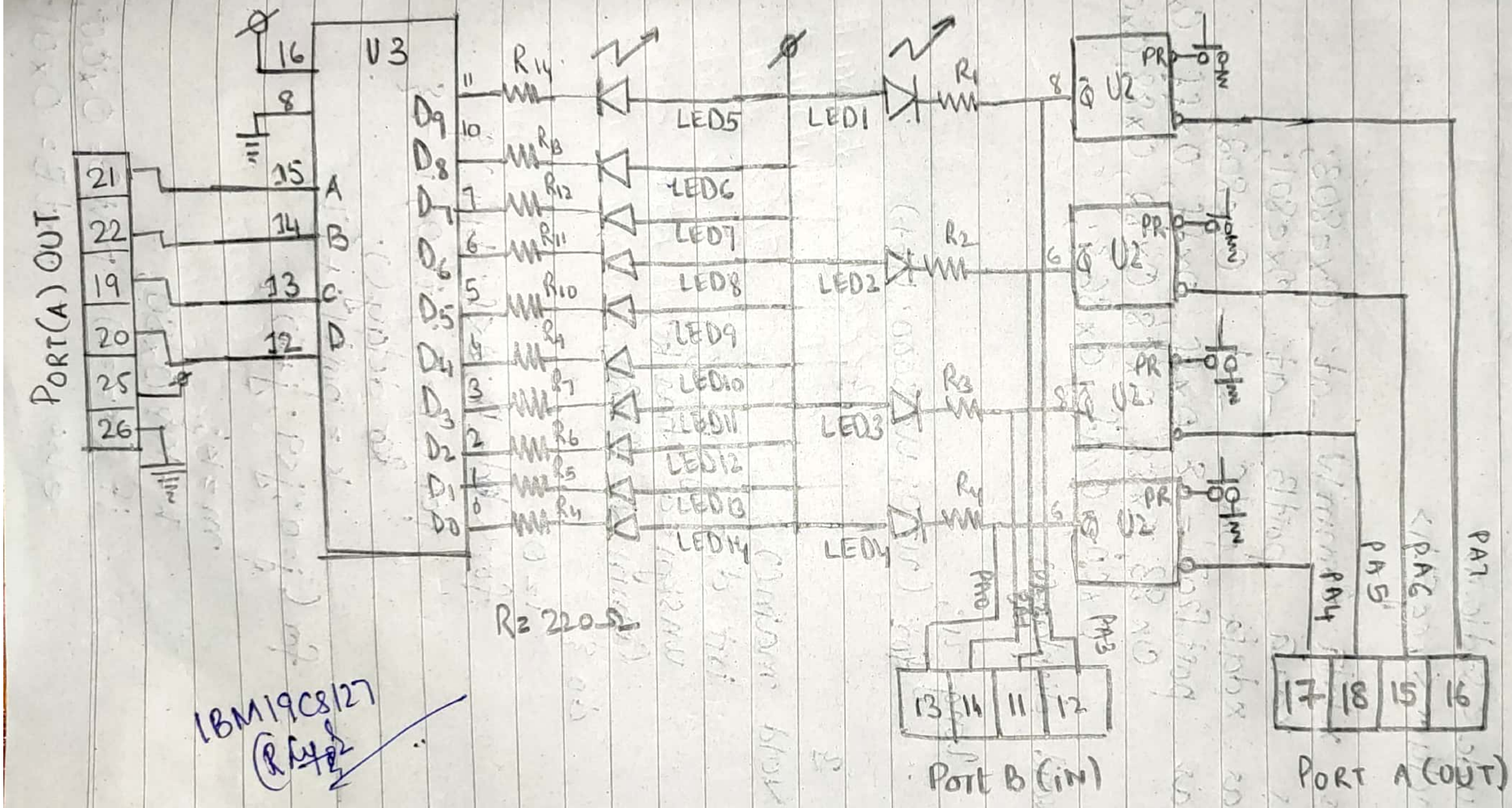
PROGRAM: 04

Display message BANGLORE in rolling fasion on 7- segment display. interface for a suitable period of time.

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

char xdata CommW _at_ 0xe803;
char xdata portB _at_ 0xe801;
char xdata portC _at_ 0xe802;
char port[20] = { 0xff, 0xff, 0xff, 0xff,
          0x83, 0x88, 0xC8, 0x82, 0x88, 0xC7,
           0xC0, 0xaf, 0x86 };
 void display()
 {
   long u;
      for (u=0; u<8000; u++)
              { }
   }
 void main() {
       int d,b,j,m,i;
       unsigned char k;
       CommW= 0x80;
    do {
         i=0;
         for (d= 0 ;d<l;d++){
             for ( b=13; i>0; i--){
                 delay();
                 k = port[i++];
       for (j=0;j<9;j++){

              m=k;
              k=k& 0x80;
              if (k==0)  portB= 0x00;
              else       portB= 0x01;
      port C = 0x01;
       port C = 0x00;

       k= m;
        k <<=1;
       }
     }
          delay();
        }
    } while(1);
  }
```

Program 05: To Demo the elevator Interface

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

unsigned char xdataCommandWord _at_ 0xe803
unsigned char xdataPortA _at_ 0xe800;
unsigned char xdataPortB _at_ 0xe801;
unsigned char xdataPresentFloor ,
          RequestedFloor , step = 0xf0;

unsigned long xdataCount, i;

Delay() {
    for(Count =0; Count <= 4500; Count ++)
  }

Reset() {
        Step = Step & 0x0f;
        PortA = Step;
        Step = Step | 0xf0;
        PortA = Step;
  }

 GoUp() {
   switch (RequestedFloor){

 case 0x0d: while (Step < 0xf3){
          step++;
        PortA = Step;
        Delay();
   }
  Reset();
  break;
case 0x0b:   while(Step < 0xf6){
                 Step++;
           PortA= Step;
           Delay();
        }
      Reset();
      break;

    case 0x07 :  while (step <0xf9) {
                  Step++
           PortA = Step;
           Delay();
        }
         Reset();
         break;
     }
   }

   GoDown(){
         case 0x0d: while(Step > 0xf3){
                 step--;
             PortA= Step;
               Delay();
            }
        Reset();
        break;

          Case 0x0b:  while(Step >0xf6){
                 step--;
             PortA = Step ;
               Delay();
            }
        Reset();
        break;
    case 0x0e : while (Step > 0xf0) {
                Step --;
          PortA = Step;
           Delay ();
        }
       Reset ();
        break;
   }
}

void main() {

       CommandWord = 0x82;
        PortA = 0xf0;
        PresentFloor = 0x0e;
        while(1){

         RequestedFloor = PortB;
          RequestedFloor = RequestedFloor & 0x0f;

 if (RequestedFloor != 0x0f && RequestedFloor
                    != PresentFloor) {

         if (RequestedFloor < PresentFloor)

               GoUp();
       else
               GoDown();
     PresentFloor = RequestedFloor;
    }
   RequestedFloor = PortB;
}
```



1BM19C8127

PROGAM5) ELEVATOR INTERFACE.