7.1.21

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Program 5: Demo the elevator interface

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

unsigned char xdata CommandWord _ at _ 0xe803;
unsigned char xdata PortA _ at _ 0xe800;
unsigned char xdata PortB _ at _ 0xe801;
unsigned char xdata PresentFloor, RequestedFloor, Step = 0xf0;
unsigned long xdata Count, 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()
{
 switch (Requested Floor)
    {
       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()
 {
Command Word = 0x82;
PortB = 0xf0;
Present Floor = PortB;
RequestedFloor = RequestedFloor & 0x0f;

if(RequestedFloor != 0x0f && RequestedFloor != PresentFloor){
        if (RequestedFloor < PresentFloor)
              GoUp();
        else
              GoDown();
    PresentFloor = RequestedFloor;
      }
    RequestedFloor = PortB;
  }
```

Experiment 5 :- Circuit Diagram