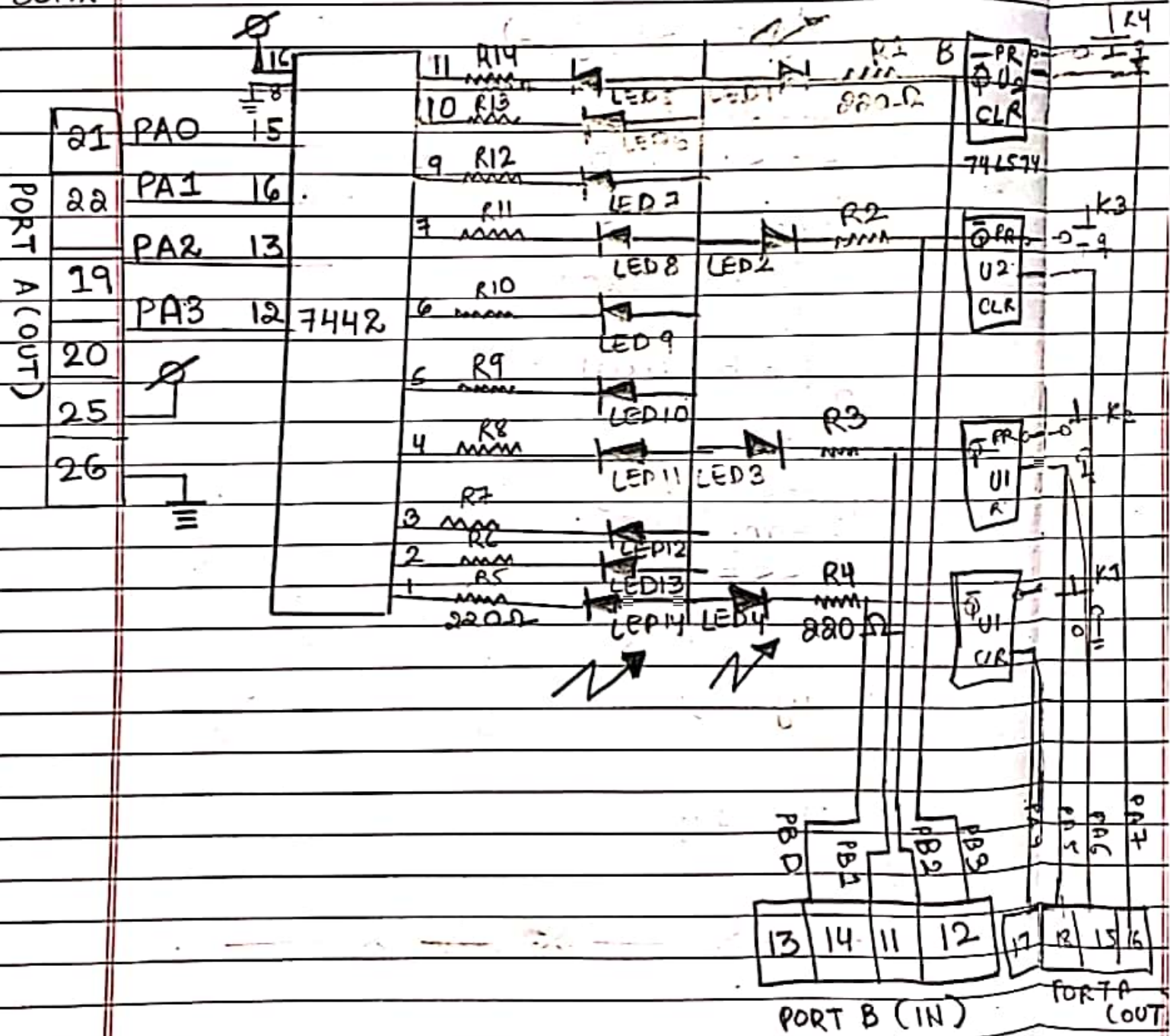


⑤ Program to demo the elevator interface.

Soln:-



①

```
#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;
}
```

```
Group()
{
    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;
```

}

}

(3)

GoDown()

```

{
    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 0x0e: while (Step > 0xf0)
        {
            Step--;
            PortA = Step;
            Delay();
        }
        Reset();
        break;
    }
}

```

(4)

Void main ()

```
{
    CommandWord = 0x82;
    PortA = 0x50;
    PresentFloor = 0x0e;
    while (1){
        RequestedFloor = PortB;
        RequestedFloor = RequestedFloor & 0x0f;

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

— X — X —