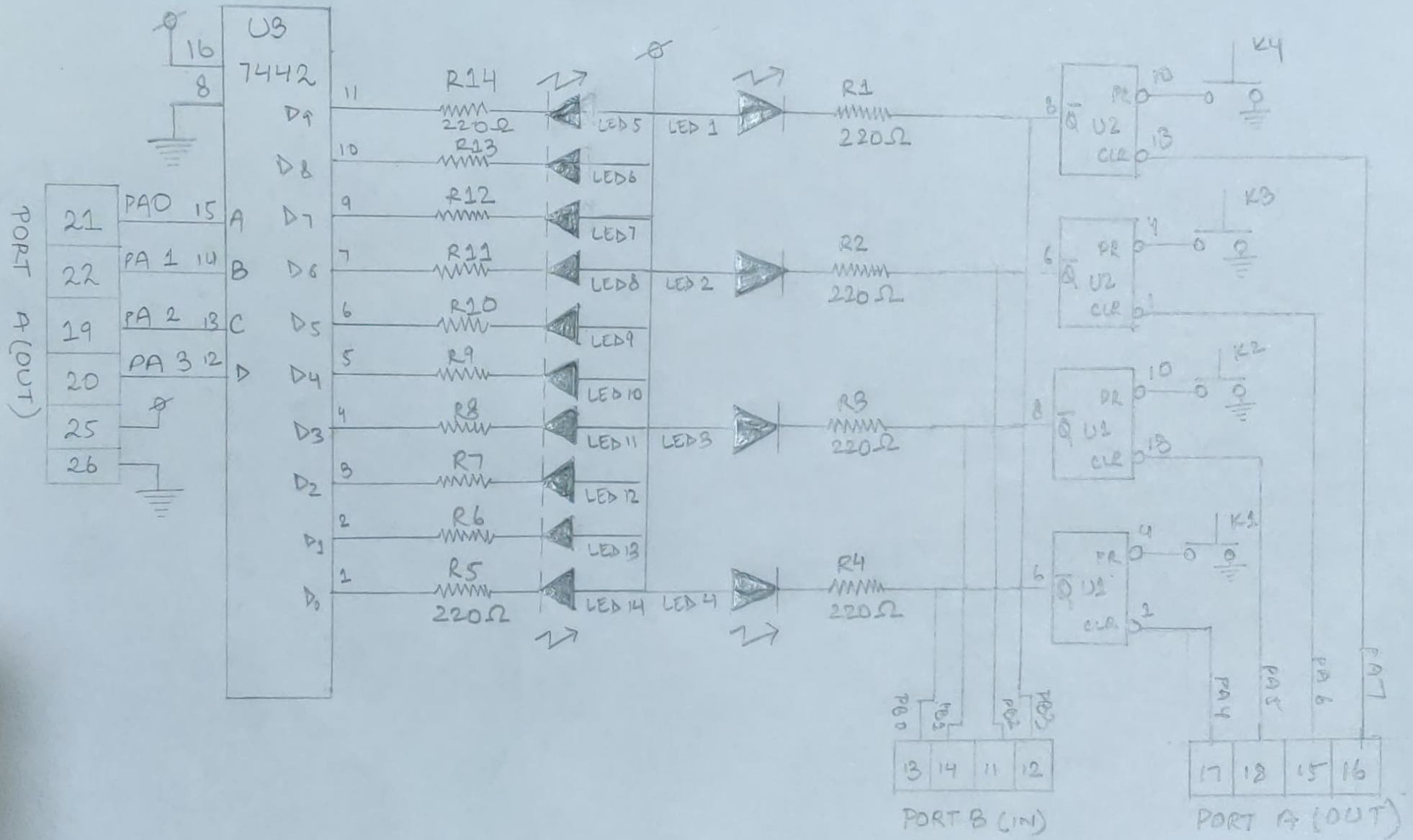
Lab Experiment 15: ELEVATOR

```
#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 xdataCount, i;
 Delay ()
 {
for (Count =0; count<= 4500, count ++);
 }
 Reset ()
  {
   step = step & 0x0f;
   Port A = step;
    step = step | 0xf0;
    PortA = step;
  }
  GtoUp () {
  switch(requiredFloor) {
      case 0x0d: while(step <0xf3) {
                   step++;
                   Port A =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(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;
    }}
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;
  }
```


U3
7442
16
8
PORT A (OUT)
21
22
19
20
25
26
PA0
PA 1
PA 2
PA 3
15
14
13
12
A
B
C
D
D9
D8
D7
D6
D5
D4
D3
D2
D1
D0
11
10
9
7
6
5
4
3
2
1
R14
R13
R12
R11
R10
R9
R8
R7
R6
R5
220Ω
LED5
LED6
LED7
LED8
LED9
LED10
LED11
LED12
LED13
LED14
LED1
LED2
LED3
LED4
R1
R2
R3
R4
U2
U1
PR
CLR
D
Q
K4
K3
K2
K1
PB0
PB1
PB2
PB3
PA4
PA5
PA6
PA7
13
14
11
12
17
18
15
16
PORT B (IN)
PORT A (OUT)