Aditya Salvil kumar
1BM19CS191

Q Program to demo the elevator interface.

Ans

```
#include <stdio.h>
#include <regs1.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;
```

Aditya Satish Kumar
1BM19CS191

```
case 0x0b:      while (step < 0xf6) {
                    step++;
                    PortA = step;
                    Delay();
                }

                Reset();
                break;


case 0x07:      while (step < 0xfa) {
                    step++;
                    PortA = step;
                    Delay();
                }

                Reset();
                break;
        }
    }


GoDown() {
    switch (RequestedFloor) {
        case 0x0d:      while (step > 0xf3) {
                            step--;
                            PortA = step;
                            Delay();
                        }

                        Reset();
                        break;
```

Aditya Satish Amra
15M19CS191

```
        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 = RequestedFloor PortB;
        RequestedFloor = RequestedFloor & 0x0f;

        if (RequestedFloor < PresentFloor)
                GoUp();
        else
                GoDown();
        PresentFloor = RequestedFloor;
    }
}
```

Aditya Satish Kuma
IBM19CS191.

Requested Floor = PostB;

{

Port A (extr OUT)

21	22	19	20	25	26

PA0 PA1 PA2 PA3

V3

7442

A B C D

D0 D1 D2 D3 D4 D5 D6 D7 D8 D9

1 2 3 4 5 6 7 8 9 10 11

R5 220Ω R6 R7 R8 R9 R10 R11 R12 R13 220Ω R14 220Ω

LED13 LED12 LED11 LED10 LED9 LED8 LED7 LED6 LED5 LED61

LED1 LED3 LED2

R4 220Ω R3 R2 R1 220Ω

PA0 PA1 PA2 PA3

U1 U2 U2 U2

74LS74 74LS74

Port B (IN)

13 14 11 12

Port A (OUT)

1F 18 15 16

PA4 PA5 PA6 PA7