8051

Lab Program 15

Program to demo the elevator interface.

```c
#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=0x10;
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(Steps<0x13)
```

```c
                {
                Step++;
                Port A = Step;
                Delay();
                }
                Reset();
                break;

case 0x0b: while (Step < 0xf6)
                {
                Step++;
                Port A = Step;
                Delay();
                }
                Reset();
                break;

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

```
GoDown()
{
    switch(RequestedFloor)
    {
        case 0x0d:  while(step > 0xf3)
                    {
                        Step--;
                        Port A = Step;
                        Delay();
                    }
                    Reset();
                    break;

        case 0x0b:  while(step > 0xf6)
                    {
                        Step--;
                        Port A = Step;
                        Delay();
                    }
                    Reset();
                    break;

        case 0x0e:  while(step > 0xf0) {
                        Step--;
                        Port A = Step;
                        Delay();
                    }
                    Reset();
                    break;
    }
}
```

```c
void main()
{
Command Word = 0x82;
PortA = 0xf0;
PresentFloor = 0x0e;
while(1) {
    RequestedFloor = PortB;
    Requested Floor = RequestedFloor & 0x0f;

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