

5/1/21

Q. Program to demo the elevator interface

```
#include <stdio.h>
#include <reg51.h>
unsigned char xdata CommandWord at 0xe800;
unsigned char xdata PortA at 0xe800;
unsigned char xdata PortB at 0xe801;
unsigned char xdata ResetFloor, RequestedFloor, Step = 0x00;
unsigned long xdata Count, i;

Delay() {
    for (Count = 0; Count <= 4500; Count++);
}

Reset() {
    Step = Step & 0x0f;
    PortA = Step;
    Step = Step | 0x10;
    PortA = Step;
}

GoUp() {
    switch (RequestedFloor) {
        case 0x0d: while (Step < 0x03) {
                        Step++;
                        PortA = Step;
                        Delay();
                    }
                    Reset();
                    break;
    }
}
```



```
case 0x06: while (Step < 0x06) {  
    Step++;  
    Port A = Step;  
    Delay();  
}
```

```
Reset();
```

```
break;
```

```
case 0x07: while (Step < 0x09) {  
    Step++;  
    Port A = Step;  
    Delay();  
}
```

```
Reset();
```

```
break;
```

```
}
```

```
}
```

```
GoDown() {
```

```
    switch (Requested Floor) {
```

```
        case 0x0d: while (Step > 0x03) {  
            Step--;  
            Port A = Step;  
            Delay();  
        }
```

```
Reset();
```

```
break;
```




```
case 0x06: while (Step > 0xf6) {
```

```
    Step--;
```

```
    PortA = Step;
```

```
    Delay();
```

```
}
```

```
Reset();
```

```
break;
```

```
case 0x0e: while (Step > 0xf0) {
```

```
    Step--;
```

```
    PortA = Step;
```

```
    Delay();
```

```
}
```

```
Reset();
```

```
break;
```

```
}
```

```
}
```

```
void main() {
```

```
    CommandWord = 0x87;
```

```
    PortA = 0xf0;
```

```
    PresentFloor = 0x0e;
```

```
    while (1) {
```

```
        RequestedFloor = PortB;
```

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

```
        if (RequestedFloor != 0x0f && RequestedFloor !=
```

```
            PresentFloor) {
```



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

```
RequestedFloor = portA;
```

```
}
```

```
}
```