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Q. Use switch to control the pattern of LEDs as listed below:
Assume LED connected to port P1 and switch is connected to any pin of port 3.
Patterns:
1.When key pressed once, alternate blinking of LEDs from left to right.
2.When key pressed twice, alternate blinking of LEDs from right to left.
3.When key pressed thrice, alternate blinking of LEDs till right then left.
4.When key pressed 4 times, alternate blinking of LEDs till left then right.
5.10101010
6.01010101

```
#include <REGX51.H>

#define LED_PORT P1
#define SWITCH P3_0

void delay(unsigned int time) {
    unsigned int i, j;
    for(i = 0; i < time; i++)
        for(j = 0; j < 1275; j++);
}

void pattern1() {
    unsigned char i;
    while(1) {
        for(i = 0x01; i != 0; i <<= 1) {   // left to right
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        if(SWITCH == 0) break;
    }
}

void pattern2() {
    unsigned char i;
    while(1) {
        for(i = 0x80; i != 0; i >>= 1) {   // right to left
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        if(SWITCH == 0) break;
    }
}

void pattern3() {
    unsigned char i;
    while(1) {
        for(i = 0x01; i != 0; i <<= 1) {   // left to right
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        for(i = 0x40; i != 0; i >>= 1) {   // then right to left (skip 0x80)
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        if(SWITCH == 0) break;
    }
}

void pattern4() {
    unsigned char i;
    while(1) {
        for(i = 0x80; i != 0; i >>= 1) {   // right to left
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        for(i = 0x02; i != 0; i <<= 1) {   // then left to right (skip 0x01)
            LED_PORT = i;
            delay(200);
            LED_PORT = 0x00;
            delay(200);
        }
        if(SWITCH == 0) break;
    }
}

void pattern5() {
    while(1) {
        LED_PORT = 0xAA;   // 10101010
        delay(400);
        LED_PORT = 0x00;
        delay(400);
        if(SWITCH == 0) break;
    }
}

void pattern6() {
    while(1) {
        LED_PORT = 0x55;   // 01010101
        delay(400);
        LED_PORT = 0x00;
        delay(400);
        if(SWITCH == 0) break;
    }
}

void main() {
    unsigned char count = 0;
    LED_PORT = 0x00;
    SWITCH = 1; // set switch as input

    while(1) {
        if(SWITCH == 0) {          // when switch pressed
            delay(20);             // debounce
            if(SWITCH == 0) {
                count++;
                while(SWITCH == 0); // wait for release
                if(count > 6)
                    count = 1;
            }
        }

        switch(count) {
            case 1: pattern1(); break;
            case 2: pattern2(); break;
            case 3: pattern3(); break;
            case 4: pattern4(); break;
            case 5: pattern5(); break;
            case 6: pattern6(); break;
            default: LED_PORT = 0x00;
        }
    }
}
```