```
// Ahmed Moustafa Abd Elfatah Mohamed Ramadan
#define TURNONOFF PB0
#define LRSWITCH PB1
#define RLSWITCH PB2
#define BUILDING PB3
#define AUTOSWITCH PB4
int switchingWithPin(int s);
void turnOffAllLEDs();
void turnOnALLLEDs();
void delay500();
void setup() {
   DDRD = 0xFF; // Make All LEDs are output
   DDRB &= 0x60; // Make the first 5 bits input
   PORTB |= 0x1F; // Enabeling the pull up resistors
 }
void loop() {
   static int autoMode = 0;
   static int offState = 0;
   static int leftCounter = 0;
   static int rightCounter = 7;
   if( ! switchingWithPin(TURNONOFF) ){
      if(!offState) {
         offState = 1;
         turnOnALLLEDs();
      }else{
         offState = 0;
         turnOffAllLEDs();
      delay500();
   }
   if(! switchingWithPin(LRSWITCH)){
      if(!autoMode){
         turnOffAllLEDs();
         PORTD |= (1<<leftCounter);</pre>
         delay500();
         leftCounter++;
         if( leftCounter > 7 )
            leftCounter = 0;
      if(autoMode) {
         for (int y = 0; y < 8; y++) {
            turnOffAllLEDs();
            PORTD |= (1 << y);
            delay500();
            if(y == 7)
               y = -1;
         }
      }
```

```
if(!switchingWithPin(RLSWITCH)){
      if(!autoMode){
         turnOffAllLEDs();
         PORTD |= (1 << rightCounter);</pre>
         rightCounter--;
         delay500();
          if(rightCounter < 0)</pre>
            rightCounter = 7;
      }
      if(autoMode) {
          for (int y = 7; y > -1; y--) {
             turnOffAllLEDs();
             PORTD \mid = (1 << y);
             delay500();
             if(y==0)
                y = 8 ;
          }
   }
   if( !switchingWithPin(BUILDING)){
      if(!autoMode){
         PORTD |=(1<<leftCounter);</pre>
         delay500();
         leftCounter++;
          if(leftCounter>8) {
             leftCounter=1;
             turnOffAllLEDs();
             PORTD |=(1<<0);
          }
      }
      if(autoMode) {
          for (int y=0; y<8; y++) {
             PORTD | = (1 << y);
             delay500();
             if(y==7){
                y = -1;
                turnOffAllLEDs();
             }
          }
      }
   if(!switchingWithPin(AUTOSWITCH)){
      if(!autoMode)
         autoMode = 1;
      else
         autoMode = 0;
      delay500();
   }
 }
int switchingWithPin(int switchNo) {
   return ( PINB &( 1 << switchNo ) );
 }
void turnOffAllLEDs() {
   PORTD = 0x00;
```

}

```
void turnOnALLLEDs() {
    PORTD = 0xFF;
}
void delay500() {
    _delay_ms(500);
}
```