

[illegible]

```
ldi r20, HIGH(RAMEND)
out SPH,r20
ldi r20, LOW(RAMEND)
out SPL, r20
```

```
ldi r16, 0x00
out DDRD, r16
out DDRA, r16
```

```
ldi r16, 0xff
out DDRE, r16
out DDRB, r16
```

```
ldi r16, 0b00000111
out EIMSK, r16
```

```
ldi r16, 0b00001010
sts EICRA, r16
```

```
sei
```

```
;-----
```

```
MAIN:
```

```
ldi r16, 0xff
out DDRB, r16
com r16
out DDRD, r16
ldi r24, 1
```

```
LOOP:
```

```
  cpi r24, 1
  breq NORMAL
  cpi r24, 2
  breq LEFT
  cpi r24, 3
  breq RIGHT
rjmp LOOP
```

```
;NORMAL -----
```

```
NORMAL:
```

```
ldi r17, 0b00111100
out PORTB, r17
rjmp LOOP
```

```
;LEFT -----
```

```
LEFT:
```

```
ldi r17, 0b11101100
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b110111100
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b101111100
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b011111100
rcall DELAY_1
```

```
out PORTB, r17
rjmp LOOP
```

```
;RIGHT -----
RIGHT:
```

```
ldi r17, 0b00110111
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00111011
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00111101
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00111110
rcall DELAY_1
out PORTB, r17
rjmp LOOP
```

```
;delay-----
DELAY_1:
```

```
ldi r20, 255
ldi r21, 0
```

```
DEL_1:
rcall DELAY_2
inc r21
cp r20, r21
brne DEL_1
ret
```

```
DELAY_2:
ldi r22, 255
ldi r23, 0
```

```
DEL_2:
    inc r23
    cp r22, r23
    brne DEL_2
    ret
```

```
;-----
```

```
;INTERRUPT_0 -----
```

```
INTERRUPT_0:
```

```
    push r16
    in r16, sreg
    push r16
```

```
    cpi r16, 0x00
    breq PRESS_0
```

```
PRESS_0:
```

```
    cpi r24, 2
    brne TURN_RIGHT
    ldi r24, 1
    rjmp DONE_1
```

```
TURN_RIGHT:
```

```
    ldi r24, 2
```

```
DONE_1:
```

```
    pop r16
    out sreg, r16
    pop r16
    reti
```

```
;INTERRUPT_1 -----
```

```
INTERRUPT_1:
```

```
    push r16
    in r16, sreg
    push r16
```

```
    cpi r16, 0x00
    breq PRESS_1
```

```
PRESS_1:
```

```
    cpi r24, 3
    brne TURN_LEFT
    ldi r24, 1
    rjmp DONE_2
```

```
TURN_LEFT:
```

```
    ldi r24, 3
```

```
DONE_2:
    pop r16
    out sreg, r16
    pop r16
    reti
```

```
;INTERRUPT_2 -----
INTERRUPT_2:
```

```
    push r16
    in r16, sreg
    push r16

    cpi r16, 0x00
    breq PRESS_3
```

```
PRESS_3:
    cpi r24, 1
    breq NORMAL_1
    cpi r24, 2
    breq LEFT_1
    cpi r24, 3
    breq RIGHT_1
```

```
DONE_3:
    pop r16
    out sreg, r16
    pop r16
    reti
```

```
;NORMAL_1 -----
NORMAL_1:
    ldi r17, 0b00000000
    out PORTB, r17
    rjmp DONE_3
```

```
;LEFT_1 -----
LEFT_1:
    ldi r17, 0b11100000
    rcall DELAY_1
```

```
    out PORTB, r17
    ldi r17, 0b11010000
    rcall DELAY_1
```

```
    out PORTB, r17
    ldi r17, 0b10110000
    rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b01110000
rcall DELAY_1
```

```
out PORTB, r17
rjmp DONE_3
```

```
;RIGHT_1 -----
RIGHT_1:
ldi r17, 0b00000111
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00001011
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00001101
rcall DELAY_1
```

```
out PORTB, r17
ldi r17, 0b00001110
rcall DELAY_1
```

```
out PORTB, r17
rjmp DONE_3
```