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#include <avr/io.h>
#include <avr/interrupt.h>
#include <util/delay.h>

#ifndef F_CPU
//define cpu clock speed if not defined
#define F_CPU 16000000UL
#endif

#define ITERATIONS 5
#define WAIT 100

//Motorul din spate(fata - spate)
//Miscare inainte
void moveForward(void){
    PORTB |= (1<<PB4);
    PORTB &= ~(1<<PB5);
}
//Stop miscare inainte
void stopMoveForward(void){
    PORTB &= ~((1 << PB4) | (1 << PB5));
}
//Miscare inapoi
void moveBackward(void){
    PORTB |= (1<<PB5);
    PORTB &= ~(1<<PB4);
}
//Stop miscare inapoi
void stopMoveBackward(void){
    PORTB &= ~((1 << PB5) | (1 << PB4));
}
//Motorul din fata(stanga - dreapta)
//Viraj dreapta
void turnRight(void){
    PORTB |= (1<<PB7);
    PORTB &= ~(1<<PB6);
}
//Stop viraj dreapta
void stopTurnRight(void){
    PORTB &= ~((1 << PB7) | (1 << PB6));
}
//Viraj stanga
void turnLeft(void){
    PORTB |= (1<<PB6);
    PORTB &= ~(1<<PB7);
}
//Stop viraj stanga
void stopTurnLeft(void){
    PORTB &= ~((1 << PB6) | (1 << PB7));
}

//Miscare robotelului
//Curba stanga
void moveLeft(void){
    moveForward();
    turnLeft();
}

void stopMoveLeft(void){
    stopMoveForward();
    stopTurnLeft();
}
```

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}

//Curba dreapta
void moveRight(void){
    moveForward();
    turnRight();
}

void stopMoveRight(void){
    stopMoveForward();
    stopTurnRight();
}

void Main_Init(void){
    //Activam portul B de iesire si portul D de intrare
    DDRB = 0xFF;
    PORTB = 0x00;
    DDRD = 0x00;
    PORTD = 0xFF;

    sei();
}

int main(void){

    int i;

    Main_Init();

    for (;;){
        //la fiecare ITERATIONS * WAIT miliseunde se verifica starea senzorilor
        //Un senzor vede linia -> pinul corespunzator are valoarea 0
        //Senzorii din mijloc vad linia: deplasare inainte un timp
        if (!(PIND & (1 << PIND3)) && !(PIND & (1 << PIND4)) && !(PIND & (1 << PIND5))){
            moveForward();
            for (i = 0; i < ITERATIONS; i++)
                _delay_ms(WAIT);
            stopMoveForward();
        }
        //Senzorii din dreapta vad linia: deplasare spre dreapta un timp
        if (!(PIND & (1 << PIND6)) || !(PIND & (1 << PIND7))){
            moveRight();
            for (i = 0; i < ITERATIONS; i++)
                _delay_ms(WAIT);
            stopMoveRight();
        }
        //Senzorii din stanga vad linia: deplasare spre stanga un timp
        if (!(PIND & (1 << PIND1)) || !(PIND & (1 << PIND2))){
            moveLeft();
            for (i = 0; i < ITERATIONS; i++)
                _delay_ms(WAIT);
            stopMoveLeft();
        }
        //Se asteapta ITERATIONS * WAIT miliseunde
        for (i = 0; i < ITERATIONS; i++)
            _delay_ms(WAIT);
        stopMoveLeft();
    }

    return 0;
}
```