```
// set pin numbers:
// PWM outputs
const int pwmLeftMotor = 5;
const int pwmRightMotor = 3;

// digital inputs
const int diButtonForward = 4;
const int diButtonLeft = 2;
const int diButtonRight = 6;
// const int buttonBackward = 7;

// digital outputs
const int doLeftMotorForward = 9;
const int doRightMotorForward = 11;
const int doLeftMotorBackward = 12;
const int doRightMotorBackward = 13;

// PWM duty cycles
const int pwm0Percent = 0;
const int pwm25Percent = 64;
const int pwm50Percent = 127;
const int pwm75Percent = 191;
const int pwm100Percent = 255;

void setup()
{
  // initialize pwms:
  pinMode(pwmLeftMotor, OUTPUT);
  pinMode(pwmRightMotor, OUTPUT);

  analogWrite(pwmLeftMotor, pwm25Percent);
  analogWrite(pwmRightMotor, pwm25Percent);

  // initialize inputs:
  pinMode(diButtonForward, INPUT);
  pinMode(diButtonLeft, INPUT);
  pinMode(diButtonRight, INPUT);
  // pinMode(buttonBackward, INPUT);

  // initializes outputs:
  pinMode(doLeftMotorForward, OUTPUT);
  pinMode(doRightMotorForward, OUTPUT);
  pinMode(doLeftMotorBackward, OUTPUT);
  pinMode(doRightMotorBackward, OUTPUT);

  digitalWrite(doLeftMotorForward, LOW);
  digitalWrite(doRightMotorForward, LOW);
  digitalWrite(doLeftMotorBackward, LOW);
  digitalWrite(doRightMotorBackward, LOW);
}

void loop()
{
```

```
  if(digitalRead(diButtonForward) == HIGH)
  {
    while(digitalRead(diButtonForward) == HIGH)
    {
      digitalWrite(doLeftMotorForward, HIGH);
      digitalWrite(doRightMotorForward, HIGH);
    }
    digitalWrite(doLeftMotorForward, LOW);
    digitalWrite(doRightMotorForward, LOW);
  }

  if(digitalRead(diButtonLeft) == HIGH)
  {
    while(digitalRead(diButtonLeft) == HIGH)
    {
      digitalWrite(doRightMotorForward, HIGH);
      digitalWrite(doLeftMotorBackward, HIGH);
    }
     digitalWrite(doRightMotorForward, LOW);
     digitalWrite(doLeftMotorBackward, LOW);
  }

  if(digitalRead(diButtonRight) == HIGH)
  {
    while(digitalRead(diButtonRight) == HIGH)
    {
      digitalWrite(doLeftMotorForward, HIGH);
      digitalWrite(doRightMotorBackward, HIGH);
    }
    digitalWrite(doLeftMotorForward, LOW);
    digitalWrite(doRightMotorBackward, LOW);
  }
}
```