Left Sidebar

Start moving motors on QuadBot

Overview

Motor Control

QuadBot Motor assignments

Cycle through all motors

Conclusion

Difficulty rating: 2

Fun Rating: 4

Time taken: 25 mins

Supporting activity - QuadBot Mood Lamp

Motor Control

Get QuadBot moving and take your first step into legged robotics.



It’s the first step to getting QuadBot walking (no pun intended), let’s control the angle of the motors.

**Servo Motor Control**

The motors that make up QuadBot are called Servo Motors, and they are different from most motors because they don’t just spin mindlessly. Servo motors are designed to rotate to a specific angle, and then hold that angle against any force.



This makes themperfect for robots like QuadBot. Because they’re different to other motors, we control them in a slightly different way...

How does a microcontroller send angles to a Servo Motor? Read our Input and Output tutorial.

You can read our tutorial on input and output to learn more. Very simply to send an angle to a specific motor we use the setMotor() function like this…

#include <QuadBot.h> *//Include the QuadBot Library*

int motor = 0; //A variable to hold the motor number

Int angle = 45; //A variable to hold the desired angle

void setup(){

QuadBot.begin() *//Initialize QuadBot*

}

void loop(){

QuadBot.setMotor(motor, angle) *//Set the motor to an angle*

}

**QuadBot Motor Assignments**

Each motor on QuadBot has a number assigned to it. To set a specific motor we must use that number in the function.



It might seem a bit confusing to use only a number for each servo; after all surely it would be simpler to give each motor a descriptor like “LegA-1”. However using a number keeps the code simple and also means we can cycle through all motors just by incrementing the motor number.

**Cycle Motors**

Let’s set each motor on QuadBot to move from 0 degrees to 45 degrees every 1 second.

#include <QuadBot.h> *//Include the QuadBot Library*

void setup(){

QuadBot.begin() *//Initialize QuadBot*

}

void loop(){

for(int i=0;i<8;i++){ //A for loop to set all 8 motors.

QuadBot.setMotor(i, 0); *//Set the motor to an angle*

}

delay(1000); //Wait 1 second

for(int i=0;i<8;i++){

QuadBot.setMotor(i,45); //Set the motor to an angle

}

delay(1000);

}

Good work now you understand moving motors!

**Conclusion**

Great work, you’re getting close! Now let’s try using the dial to control the motors.