

July 12,  
2022

## Arduino MKR 1310 Board

### - Overview

- LoRa connectivity w/ low power
- Can connect to
  - + Arduino IoT Cloud
  - + LoRa network using Arduino LoRa PRO Gateway
  - + other boards

### - Main Features

- Cortex-M0 32-bit SAMD21
  - + low power processor
- Murata CMWX1ZZABZ
  - + LoRa wireless to connect to own network
  - + Connect to various LoRaWAN networks
- ATECC608 crypto chip
  - + keeps data secure and private

### - Tech Specs

- Operating Voltage: 3.3V
  - Note: VIN runs off of 5V (a little weird)
- Communication
  - + UART
  - + I2C
  - + SPI



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## - Goal

- To make a ~~self navigating~~ obstacle avoiding, GPS-navigated robot to collect samples in the future.

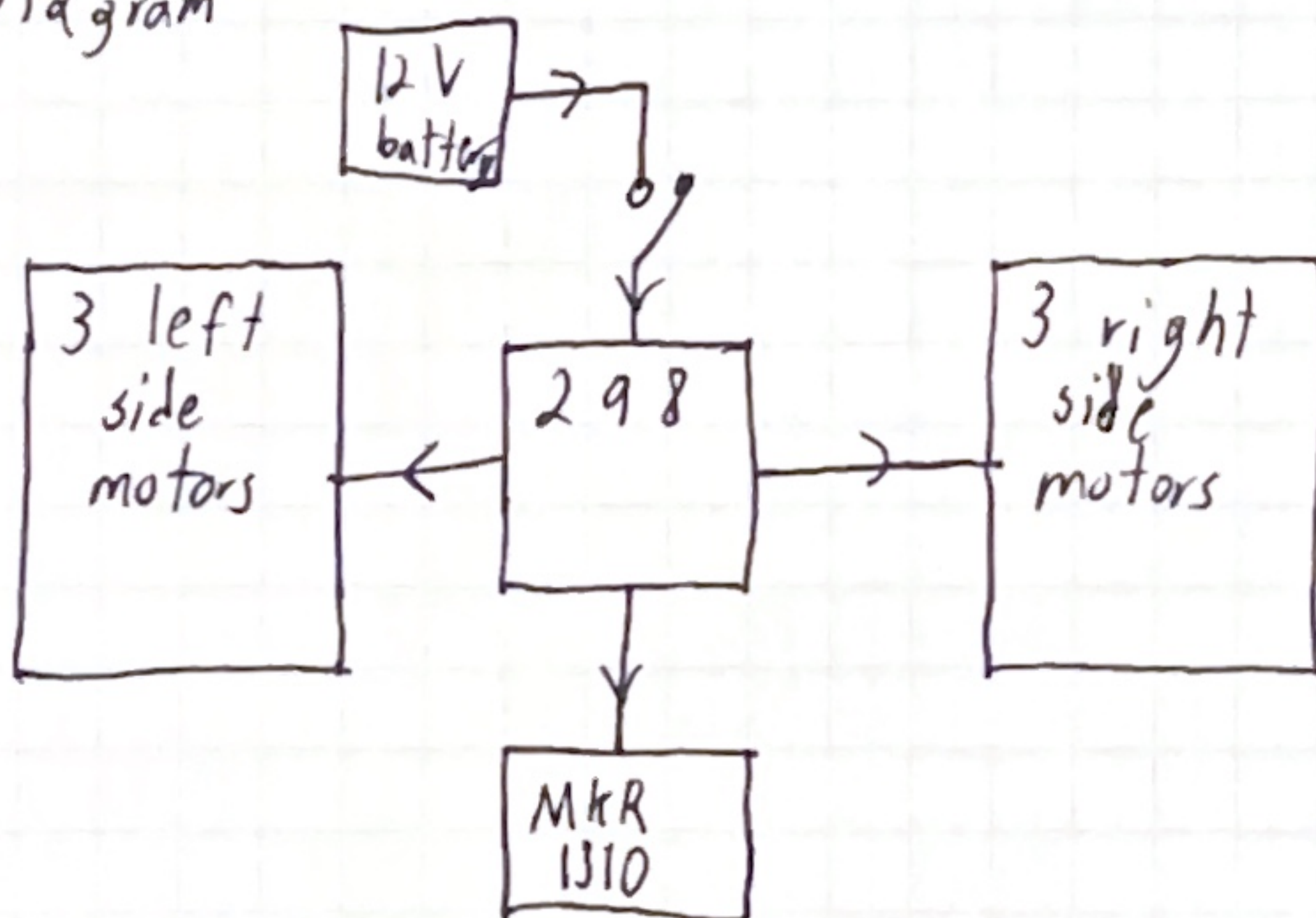
## - Components

## Project 1 - Movement

## - Components

- MKR 1310 board
- LM 298 motor controller
- PiBorg structure
- 12V battery
- 6 motors

## - Diagram



## - Physical Connections

- 2 wires from battery to LM298
  - + red for Voltage
  - + black for Ground
- 4 wires from LM298 to motors (2 for each side)
  - + red and back again



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## - Physical Connections

- LM298 to MKR1310 6 wires

- + 2 Enable pins

- ↳ must be PWM, we use analog write command

- + 2 for right side motors

- ↳ digital pins, we use digitalWrite

- + 2 for left side motors

- ↳ digital pins

## - Code