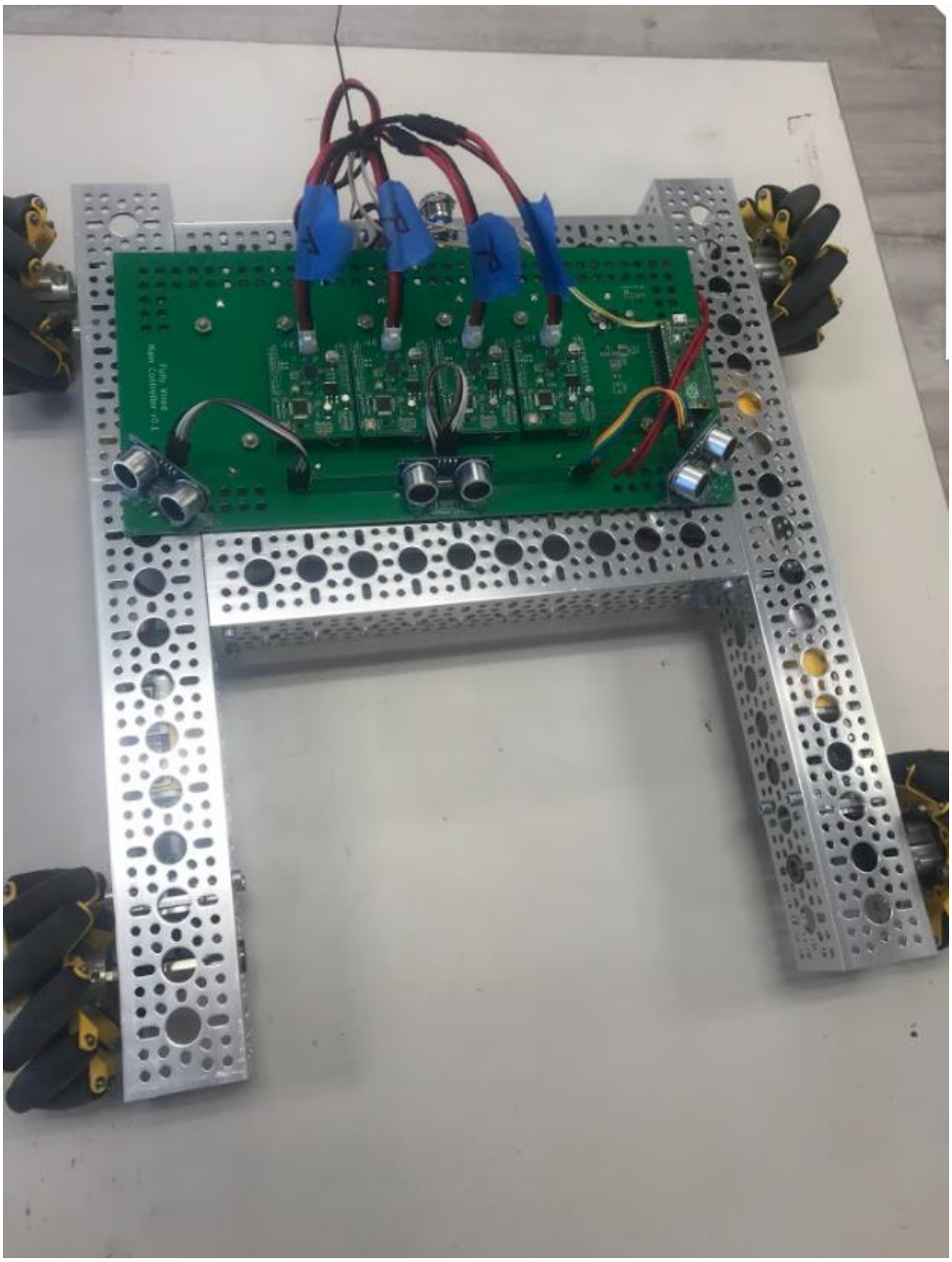
Wesminster Robot Kit



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Installing the Arduino IDE

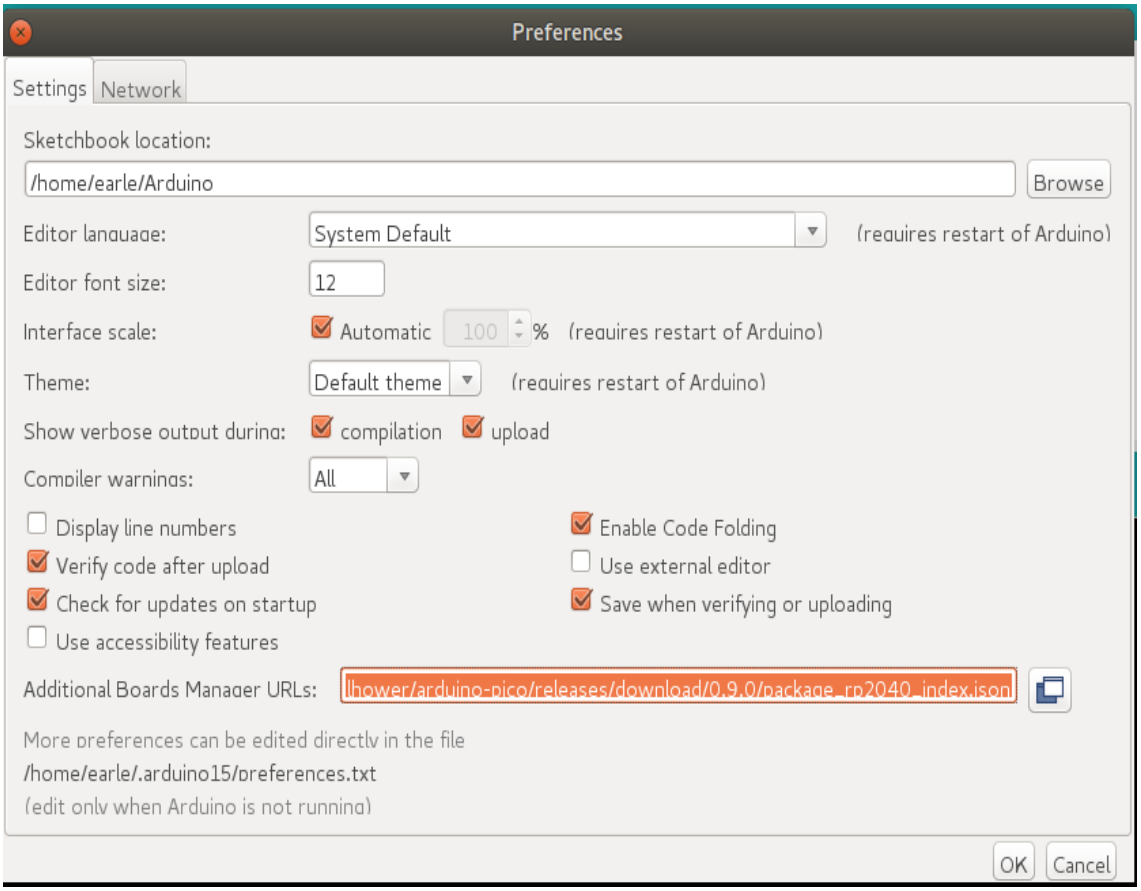
Head over to https://www.arduino.cc/en/software and select your operating system to download the Arduino installer, locate, and install it.

Installing Required Board Definition Files

Open the Arduino IDE and go to File->Preferences.

In the dialog that pops up, enter the following URL in the "Additional Boards Manager URLs" field:

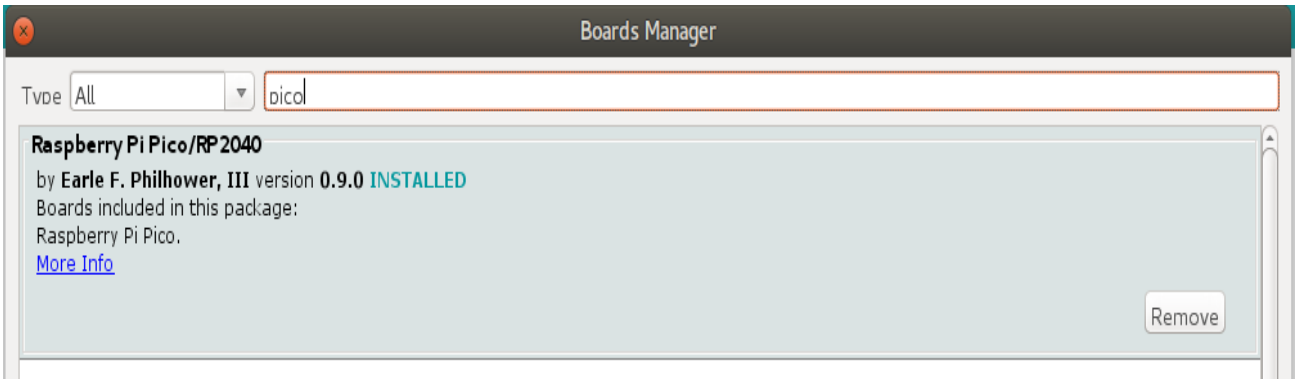
https://github.com/earlephilhower/arduino-pico/releases/download/global/package_rp2040_index.json



Hit OK to close the dialog.

Go to Tools->Boards->Board Manager in the IDE

Type "pico" in the search box and select "Add":

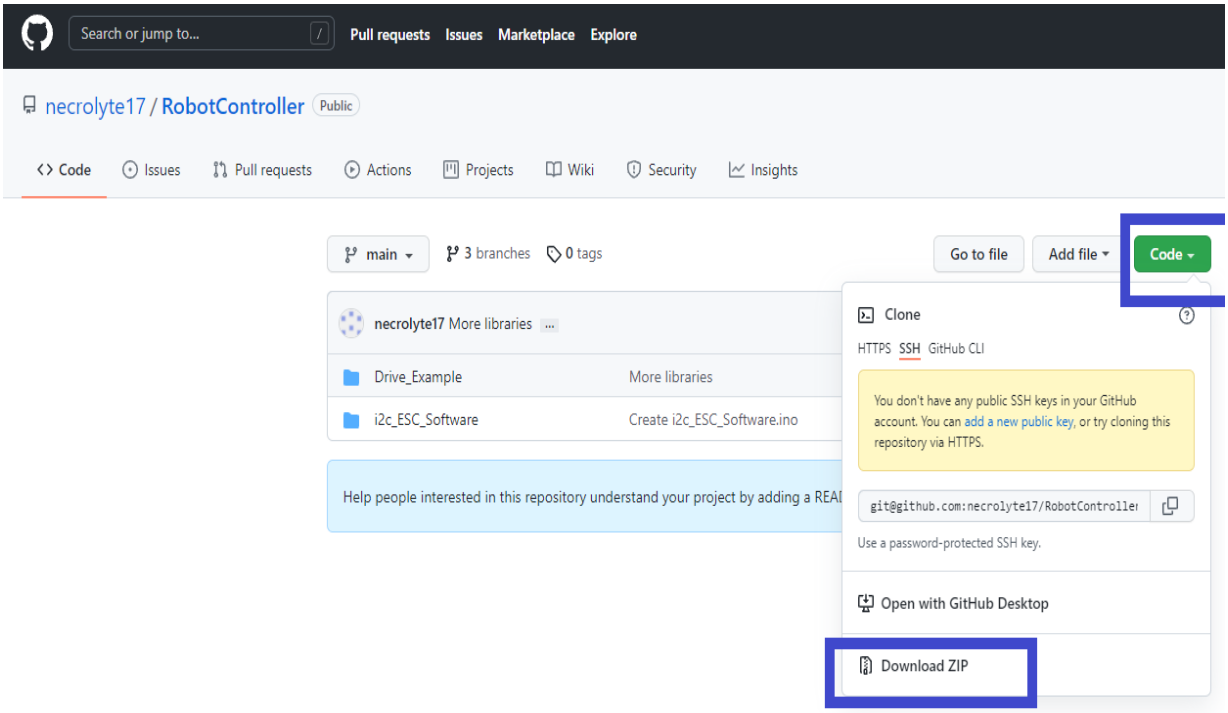


For More information head over to:

https://github.com/earlephilhower/arduino-pico

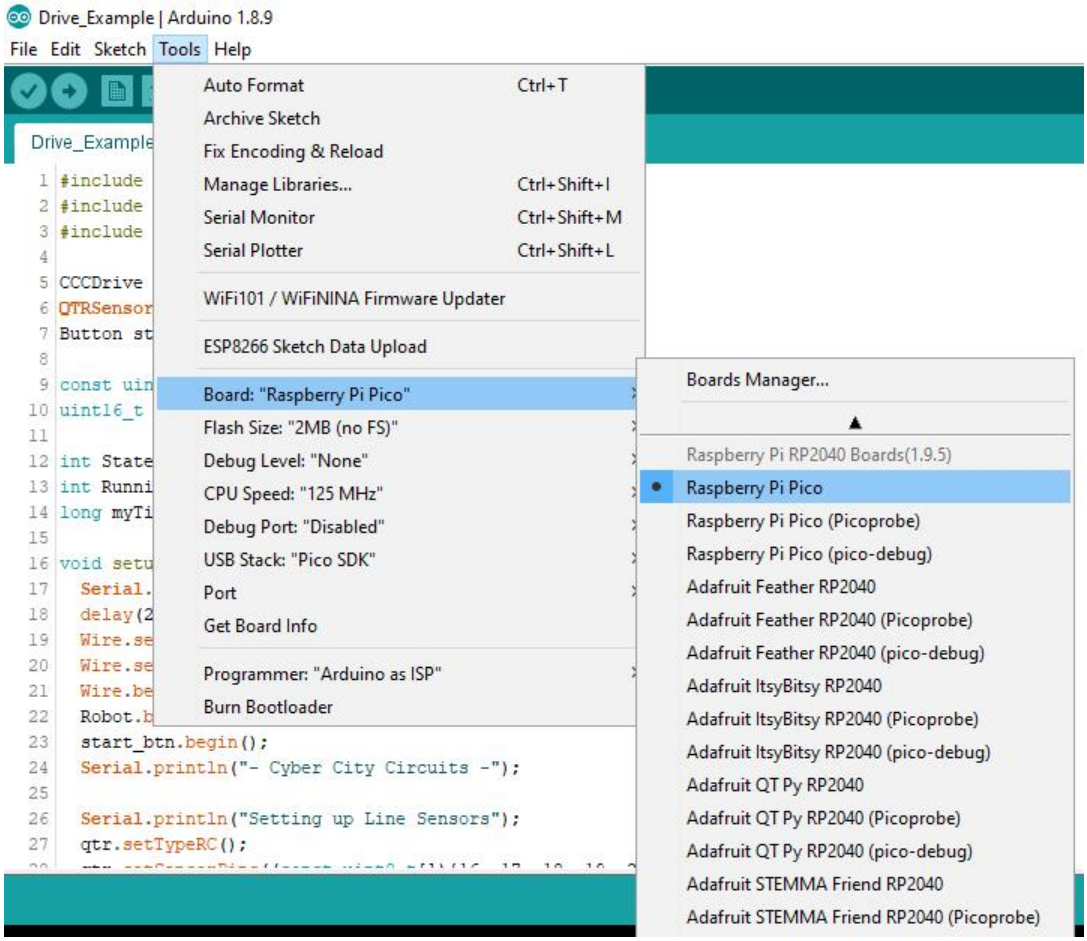
Downloading and Running Sample Code

Head over to https://github.com/necrolyte17/RobotController click the green code button and download the zip folder, and unzip it.



Click the example .ino file located in RobotController/Drive_Example to open the example program

Go to Tools->Boards-> Raspberry Pi Pico To select the Pico as your current board



Once you have loaded the Arduino sketch and selected your board click the arrow icon at the top of the Arduino IDE to send the test code to the Pico.

Once the code had uploaded successfully, press the button on the robot to start the movement.

Function examples

You initialize your robot with the CCCDrive Name command before the setup

In our example our robot is initialized with.

CCCDrive Robot;

Our functions tell the Robot what to do. We will use Robot as our object name in our examples.

If you head down to the void loop() function you can call the following functions.

Command	Values Accepted	Function
Robot.begin();		Called in the setup to initialize the robot
Robot.stop();	int MotorAddress	Stops the specified motor
Robot.allstop();		Stops all of the motors
Robot.driveforward();	int speed	Moves the robot forward at the specified speed
Robot.drivereverse();	int speed	Moves the robot backward at the specified speed
Robot.rightturn();	int speed	Turns the robot to the right at the specified speed
Robot.leftturn();	int speed	Turns the robot to the left at the specified speed
Robot.strafe();	int dir, int speed	Commands the robot to strafe in the desired direction at a specified speed (Direction Values 1 = strafes right 2= strafes left)
Robot.diagonal();	int dir, int speed	Commands the robot to move diagonally in the desired direction at thespecified speed (Direction Values 1 = forward left 2= forward right 3= reverse left 4= reverse right)

Example Function Usage

Head over to the Basic_Movement folder located in the CCCmotor Folder, and open the Basic_Movement.ino. Feel free to edic the commands to make the robot move as youd like

In this example we will be controlling the robot by adding movement functions inside of the if(Runing == 1){} loop.

```
void loop() {
  CheckforButton();   //Main command, do not remove! This monitors button press for robot state

  if(Running == 1) {  //If the robot should be moving, do things here

    Robot.driveforward(50);
    delay(5000);
    Robot.allstop();
    delay(5000);
    Robot.rightturn(50);
    delay(1000);
    Robot.drivereverse(50);
    delay(5000);
    Robot.diagonal(2,50);
    delay(1000);
    Robot.strafe(1, 60);
    delay(5000);
    Robot.allstop();
```

```
}
```