Build A Robot Workshop

You bored with all the free time your having during the summer holidays?

You are?

Well...let's build a simple robot

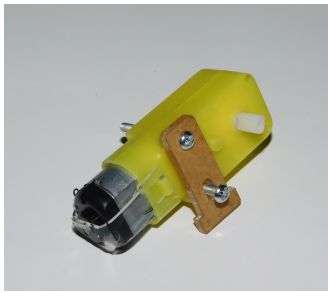
This robot is based on the £10 robot challenge that a chap called Les Pounder (@biglesp on twitter) created to see if he could build a robot for under £10.

The robot that you will build today will be similar to his design but all the code he has on his website will still be the same.

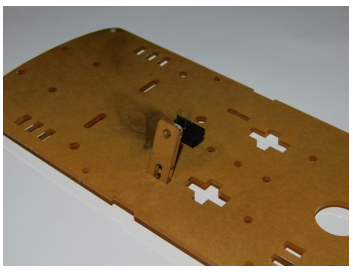
Have a look at https://bigl.es/friday-fun-attiny85-10-robot-challenge/

Open the robot packaging

You should have the same as whats in the picture to the left

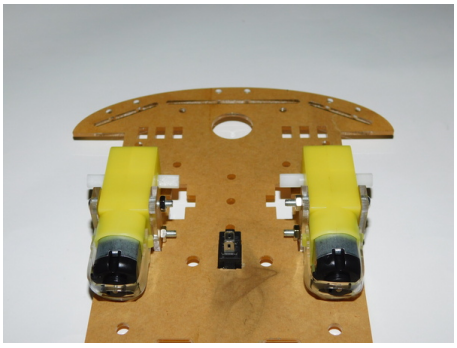


Get the motors, the motor supports and the long screws and attach one the supports to each motor.

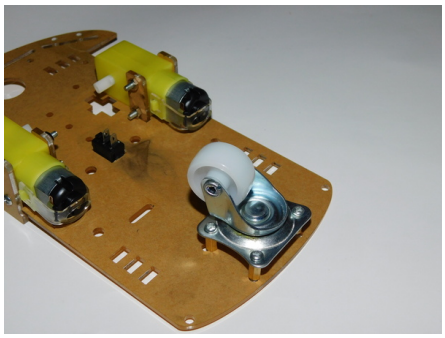


Insert the other motor supports through the holes in the chassis.

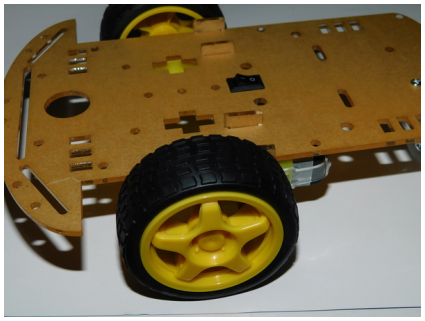
Also insert the power switch as well.



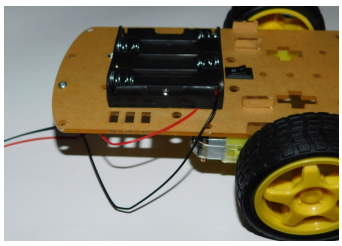
Your robot should look like this now.

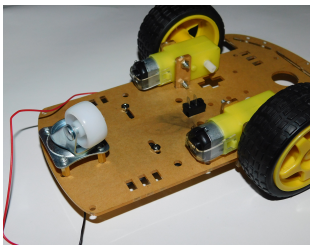


Assemble and connect the rear trolley wheel.

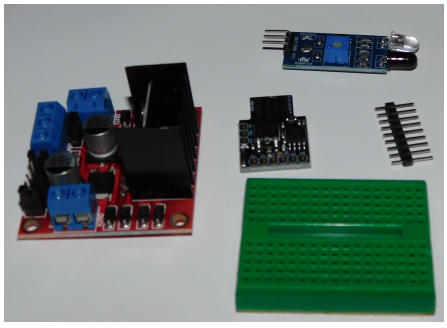


Your robot should be stood like this now.

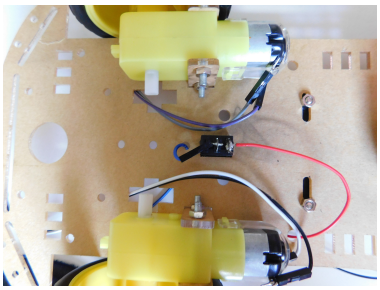




Place and screw in the battery holder.

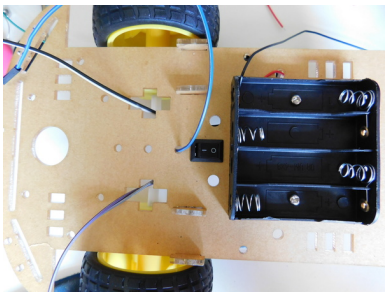


The next bits required are the Motor Controller (thing with big metal thing), the controller, the infra red sensor and the breadboard.

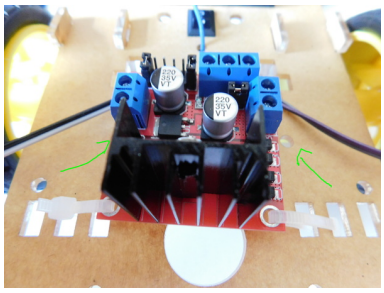


Now we shorten the red battery wire and solder it to one of the switch terminals.

We then solder one of the male - male wires onto the other side of the switch and then feed it through the hole to the top side of the robot.

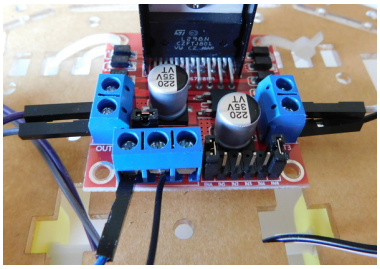


The top of the robot should look like this now.



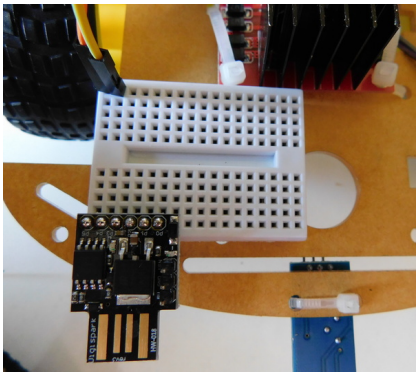
Place the motor controller on the board and fasten with some zip ties.

Use the two small holes shown in the image.



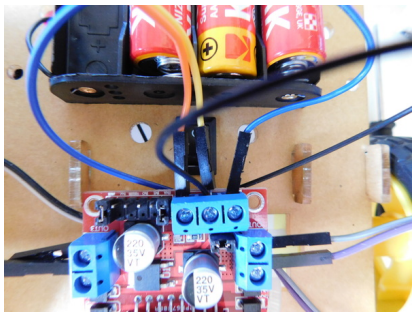
Connect the motor cables to the controller board and also the battery power cables from earlier.

Zip tie the IR sensor to the front of the robot.

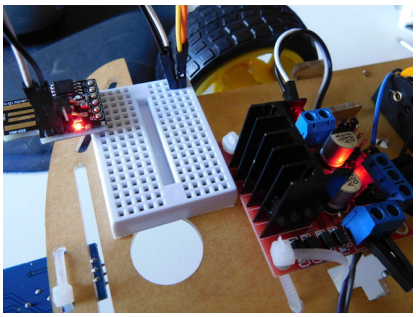


Stick the breadboard to the robot and place the controller board as shown.

Place two male - male cables as shown...these will connect to motor controller in the next step to provide power to the controller.

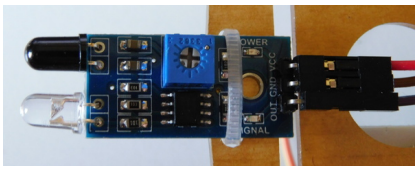


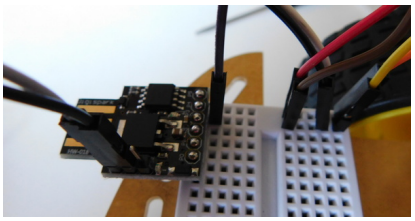
Connect the other side of the power cable from the previous step to the 5v and ground connectors on the motor controller board.



Connect a male - female cable between the controller and power cables to provide power.

The light should turn on when it's powered.

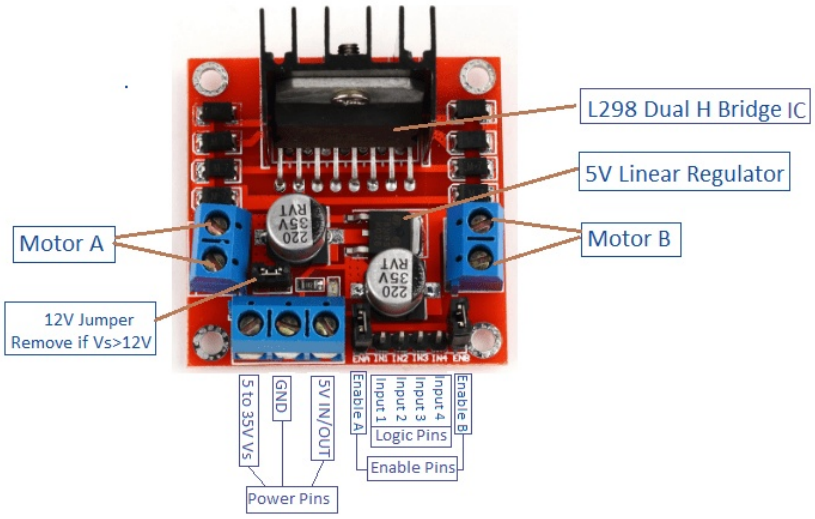




Connect the IR sensor with three male - female cables.

The ones marked VCC and GND will need connecting to the power supply.

The third cable will connect to the controller to send a signal when it detects something in its path.



Using male - female cables connect the following pins on the image above to controller:

Input 1 -> P0
Input 2 -> P1
Input 3 -> P2
Input 4 -> P4

Connect the signal cable from the IR sensor to P3.

Nothing needs connecting to P5.

Your Robot is now complete :)

Some techy notes and tips:

Info about the controller: https://digistump.com/wiki/digispark

If possible use alkaline batteries to allow your robot to last longer.