ThaiBot

Robot car code and instructions

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Connect Raspberry Pi to your WiFi network

- Take the Micro SD card out of the Raspberry Pi and connect it to your laptop. You may need an adaptor if you have a newer MacBook.

- Open the .txt file I have sent you called 'wpa_supplicant.conf' and add your WiFi credentials, putting your WiFi network's name for ssid and the WiFi password for psk.

- Move this file into the 'boot' partition on your Micro SD card. Put the card back in the Raspberry Pi and turn it on.

- It should now connect to your WiFi.

Configure port forwarding on your router

You will need to forward the SSH port (usually 22) on your router to the Raspberry Pi's local IP address:

1. Log in to your router's configuration page. The address for this will vary depending on the make and model of your router. Usually, you can access it by typing the IP address of the router (usually 192.168.1.1 or 192.168.0.1) in your web browser.

Configure port forwarding on your router

2. Go to connected devices. You should see the Raspberry Pi connected and the IP address. Note this down.

Configure port forwarding on your router

3. Look for a section called "Port Forwarding" or "Virtual Server". This may be located under "Advanced" or "Security" depending on your router's interface.

Configure port forwarding on your router

4. Create a new port forwarding rule. Assign a name to the rule and specify the protocol as "TCP". Set the external and internal ports to "22" (this is the default SSH port). In the internal IP address field, enter the local IP address of the Raspberry Pi that you obtained in step 2.

Configure port forwarding on your router

5. Save the new port forwarding rule and exit the router's configuration page.

Connect to the Raspberry Pi from your MacBook

Open Terminal on your MacBook (you can find this in the Utilities folder) and enter the following command, replacing <IP-address> with the Raspberry Pi's IP address.

```
ssh pi@<IP-address>
```

The first time you connect to the Raspberry Pi, you may be prompted to confirm the Raspberry Pi's identity by entering yes when asked. You may also be asked to enter the Raspberry Pi's password (raspberry).

Run the car control program.

Save the Python file I sent you somewhere easy to access on your computer. In the terminal cd into the folder where the file is saved. For example, if the file is saved to the Desktop you can type

```
cd ~/Desktop
```

into the Terminal. If you have saved the file in a folder on the Desktop called Test you can type: cd ~/Desktop/Test and so on.

Run the program by entering the command:

```
sudo python3 drive_thaibot.py
```

Drive the car with your keyboard

You can now control the car by typing `w`, `s`, `a`, or `d` into the terminal.

You can stop the car by entering `x` into the terminal.

You can stop the program with `ctrl-c`.