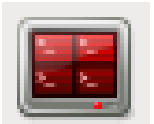
MentorPi Introduction

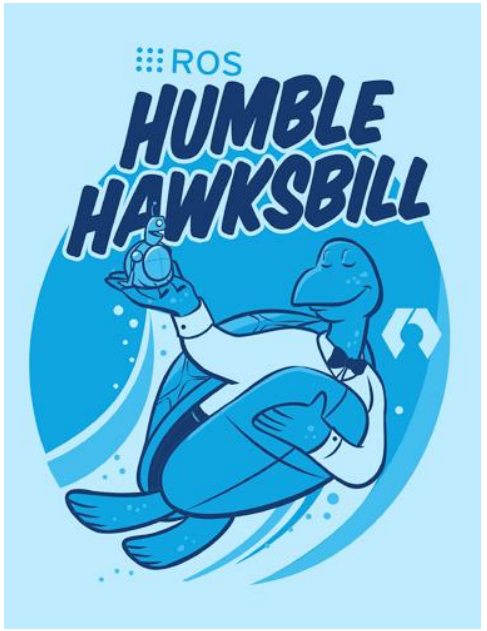
Mobile Robotics

MentorPi Basics

- MentorPi M1 is manufactured by Hiwonder
- Hardware
  - Raspberry Pi 5 (8GB)
  - RRC Lite Controller (hardware controller board)
  - Depth / RGB Camera
  - LIDAR
- Software
  - Uses ROS 2 Humble
    - Most of the code is written in python
  - This environment runs in a Docker Container
    - We can activate it by opening a terminator window

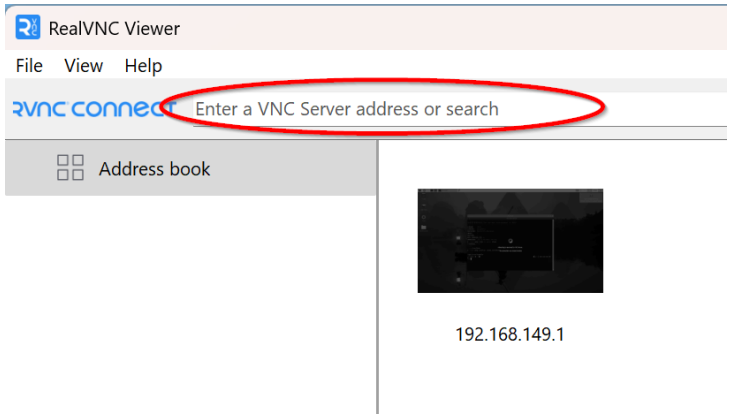


- Google Drive "tutorials" can be found at
  https://drive.google.com/drive/folders/1Ox5xN5zpxXqDK-9ruDwwgcQgePXvMvHr
  MentorPi 2024 >> 1. Getting Ready >> Lesson 2 Quick Start Guide

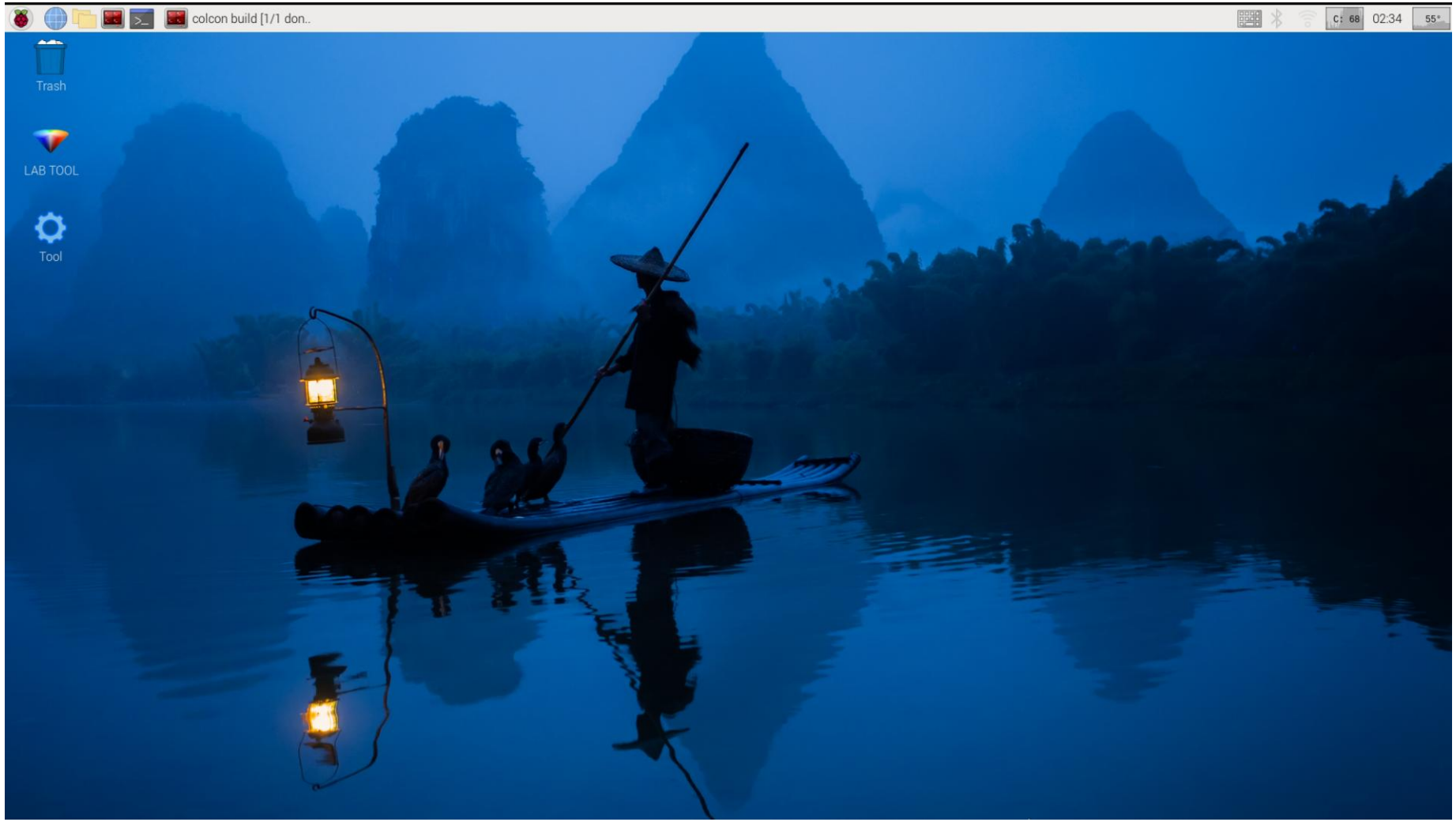


Connecting to desktop using RealVNC

1. Download RealVNC Viewer
   - Used to remote into Raspberry Pi's on the MentorPi
   - Allows multiple people to be connected and controlling the same computer
   - You don't have to sign in
2. Connect to the hotspot written on your MentorPi
   - Should look something like "HW-########"
     - Make a note of this once you find the correct one for your team
   - Password is "hiwonder"
3. In RealVNC connect to 192.168.149.1 in the top search bar
   - Password is "raspberrypi"



Raspberry Pi Desktop

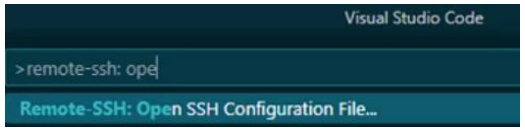


Using USB Tethering for ethernet
(highly recommended)

- Robots do not connect to internet
- While you are connected to the MentorPi hotspot, you can connect to the internet by setting up an ethernet network using USB Tethering
  - This lets your laptop use the network your phone is connected to

Connecting to Raspberry Pi in VS Code (highly recommended)

1. Install the following extensions published by Microsoft
   - Python
   - Remote – SSH
   - Dev Containers
2. Click Remote Connection button in bottom left  --> Connect to Host --> Enter IP address and password
3. Open Remote-SSH Config File in VS Code and add config information




```
1  Host MentorPi
2    HostName 192.168.149.1
3    User pi
```

4. Remote Connection Button --> Attach to Running Container --> MentorPi --> Enter password
5. Open '/home/ubuntu/ros2_ws' folder to work in