F1tenth - VSCode Remote Development

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(This write up accompanies the video tutorial)
Video Tutorial: https://youtu.be/Rwvaj8_jxlU

Setting up Visual Studio Code (VSCode) for remote development over SSH with a robot involves several steps. Here's a bulleted tutorial to guide you through the process:

1. Install VSCode and Required Extensions:
    a. Ensure that you have Visual Studio Code installed on your local machine.
        i. If not installed use https://code.visualstudio.com/docs/setup/linux to install it on your team's machine using debian/ubuntu instructions
    b. Open VSCode.

2. Install the "Remote SSH" Extension:
    a. In VSCode, go to the Extensions view by clicking on the square icon on the left sidebar or by pressing `Ctrl+Shift+X`.
    b. Search for "Remote Development" and install it by clicking the "Install" button next to the extension.

3. Connect to the Car:
    a. Click on the opposing arrows button in the bottom left corner
        i. Open the command palette in VSCode by pressing `Ctrl+Shift+P`.
        ii. Type "Remote-SSH: Connect to Host" and select it.
    b. Enter the SSH connection information for the car:
        i. IP address - 192.168.1.1
        ii. User name - nvidia
        iii. Enter this -> nvidia@192.168.1.1
    c. Identity file (path to your private SSH key, e.g., `~/.ssh/id_rsa`) should be the home directory

4. Connect and Verify:
    a. VSCode will attempt to connect to the car using SSH.
    b. Once connected, VSCode will create a new window for the remote development environment.
        i. If there is an error or it fails to connect via SSH, fill out the form on piazza and we will take a look at it

5. Open a Project Folder:
    a. Open the folder containing your car’s project files from the remote development environment. You can use the file explorer in VSCode to do this.

6. Start Coding:
    a. You can now start coding in VSCode as if you were working on your local machine.
    b. Changes made in VSCode will be reflected on the remote car.

7. Save and Commit Code:
    a. Save your changes in VSCode and use any version control system (e.g., Git) to commit and push your code to the car if necessary.

8. Disconnect or Close Remote Session:
    a. When you're done, you can disconnect from the remote session by clicking on the green remote indicator at the bottom left of the VSCode window and selecting "Close Remote Connection." or by closing VSCode

That's it! You've successfully set up VSCode for remote development over SSH with your car, allowing you to write, debug, and run code on the remote machine while enjoying the development environment of VSCode on your local computer.