

CSC401/2511 Assignment 1 Q&A

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January 2024

1 Working on the teach.cs Server

The data file for the assignment is around 1.24G in total, to avoid overloading the teach.cs server and to ensure that your code works properly in the grading environment, we highly recommend you work on the teach.cs server directly, rather than downloading the data file and setting up local environment on your own computer.

You can also write the code locally, but make sure to upload the code to the server to test periodically. We also provide a smaller set of test data [here](#) that you can use as a sanity check. However, it is from previous years, and working properly on this small test set doesn't necessarily mean your code is correct.

1.1 teach.cs Account

Everyone registered in this course should have access to teach.cs account and teach.cs server. If you have not already done so, please get an account following the instructions [here](#).

1.2 SSH and VSCode Setup

VSCode provides an easy integration with SSH. You can follow the steps here to set up your VSCode to connect to teach.cs server. These steps mostly follow the official document [here](#).

1. Install VSCode [here](#) if you haven't done so.
2. Install a supported open-ssh client following the instructions [here](#) according to your system. After the installation, make sure that typing `ssh` in your terminal gives the following output:

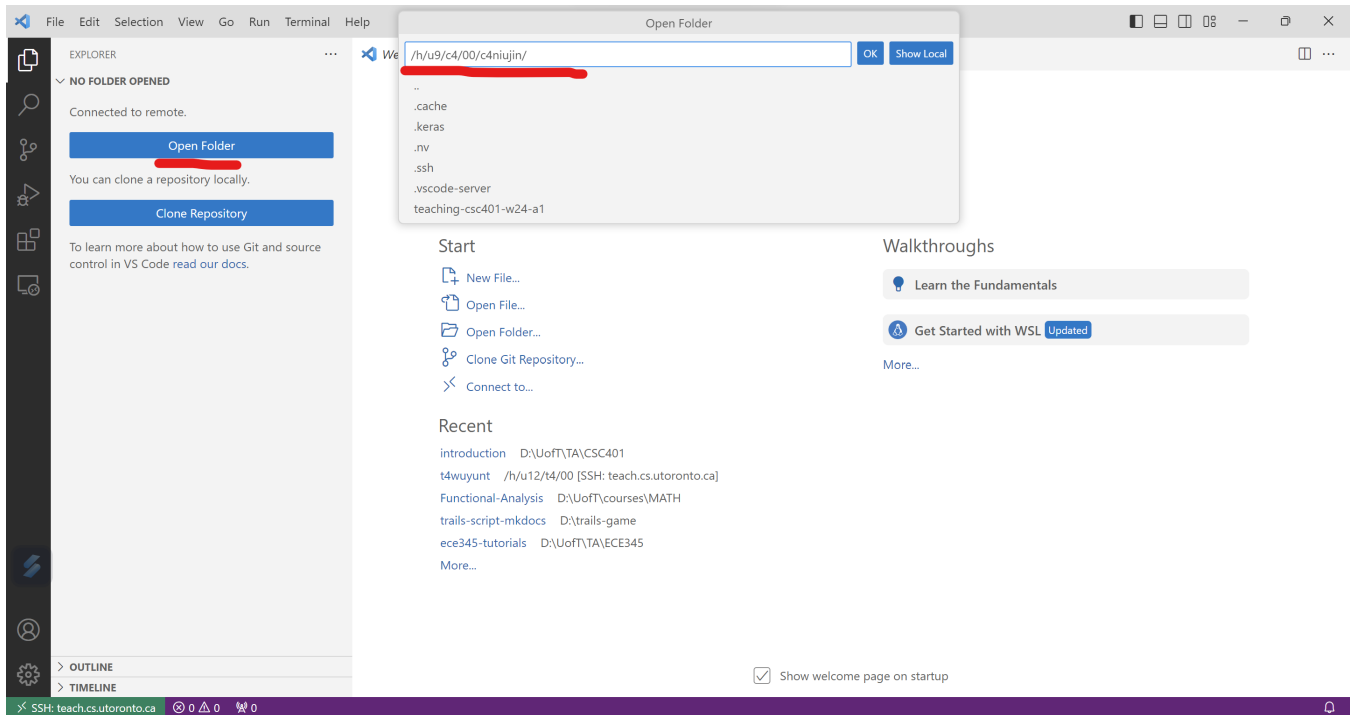
```
usage: ssh [-46AaCfGgKkMnqsTtVvXxYy] [-B bind_interface]
          [-b bind_address] [-c cipher_spec] [-D [bind_address:]port]
          [-E log_file] [-e escape_char] [-F configfile] [-I pkcs11]
          [-i identity_file] [-J [user@]host[:port]] [-L address]
          [-l login_name] [-m mac_spec] [-O ctl_cmd] [-o option] [-p port]
          [-Q query_option] [-R address] [-S ctl_path] [-W host:port]
          [-w local_tun[:remote_tun]] destination [command]
```

If not, restart your computer and try again.

3. Install the Remote-SSH extension for VSCode.
4. Open Command Palette (Ctrl+Shift+P or clicking on the top search bar and type in ">"), select Remote-SSH: Connect to Host...
5. In the new prompt, type in `username@teach.cs.utoronto.ca`. Press enter, type in your password and press enter again.

- You might need to select the platform type for remote. Choose **Linux**.
- Once you are connected, you can open any folder by clicking on **Open Folder** on the left panel, See [Figure 1](#) for an example layout. The default folder is your root folder. You can select your A1 folder to get started.

Figure 1: Initial Layout



- You can open the terminal by following the introduction [here](#).

1.3 Retrieving and Running Starter Code

After you setup the SSH connection, the next step is to retrieve the starter code from `/u/cs401/A1/Code`, you can do so by running the following command in the terminal:

```
# Make sure you are in the A1 folder you have created.
# For the example here, the folder name is a1
```

```
# The following cmd copies the directory containing all the starter code
# to your current directory a1.
wolf:~/a1$ cp -r /u/cs401/A1/code .
```

```
# You can now organize the code files in the VSCode explorer panel.
```

```
# The following command runs the code in python on the server
wolf:~/a1_test$ python3 ./code/a1_preprocess.py
```

```
/local/packages/python-3.10/lib/python3.10/site-packages/torch/cuda/__init__.py:546:
UserWarning: Can't initialize NVML
  warnings.warn("Can't initialize NVML")
2024-01-16 13:04:19.638347: I tensorflow/core/platform/cpu_feature_guard.cc:193]
```

```
This TensorFlow binary is optimized with oneAPI Deep Neural Network Library (oneDNN) to
use the following CPU instructions in performance-critical operations: AVX2 FMA
To enable them in other operations, rebuild TensorFlow with the appropriate compiler flags.
2024-01-16 13:04:21.426044: E tensorflow/compiler/xla/stream_executor/cuda/cuda_driver.cc:267]
failed call to cuInit: CUDA_ERROR_NO_DEVICE: no CUDA-capable device is detected
2024-01-16 13:04:21.426132: I tensorflow/compiler/xla/stream_executor/cuda/cuda_diagnostics.cc:156]
kernel driver does not appear to be running on this host (wolf):
/proc/driver/nvidia/version does not exist
usage: a1_preprocess.py [-h] -o OUTPUT [--max MAX] [--a1-dir A1_DIR] N
a1_preprocess.py: error: the following arguments are required: N, -o/--output
```

When you run the code, It is fine to see various warnings about NVML or DNN, because the basic teach.cs server doesn't have GPU support, and GPU is not needed for the first three parts of the assignment. You will see the instructions to run your code on GPU through teach.cs server in the fourth part of the assignment.

Note: You should not try to install any of the additional packages. The teaching team got many version mismatch errors when grading last year due to inconsistency in the libraries students used. Errors caused by version mismatch due to the installation of additional packages will receive zero marks on the relevant sections.

2 Common Questions

To be updated.