Virtual Machine Setup

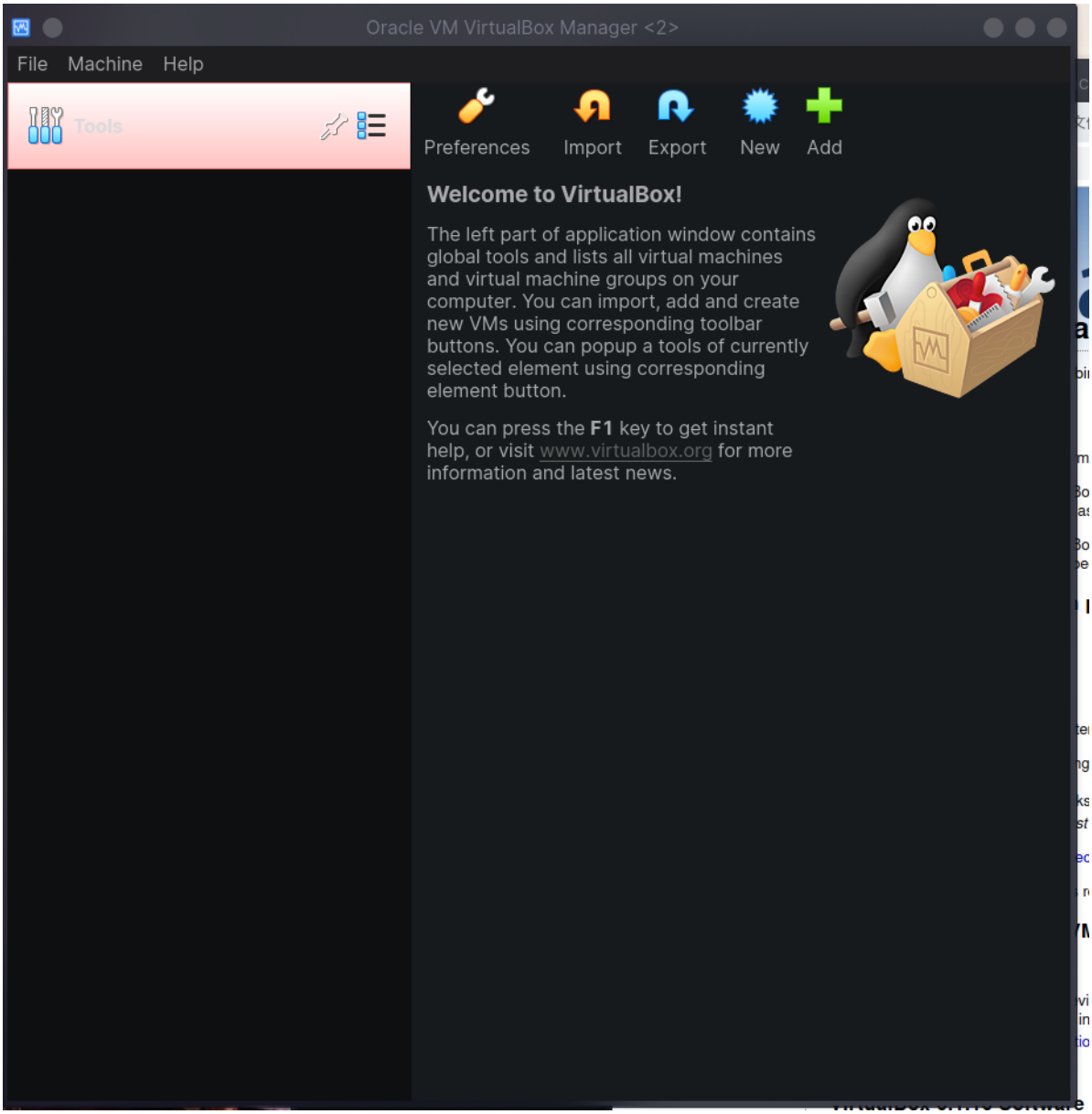
To make sure the reproducibility of the projects, we use Linux®, Icarus Verilog, GNU C/C++ toolchains at specific versions as the running and grading environment of the code. The following are some core components you can use:

- Linux Kernel: `5.10.5 (zen)`
- GCC Version: `10.2.0`
- Clang Version: `11.0.0`
- GNU Make: `4.3`
- CMake Suite: `3.19.2`
- Ninja: `1.10.2`
- Icarus Verilog: `11.0`

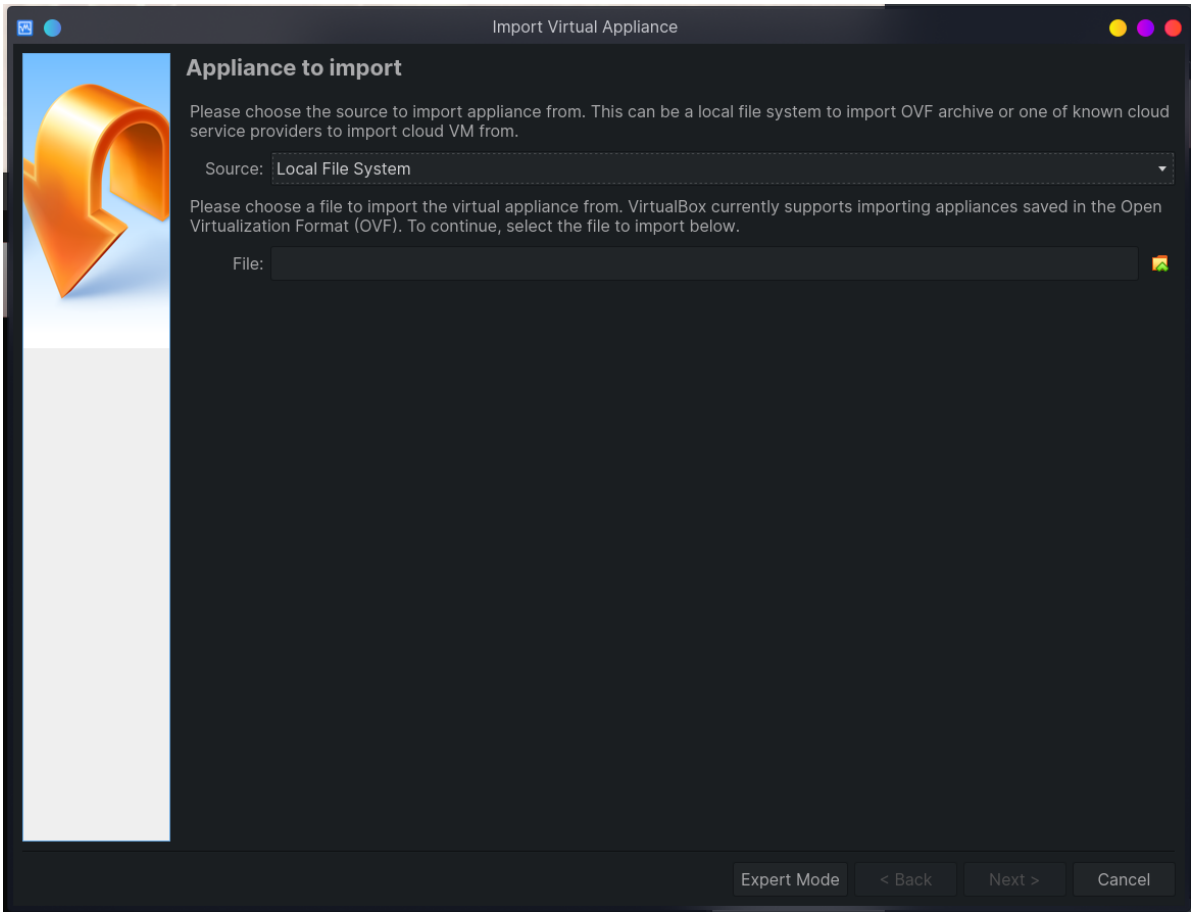
We have already pre-configured a virtual machine image, you can find it on https://cowtransfer.com/s/1abc5bcce78349 The password for downloading is j27xvv
After entering the password, you should be able to see a file named `csc3050.ova`

This is a file recognized by `VirtualBox`. You can find the installer for it at [this link (https://www.virtualbox.org/wiki/Downloads)](https://www.virtualbox.org/wiki/Downloads).

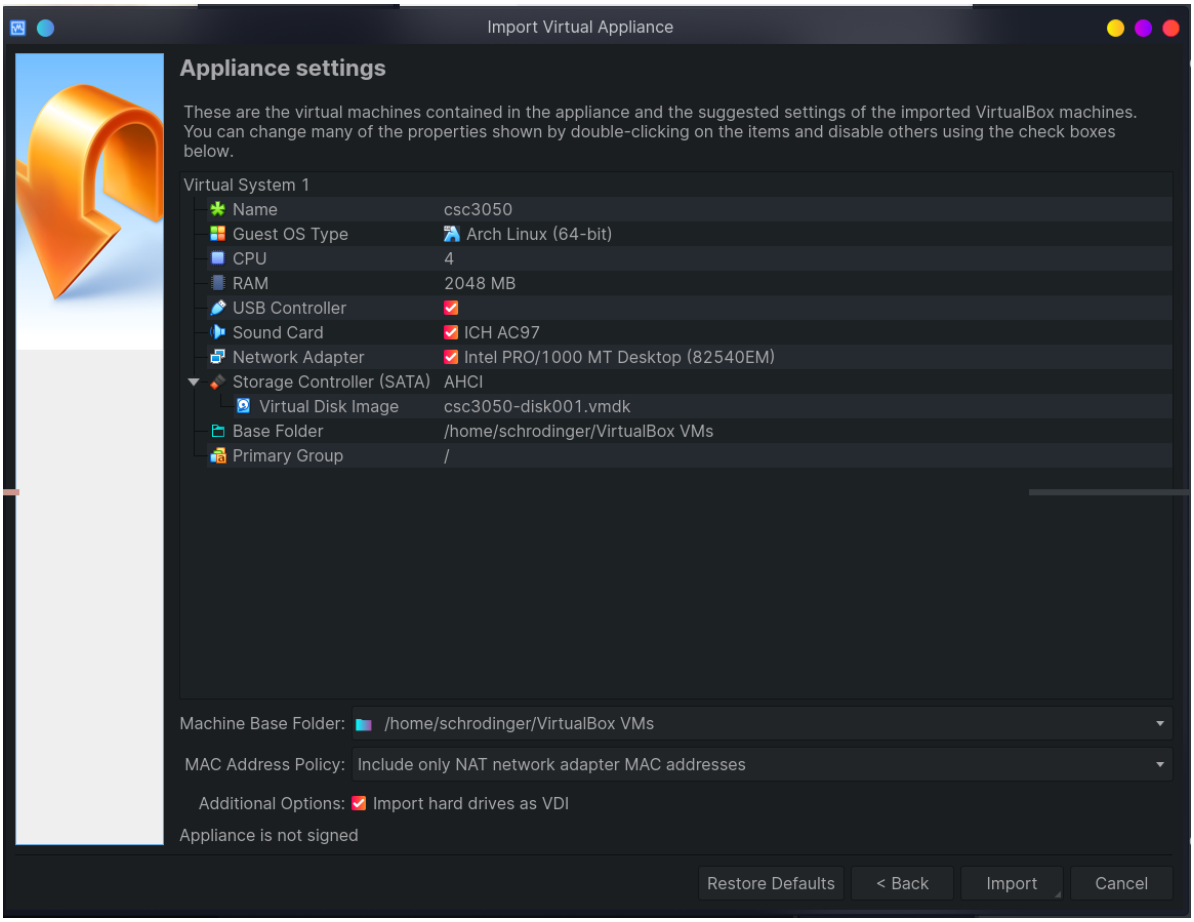
After the `VirtualBox` is installed, you should be able to open it and find a window looks like the following:



Click the  button, it will open a new dialog:

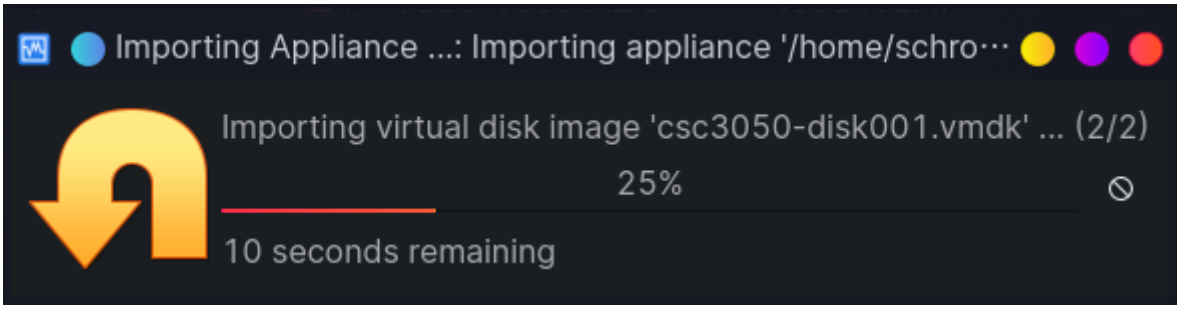


Click  , choose the downloaded file and then click `Next`.

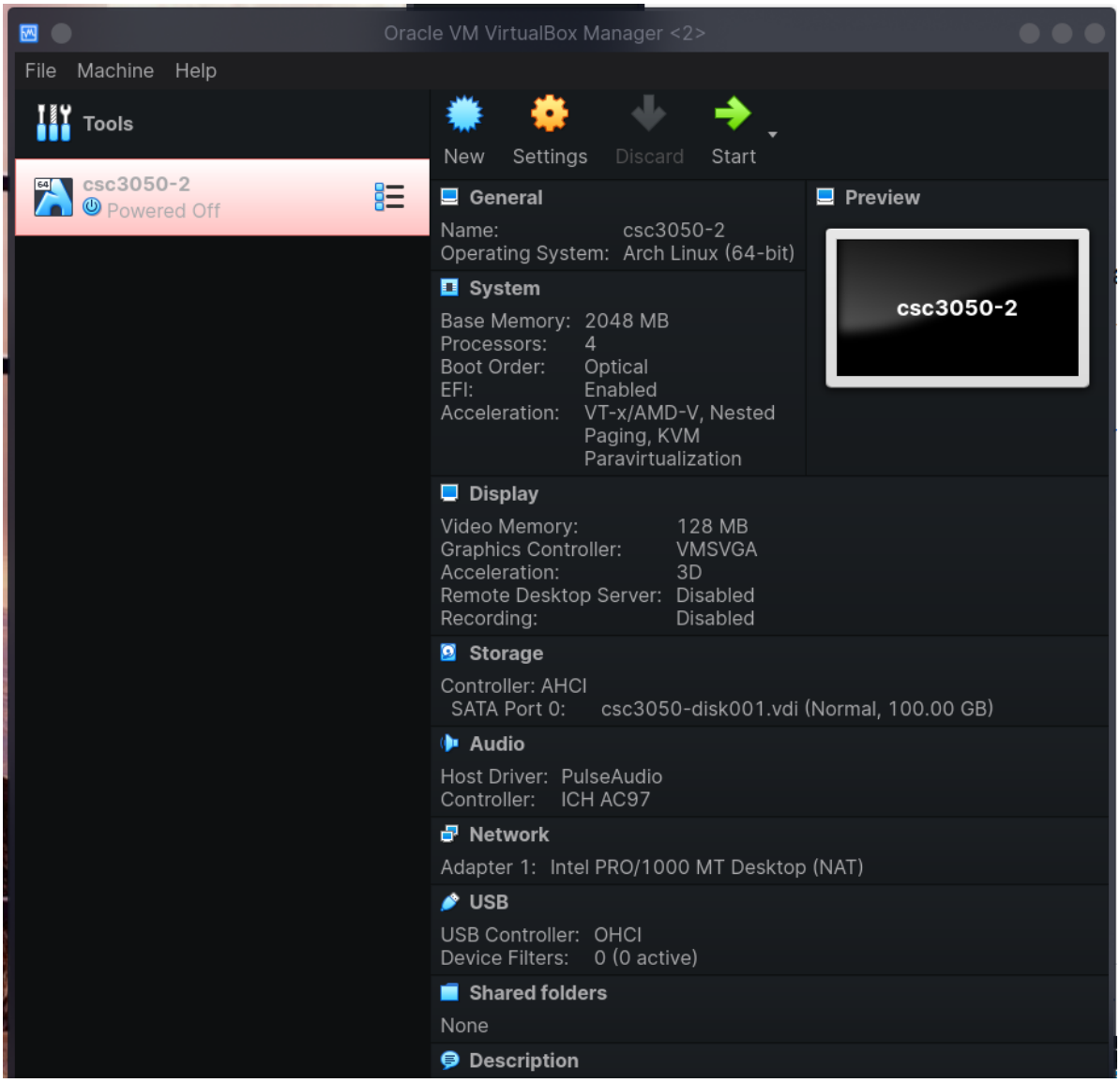


You can modify a bit in this dialog to make sure the virtual machine will have a good performance while not affect your Hosting PC much (The default configuration should work on most modern PCs, so you can just keep it unchanged if you do not know what you are doing).

Click `Import` and wait it finishing the importing.

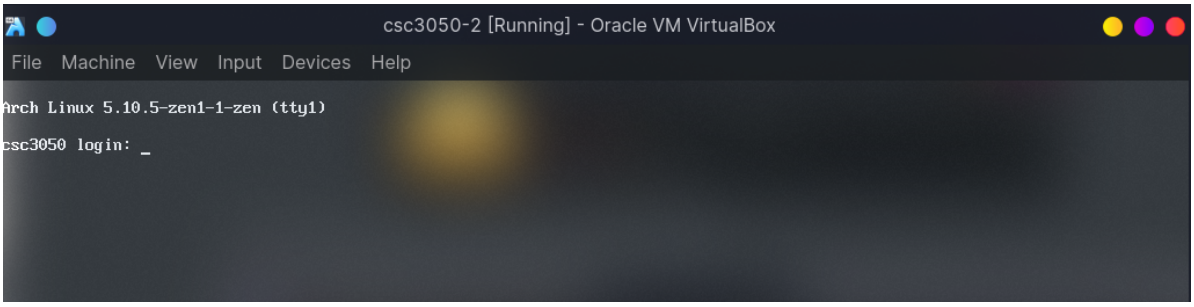


Then, you will find the virtual machine at the main window of `VirualBox`:



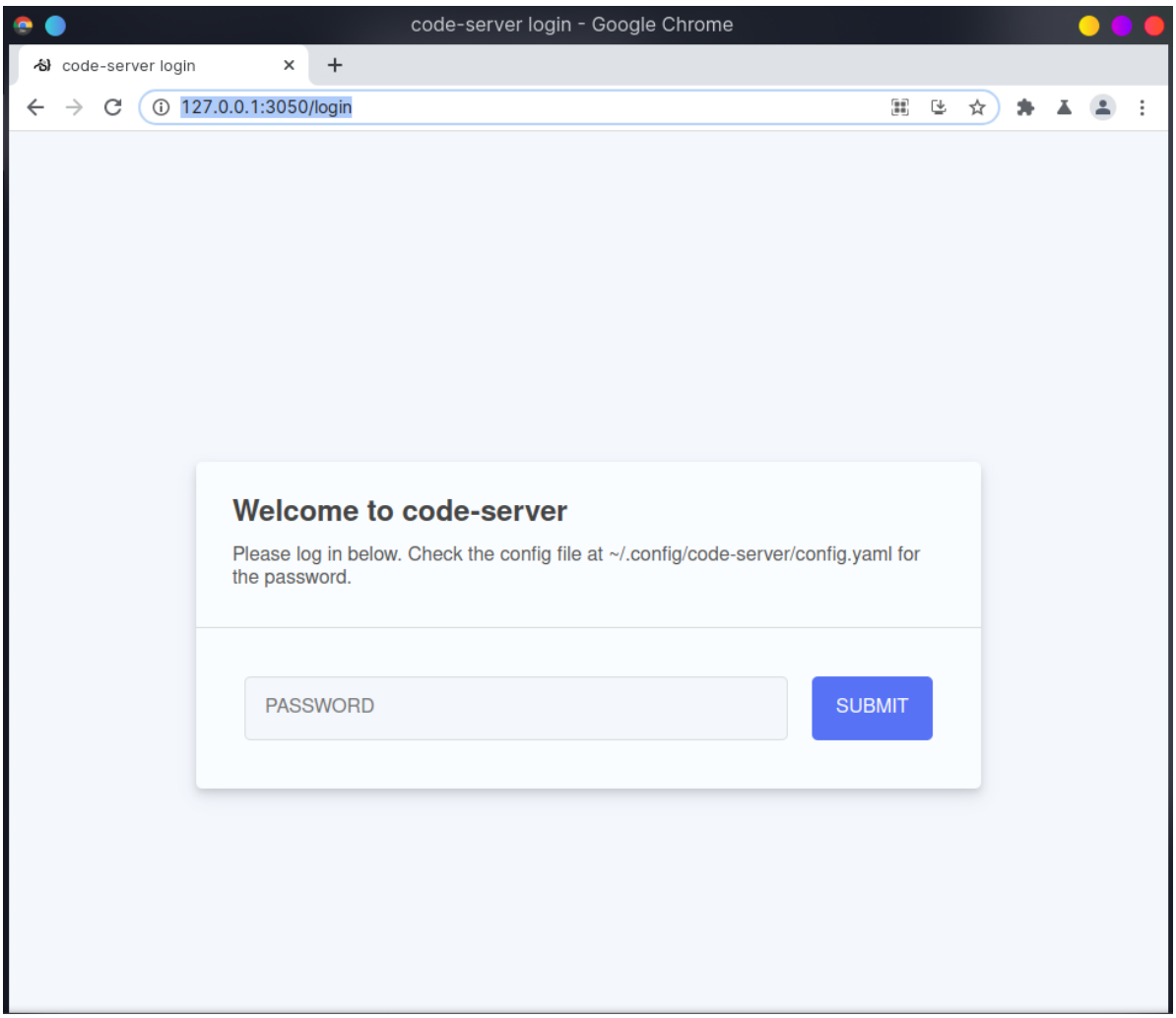
Click 

to boot up the VM. The process will end up with the following window:

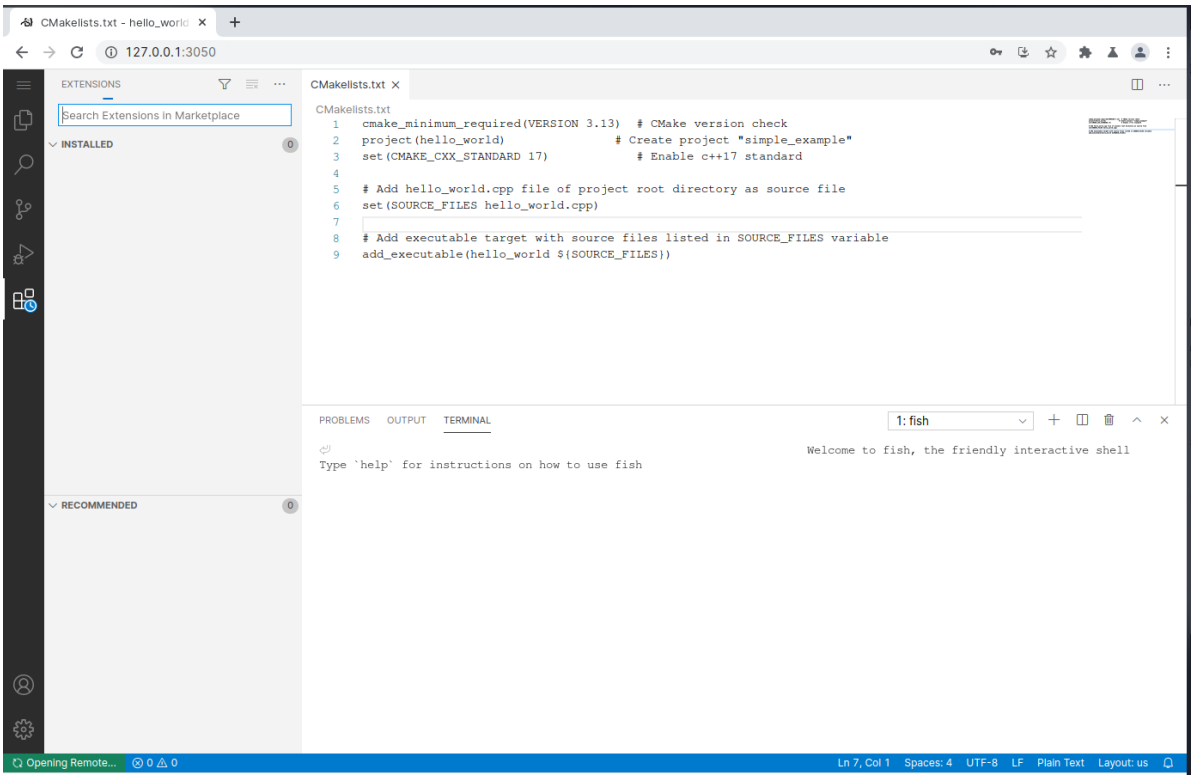


Keep the VM open and launch a browser in you host PC.

Enter `http://127.0.0.1:3050/login` into the address bar and visit the site:



Enter the password `csc3050` and you will then see a vscode running in your browser

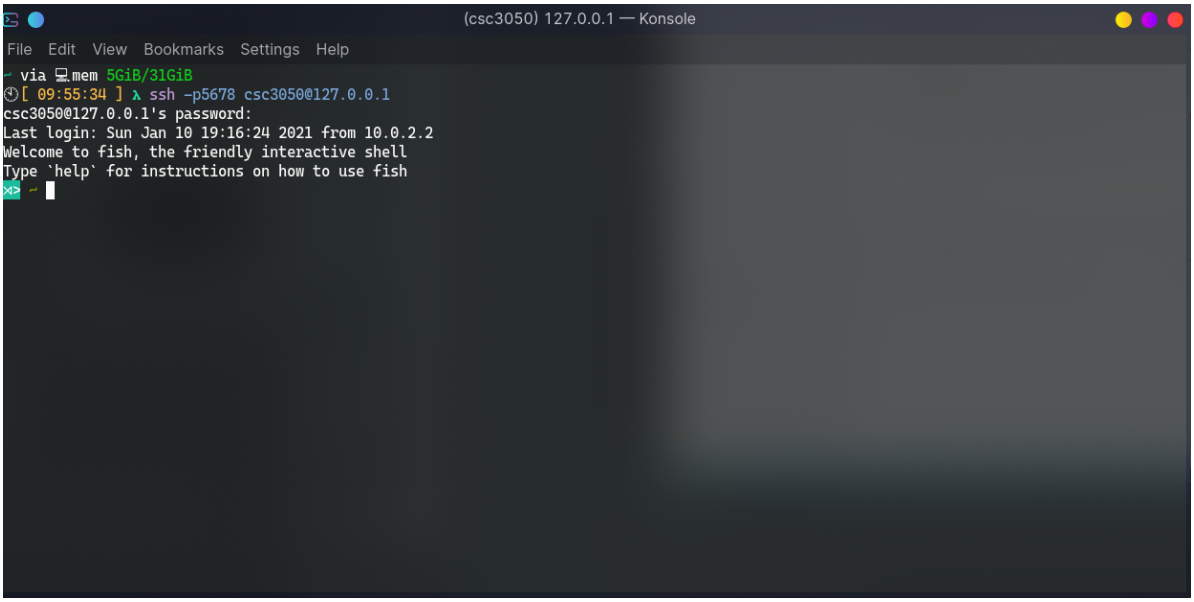


Additionally, an `openssh` server is also running and exposed. To test with, open a terminal (or PowerShell on Windows),

Enter the following command:

```
ssh -p5678 csc3050@127.0.0.1
```

And enter the password `csc3050`, you will then login the machine:



How to Transfer Files to VM

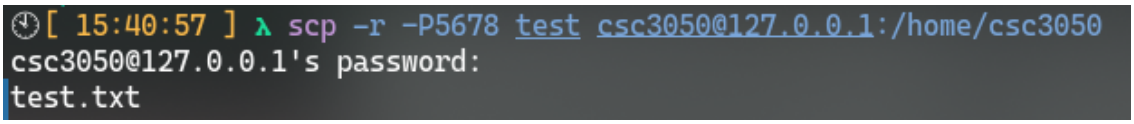
- Firstly, one can sync the files via Git (recommended)
- Secondly, since SSH is on; one can send files between the VM and the host via SCP.

  For example, we have the following files on the host

  ```
  .
  └──test
     └── test.txt
  ```

  One can then send the directory `text` to VM via

  ```
  scp -r -P5678 test csc3050@127.0.0.1:/home/csc3050
  ```

  Similary, to copy things from the VM, one can type

  ```
  scp -r -P5678 test csc3050@127.0.0.1:/home/csc3050
  ```

> One can also try use GUI aided SFTP