Lec00 Environment Setting
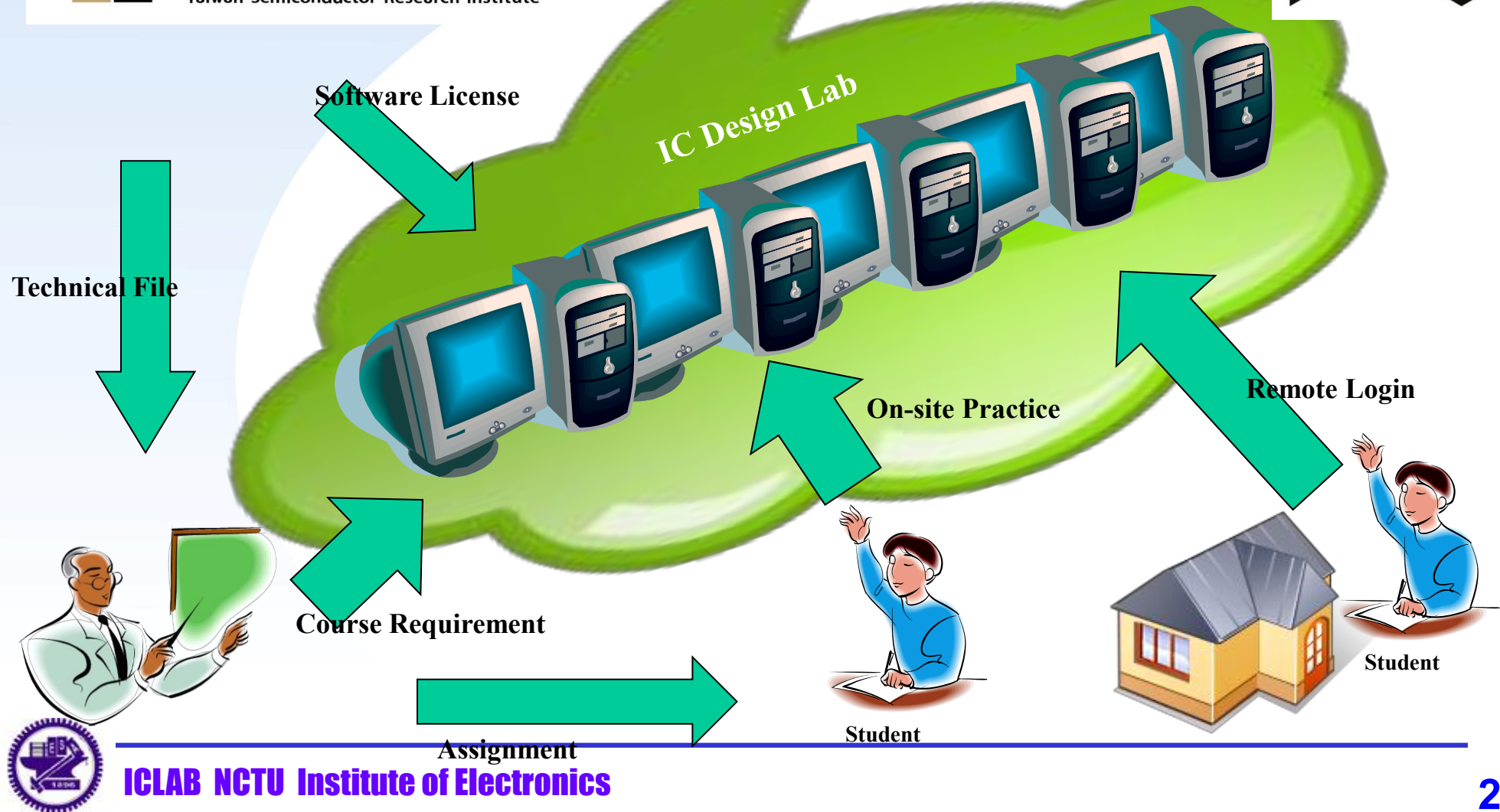
Lecturer : Hsi-Hao Huang

Courtesy of : Ping-Yuan Tsai, Li-Wei Liu

2023 spring

Software License

IC Design Lab

Technical File

On-site Practice

Remote Login

Course Requirement

Student

Student
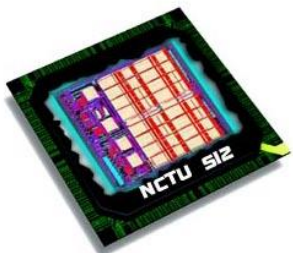
Assignment

Work Station
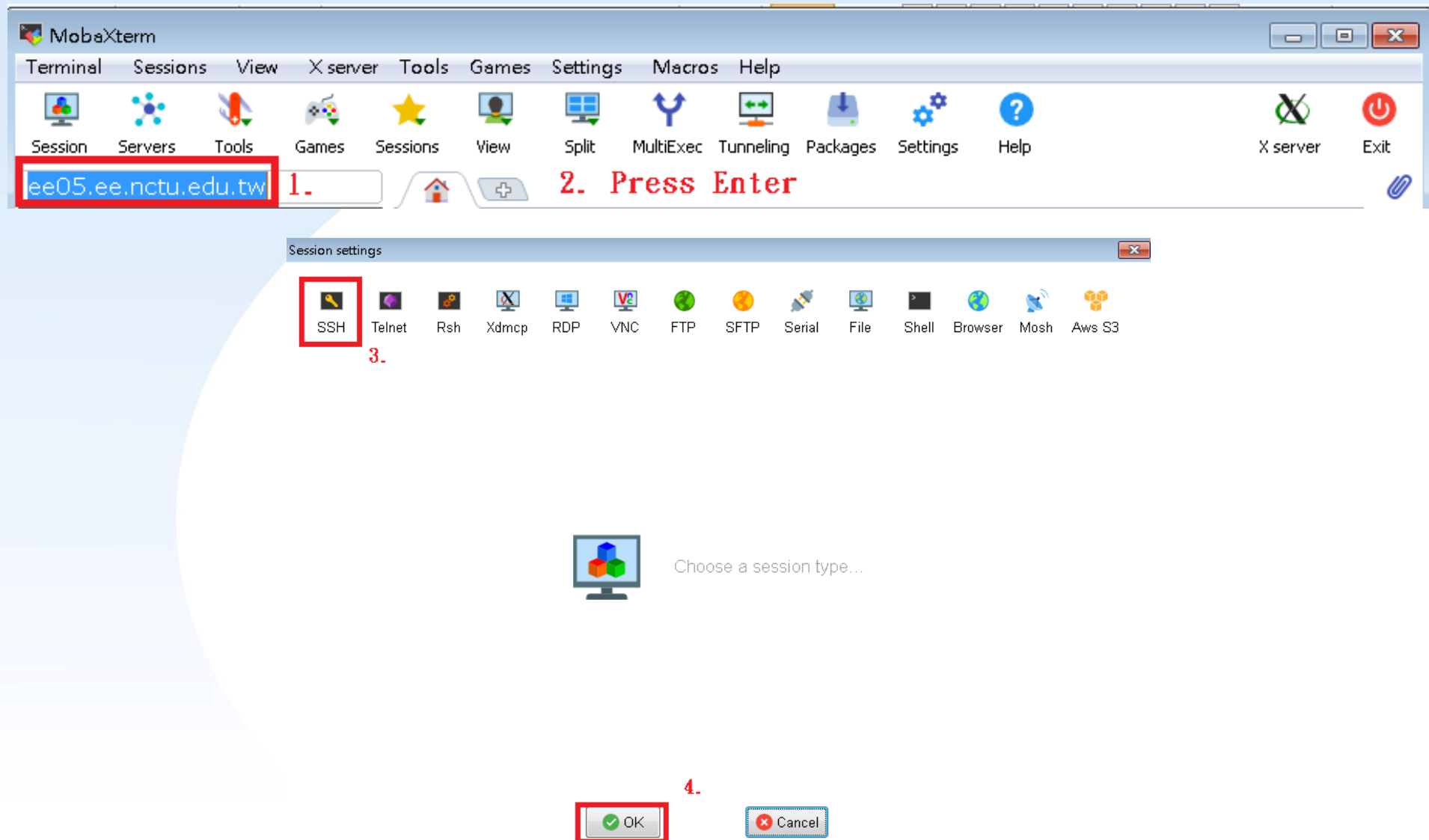
✓ **Use SSH to connect**
  – port = 415

✓ **ee??.ee.nctu.edu.tw (?? = 02~22)**

✓ **linux??.ee.nctu.edu.tw (?? = 02~32)**

✓ **Access**
  – Mobaxterm (Recommended)

  Appendix:
  – Putty + X-display software (Xwin-32, Xming) + FTP (Filezilla)
  – Sublime

Mobaxterm

Mobaxterm

✓ **Default with X11 Forwarding**

✓ **Embedded sftp system**

Linux : Basic Operations

✓ **>man COMMAND** //format and display the on-line manual pages
  - ex: man ln

✓ **>mkdir DIRECTORY** //make directory
  - e.g. mkdir –p /home/test

✓ **>cd DESTINATION** //change current directory
  - e.g. cd ../iclab08/Lab01/
  - e.g. cd (change to home directory)

✓ **>cp SOURCE DESTINATION** //copy files
  - e.g. cp ABC.v DEF.v
  - e.g. cp –rf Lab01/ Lab02/

✓ **>mv SOURCE DESTINATION** //move or rename files
  - e.g. mv ABC.v ../ABC.v
  - e.g. mv ABC.v DEF.v

Linux : Basic Operations

✓ **>rm FILE_NAME** //remove (delete) files
- – e.g. rm ABC.v
- – e.g. rm –rf Lab01/

✓ **>ls** //list directory contents
- – e.g. ls –l
- – or you can use *dir* as well.

✓ **>ln TARGET LINK_NAME** //make links between files
- – e.g. ln –s ~iclabt01/LIB/slow.db slow.db

✓ **>quota** //display disk usage and limits
- – e.g. quota

On-line Text Editor

✓ **vim / vi**
  – vim [filename]
  – e.g. vim test.v

✓ **gedit**
  – gedit [filename] &
  – gedit test.v &

On-line Text Editor – VIM

✓ **Command mode**
  – Move cursor**:**
  - [Page Down], [Page Up]
  - [Home], [End]
  - ↑(k)↓(j)←(h)→(l): move cursor
  - G: cursor moves to last column
  - nG: "n" is number. cursor moves to "n"th column
  - gg: cursor moves to the first column. (=1G)
  - n<Enter>: "n" is number. cursor moves down n columns.
  – Search & Replace:
  - /word: search for "word"
  - n: search the next
  - N: search the previous

On-line Text Editor – VIM

– Delete & Copy & Paste:

- [delete] or x: delete the character under the cursor.
- X: delete the character before the cursor.
- dd: delete a column where the cursor located at.
- ndd: "n" is number. delete "n" columns.
- yy: copy a column where the cursor located at.
- nyy: "n" is number. copy "n" columns.
- u: recover.
- . : repeat the previous action.
- [Shift]+v : select the column where the cursor located at.
- [Ctrl]+v+[Shift]+I : edit multi-line.

On-line Text Editor – VIM

✓ **Insert mode:**

- i : switch to insert mode before the current position.
- [Esc]: switch from the insert mode to the command mode

✓ **Visual mode:**

- :w : write the current buffer to disk.
- :q : closes current window.
- :wq : write the current buffer to disk and closes current window.
- :q! : closes current window forcibly.
- :set nu : display the column number.

Editor

✓ **Download files,use your own editor and re-upload**
- Notepad++
- Visual Studio Code
- Sublime Text
- Wordpad...

※ Mobaxterm will download files into local computer and open it

Editor
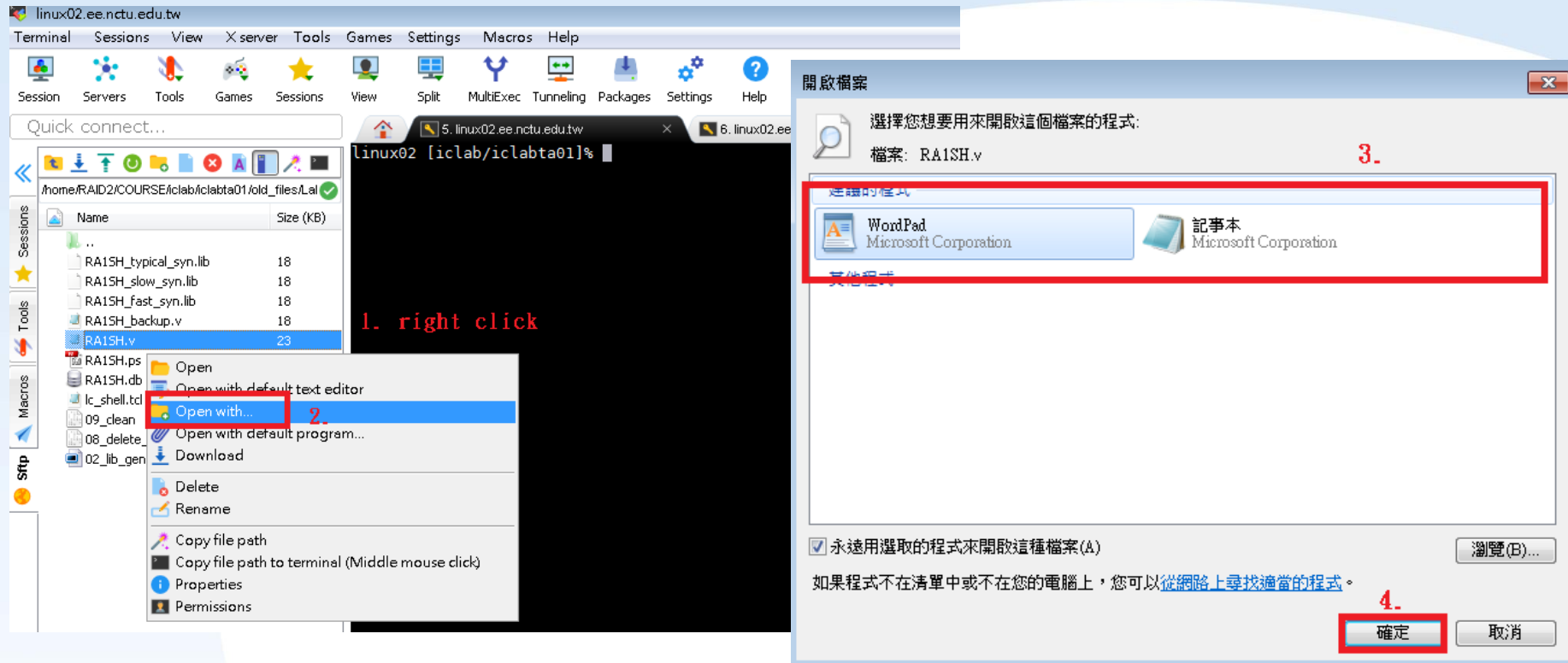
- ✓ **Can choose any editor in your computer**

- ✓ **Always Remember to BACKUP**

Appendix

- ✓ **Notepad ++**

- ✓ **Putty & Xming Setting**
  (Alternative Login Software of Windows)

- ✓ **Sublime Editor**
  (Recommended for Mac OS)

Notepad++

Text Editor – notepad++

✓

https://notepad-plus-plus.org/

Text Editor – notepad++ setting

Reference Video: https://www.youtube.com/watch?v=cu8UIGFwImA

Text Editor – notepad++

upload/download

connect

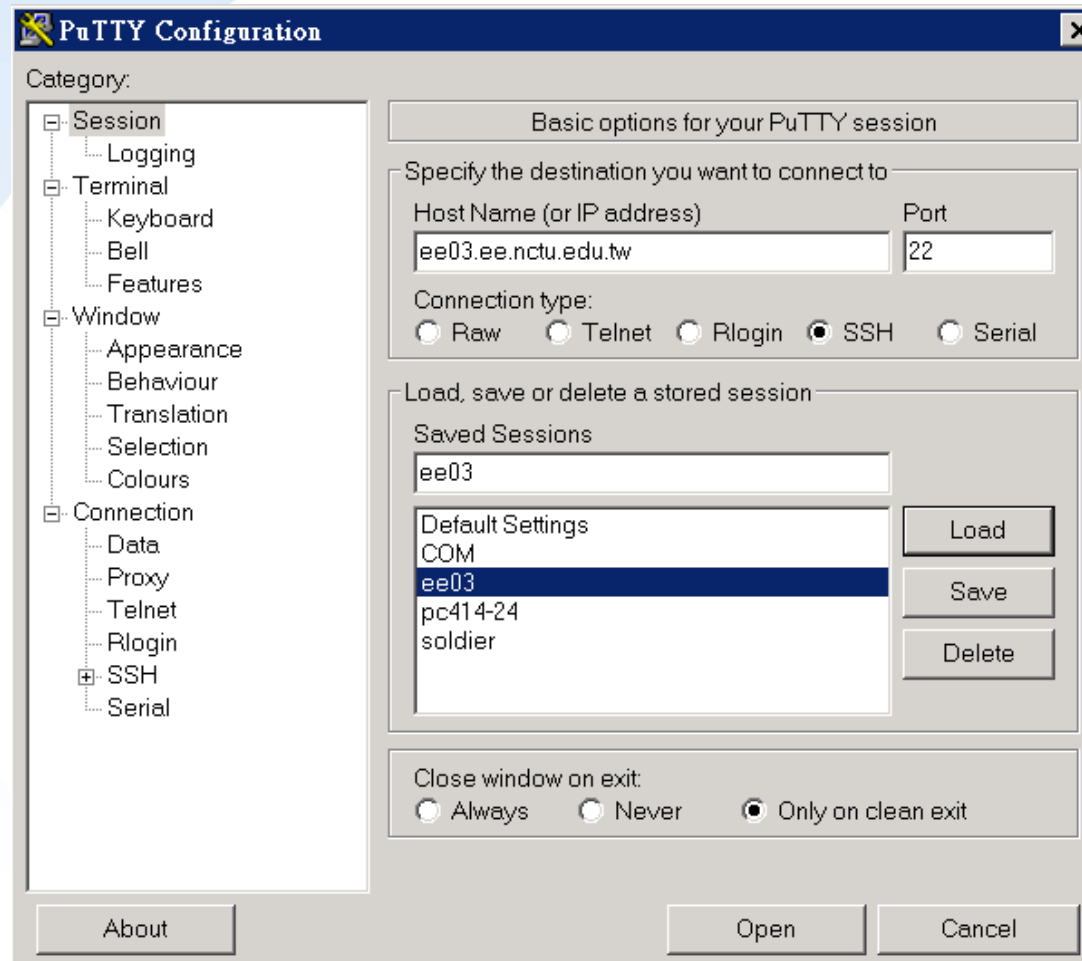**Edit multi line: Alt + left mouse button**
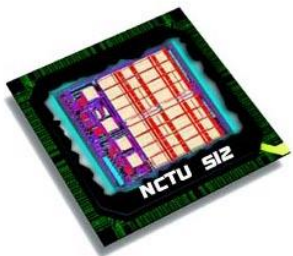
Putty & Xming
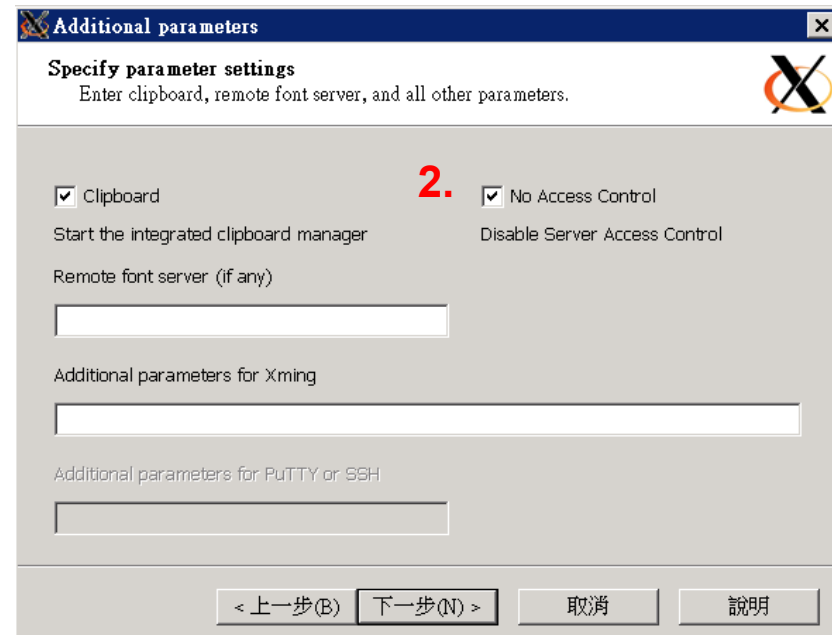
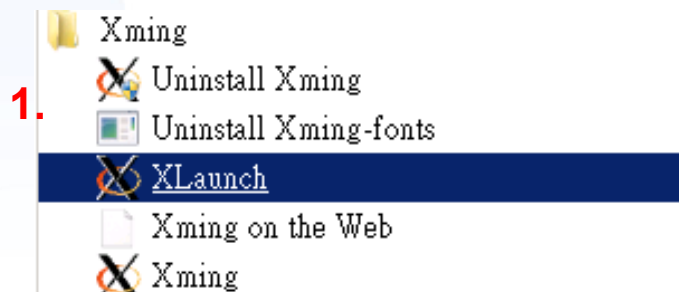# Putty & Xming

✓ **Software**

– Putty for connecting work station

Putty & Xming

✓ **Software**

– Xming, Xwin-32 or other X viewer to display the GUI terminal to your computer

– Xming – Free Software
http://sourceforge.net/projects/xming/
http://sourceforge.net/projects/xming/files/Xming-fonts/7.5.0.47/

– 1. Execute XLaunch
  2. Check No Access Control
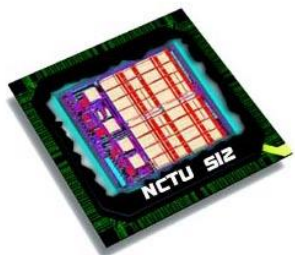 3. Press Next or Yes for all other pages

Putty & Xming

✓ **Type setenv DISPLAY 140.113.x.x:0 in work station to display the GUI interface onto your computer**

✓ **If you're using or your IP is floating, try the following flow**

  – 1. Type Host Name IP Address
    2. Click Category: Connection -> SSH -> X11
    3. Check Enable X11 forwarding
    4. Fill in Localhost:0
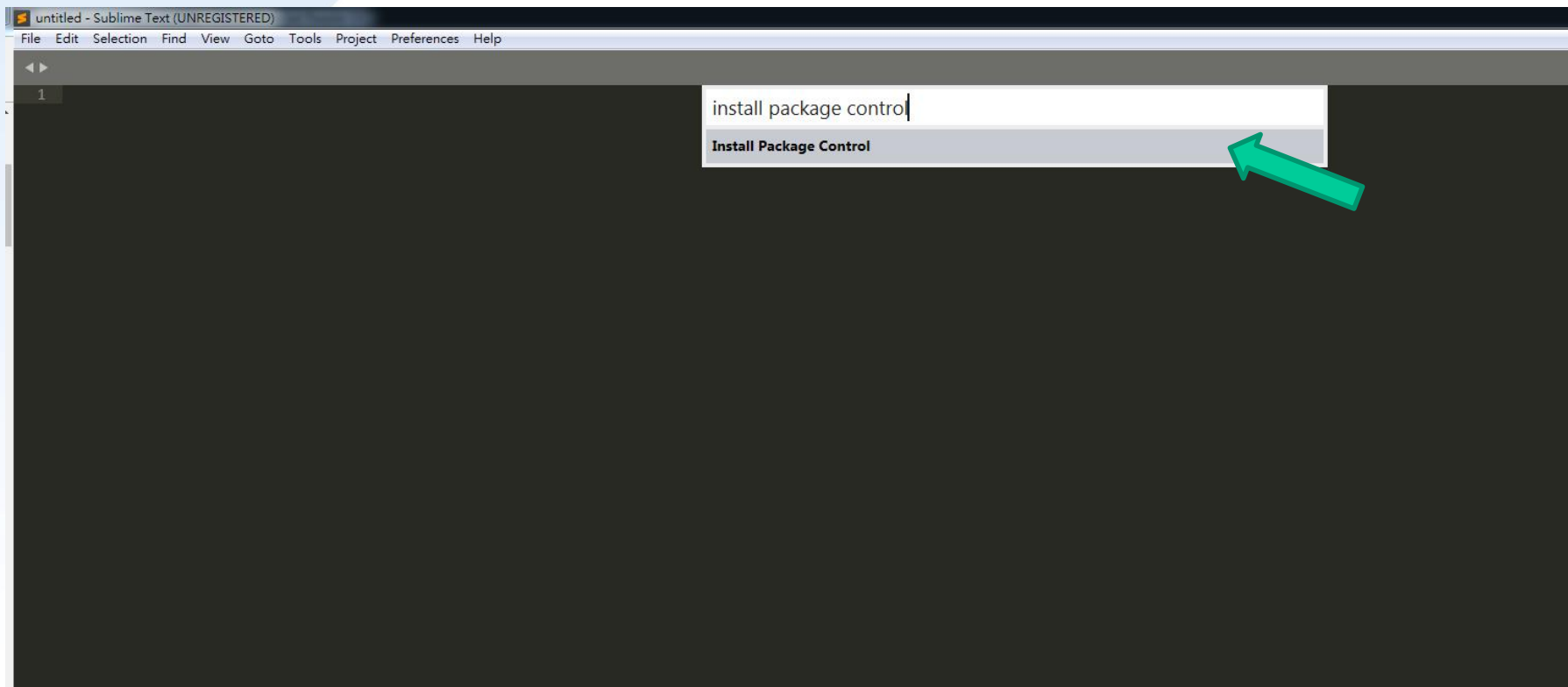   5. Click Open
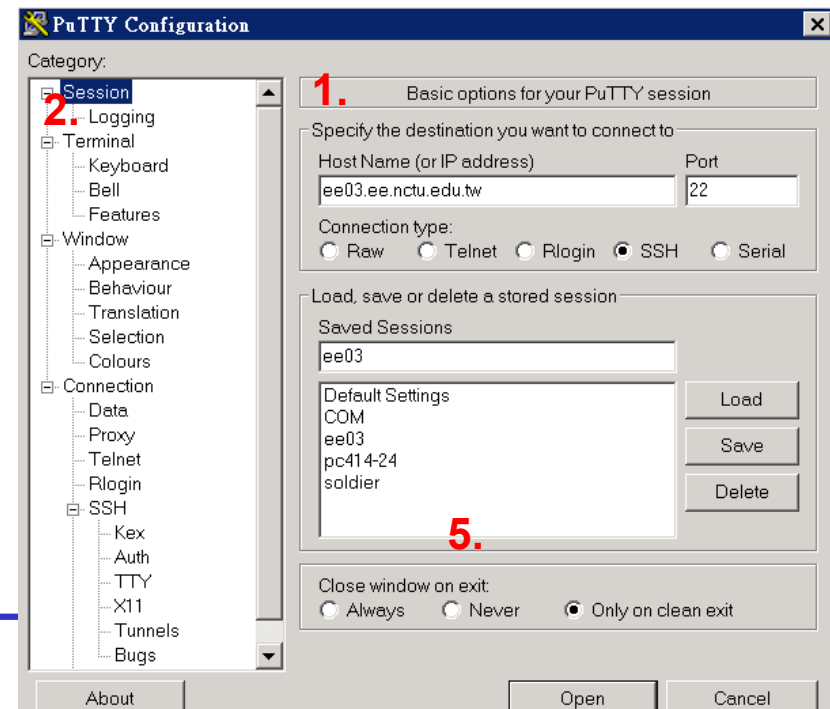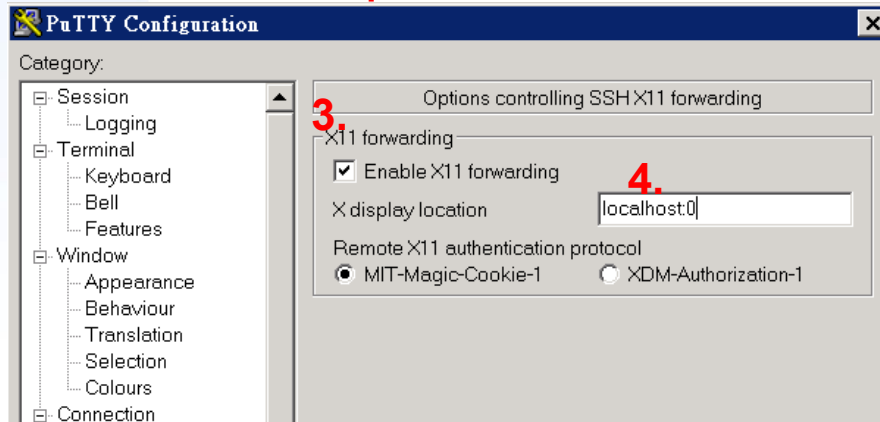
Sublime

Courtesy of Chieh-Yu Lin
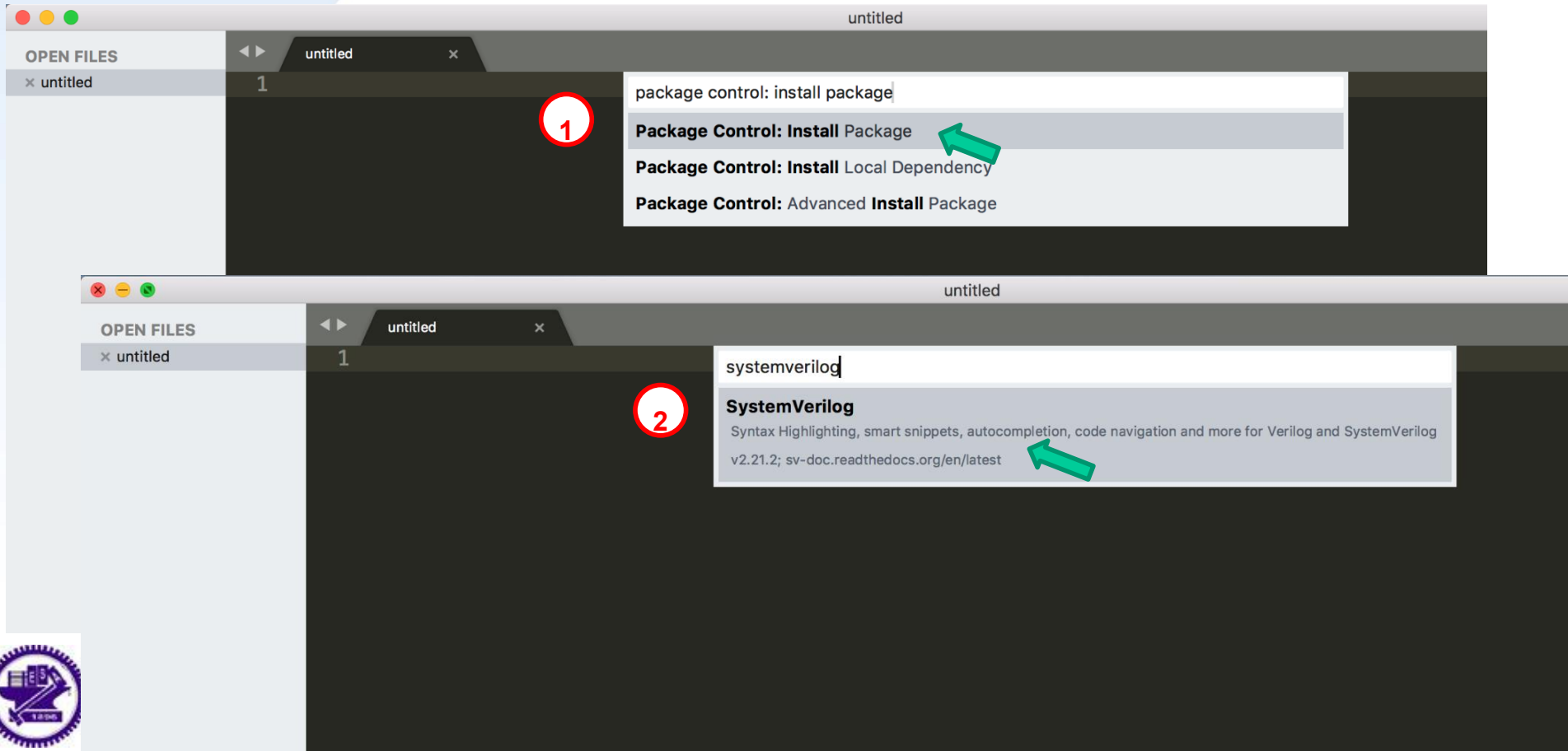
Step 1 Install Basic Plugin

Install Package Control

- ✓ **For Mac User, Please the following "Ctrl" would be command**

- ✓ **(Open Command Palette (Ctrl + shift + p) → Type " install package control " → click**
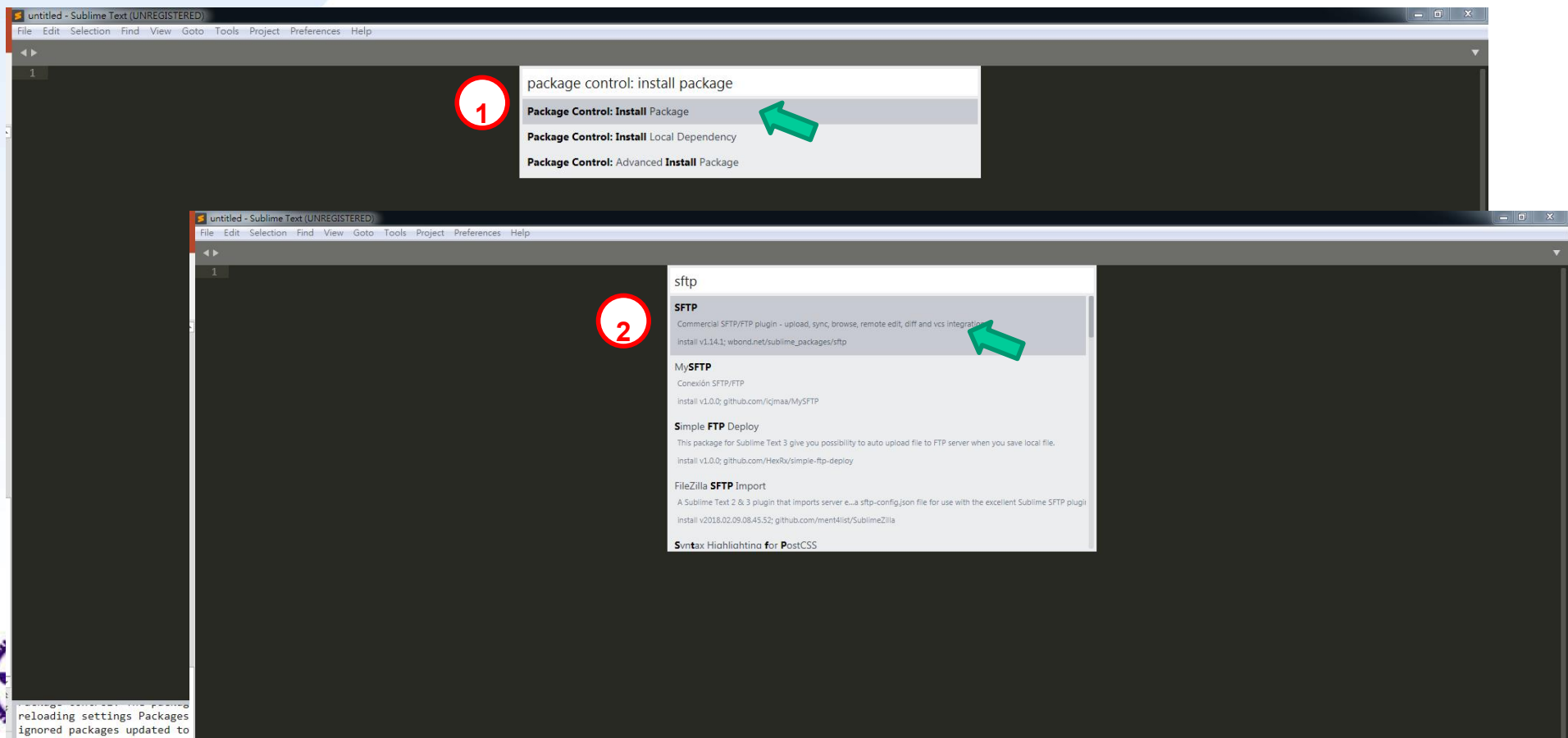
Install SystemVerilog Plugin

① **Open Command Palette (Ctrl + shift + p) → Type " Package Control: Install Package " → click**

② **Type " SystemVerilog " → click**

Install SFTP Plugin

① **Open Command Palette (Ctrl + shift + p) → Type " Package Control: Install Package " → click**

② **Type " SFTP " → click**

Step 2 Using SFTP Plugin to synchronize the remote file

Generate sftp-config.json

✓ **Method 1 :** <u>Right Clock → SFTP/FTP → Map to Remote</u>，it would generate a new "sftp-config.js" in the same folder
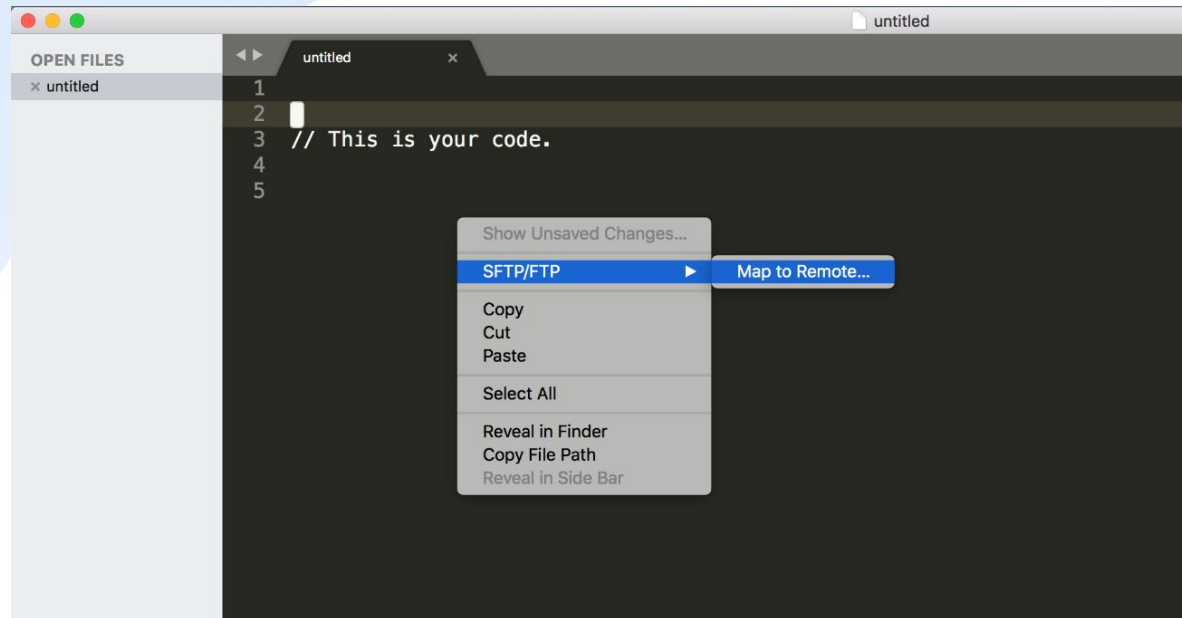
✓ **Method 2（Recommended）:** If you have already set your sftp-config.json, you just directly copy it into the synchronous folder, then modify the remote_path. Then You don't have to start from the blank sftp-config.json

Setting sftp-config.json
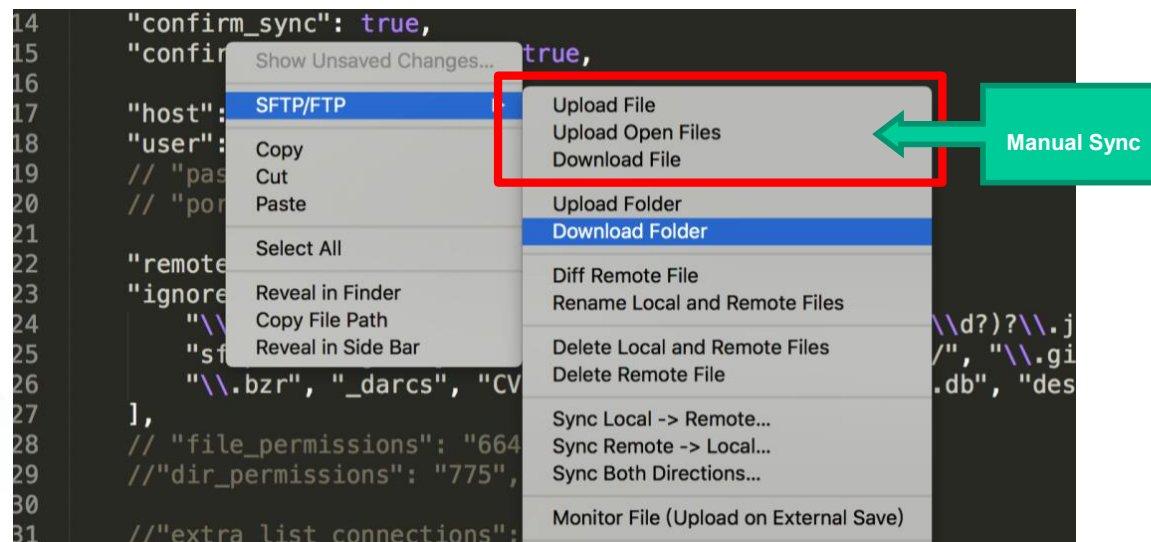
Upload/download Folder

Sync Local and Remote File

✓ **Automatic Sync :**
  – When you finish your design, Ctrl + s would save the file and automatically upload to the server
  – When you open the file , it would automatically download the latest file to the local host (if **confirm_sync** is set **true**, it would have a query to sync)

✓ **Manual Sync:**

- ✓ **Author : 2018 Ping-Yuan Tsai (bubblegame@si2lab.org)**

- ✓ **Modified: 2019 Li-Wei Liu (willvegapunk.ee03@g2.nctu.edu.tw)**