

Student User Guide for Virtual Lab Infrastructure (VLI) Workspace

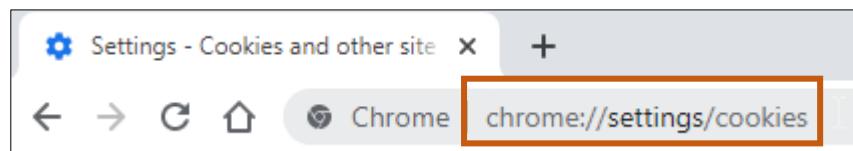
TABLE OF CONTENTS

1. BROWSER REQUIREMENTS AND CONFIGURATIONS	3
2. LOGIN ACCESS TO VOCAREUM LAB.....	4
3. ACCESS TO CLOUD IDE - MICROSOFT EDITION (if applicable to your course).....	6
3.1 COPY/PASTE TEXT FROM LOCAL DESKTOP TO IDE	11
3.2 CREATING LAUNCH.JSON FILE FOR DEBUGGING FLASK APPLICATIONS (if applicable to your course).....	11
3.3 LAUNCHING FLASK APP BROWSER (if applicable to your course).....	14
3.4 LAUNCHING HTML BROWSER (if applicable to your course)	15
4. ACCESS TO JUPYTERLAB IDE (if applicable to your course)	17
5. ACCESS TO VIRTUAL DESKTOP	20
5.1 CONFIGURATION OF VIRTUAL DESKTOP SCREEN	22
5.2 COPY/PASTE TEXT FROM LOCAL DESKTOP TO VIRTUAL DESKTOP	23
6. VIRTUAL DESKTOP APPLICATIONS	26
6.1 VISUAL STUDIO CODE (if applicable to your course).....	26
6.2 JUPYTER NOTEBOOK FOR PYTHON 2 (if applicable to your course).....	27
6.3 CREATING MONGODB CONNECTION (if applicable to your course).....	29
6.4 CISCO PACKET TRACER (if applicable to your course)	32
6.4.1RETRIEVE FILE FOR LAB EXERCISE.....	34
6.5 EASY68K EDITOR/ASSEMBLER (if applicable to your course)	36
7. END LAB SESSION	37
8. CREATE RECORDING LINKS FOR RUNNING OF PROGRAM (if applicable to your course)	38
9. SUBMISSION OF ASSIGNMENT IN ZIP FORMAT (if applicable to your course)....	42
10. TASK LIST OF TMA/ECA SUBMISSION (if applicable to your course)	49
11. IT SUPPORT	50
12. IMPORTANT POINTS TO TAKE NOTE (if applicable to your course)	50
13. APPENDIX A-1 [DOWNLOADING FILE FROM VIRTUAL DESKTOP]	51
14. APPENDIX A-2 [UPLOADING OF FILE TO VIRTUAL DESKTOP]	53
15. APPENDIX A-4 [RE-CONNECT VIRTUAL DESKTOP]	54
16. APPENDIX A-5 [ACCOUNT REGISTRATION FOR CISCO SKILLS FOR ALL].....	54
17. APPENDIX A-6 [ACCOUNT REGISTRATION FOR CISCO NETWORKING ACADEMY].....	58
18. ANNEXE	62
19. FAQ	62

1. BROWSER REQUIREMENTS AND CONFIGURATIONS

To ensure consistency and the best user experience in web browser when accessing Vocareum Lab, we would recommend students to use [Google Chrome](#) (Click the link to install if it is not available on your computer). As best practice to configure the browser, please follow the configurations below.

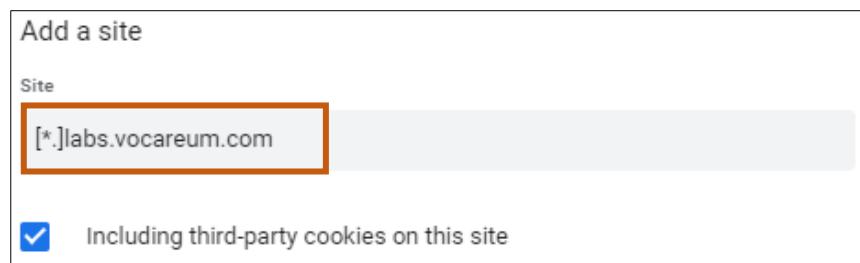
- a. Update the web browser to the latest version.
- b. System Requirements (Please refer [here](#) for the latest information):
 - i. Windows
 1. Windows 7, Windows 8, Windows 8.1 or Windows 10
 2. An Intel Pentium 4 processor or later that's SSE3 capable
 - ii. MAC OS
 1. OS X El Capitan 10.11 or later
 - iii. Linux OS
 1. 64 bit Ubuntu 18.04+, Debian 10+, openSUSE 15.2+, or Fedora Linux 32+
 2. An Intel Pentium 4 processor or later that's SSE3 capable
- c. Configure browser to allow third-party cookies from Vocareum. The screenshots provided at the time of writing is based on version [102.0.5005.63](#).
 - i. Open Chrome browser.
 - ii. On the URL bar, enter **chrome://settings/cookies**



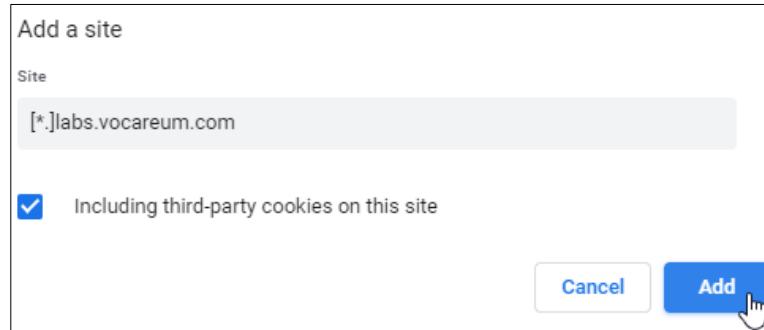
- iii. Scroll down the page until you see this section – **Sites that can always use cookies** and click on the **Add** button.



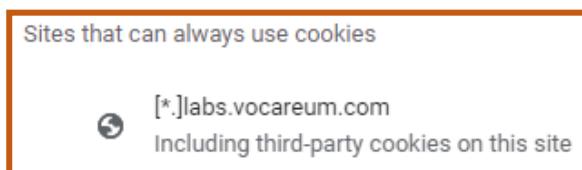
- iv. In the Add a site box, enter **[*.]labs.vocareum.com** into the Site prompt and check **Including third-party cookies on this site**.



- v. Click **Add** button to add and the prompt box will close.



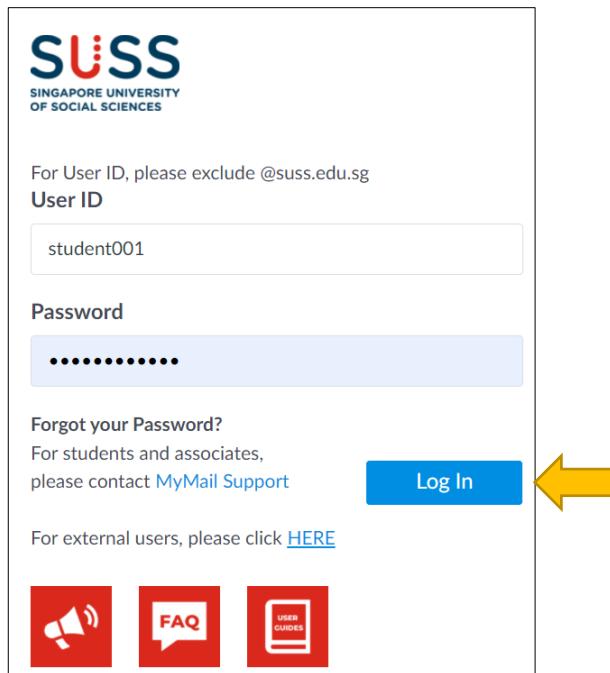
vi. You will notice that your entry is now displayed at this section.



vii. Restart your Chrome browser.

2. LOGIN ACCESS TO VOCAREUM LAB

a. Go to <https://canvas.suss.edu.sg> and log in to your account.



b. Navigate to your course site and select **Vocareum Labs** under the Courses menu.

SUSS
SINGAPORE UNIVERSITY
OF SOCIAL SCIENCES

ICT133_JUL21_S01 > ICT133_JUL21_S01: STRUCTURED...

2021_JUL_T1_PT_6

Account

Dashboard

Courses

Calendar

Inbox

History

Help

SUSS Library

Home

People

Syllabus

Vocareum Labs

Grades

SUSS Gradebook

Virtual Class

Collaborations

Need Help?

Classroom Recordings

SUSS Gradebook

Local GB

- c. For first-time users, you will encounter the Vocareum Terms and Conditions, please scroll down to indicate that you agree with the terms and conditions.

SUSS
SINGAPORE UNIVERSITY
OF SOCIAL SCIENCES

Vocareum_Test_Site > Vocareum_Test_Site

Home

People

Syllabus

Vocareum Lab

Virtual Class

Classroom Recordings

Past Classroom Recordings

Grades

SUSS Gradebook

BigBlueButton

Collaborations

Need Help?

Please read the terms and conditions shown below and click on the "I agree" button at the bottom of this page to continue.

Terms and Conditions

Welcome to the Vocareum, Inc. ("Vocareum") website located at www.vocareum.com (the "Site"). Please read these Terms of Service (the "Terms") and our Privacy Policy (<http://www.vocareum.com/privacy-policy>) carefully because they govern your use of our Site and our web-based education and learning platform. To make these Terms easier to read, the Site and our platform are collectively called the "Services."

Using the functionality of our Services, teachers can create, customize and administer educational courses and invite students to participate in a class taught and supervised by the teacher using the online tools provided by Vocareum. Subject to your compliance with these Terms, Vocareum will make the Services available to you solely for the purpose of your internal, non-commercial use.

1. Agreement to Terms

By using our Services, you agree to be bound by these Terms. If you don't agree to these Terms, do not use the Services. If you are accessing and using the Services on behalf of an educational institution (such as your employer or the educational institution in which you are enrolled) or other legal entity, you represent and warrant that you have the authority to bind that educational institution or other legal entity to these Terms. In that case, "you" and "your" will refer to that educational institution or other legal entity

- d. Subsequently, the platform will automatically show the lab that is relevant to your course. To access the lab environment, please click on My Work button.

The screenshot shows the Vocareum Lab interface. On the left, a sidebar lists navigation options: Home, People, Syllabus, Vocareum Lab (which is selected and highlighted in blue), Virtual Class, Classroom Recordings, Past Classroom Recordings, Grades, BigBlueButton, and Collaborations. The main content area displays an assignment titled "ICT133JUL22-DEMO" under the "ICT133JUL22-DEMO-CS" category. A "Details" section shows "Submission count: None" and "Due date: None". Below this is a large blue button labeled "My Work", which is outlined with a red box. At the bottom of the main area, a message reads "The assignment will be graded after submission".

Please refer to the respective section that is applicable for your course.

- i. [Section 3 – Access to Cloud IDE](#)
- ii. [Section 4 – Access to Jupyter Notebook IDE](#)
- iii. [Section 5 – Access to Virtual Desktop](#)
- iv. [Section 6 – Virtual Desktop Applications](#)

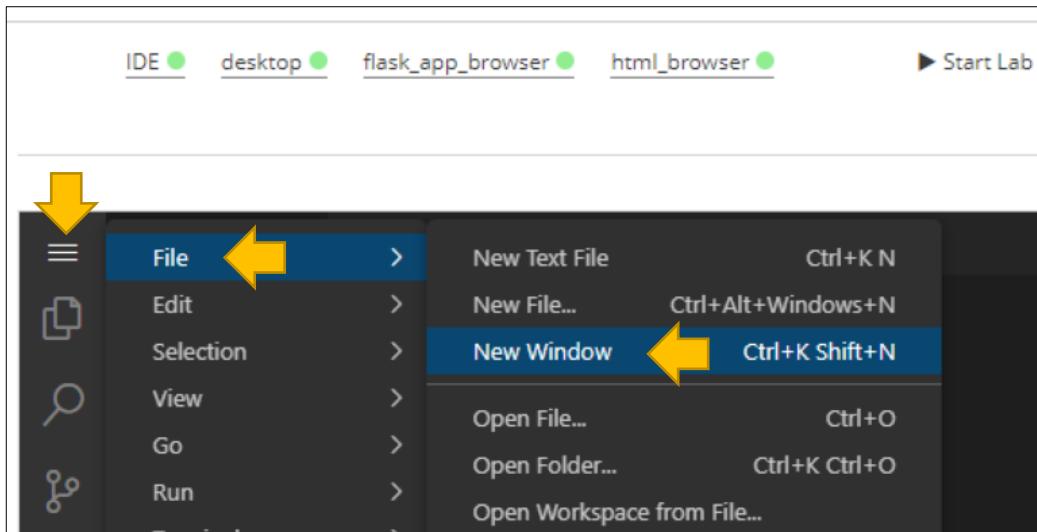
After reading these sections, move on to [Section 7](#).

3. ACCESS TO CLOUD IDE - MICROSOFT EDITION (if applicable to your course)

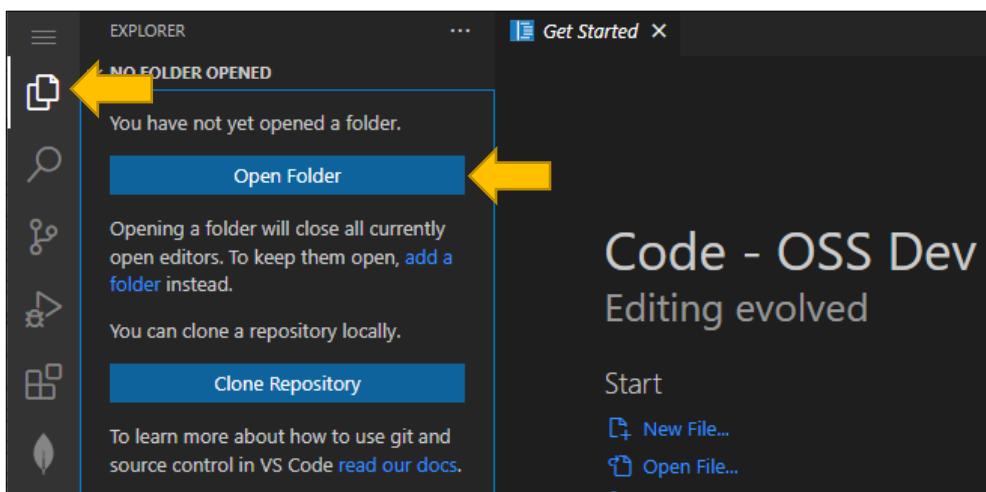
- a. Please wait for the IDE to finish loading. Once it is done, your IDE should look like the sample screenshot below.

The screenshot shows the Microsoft Cloud IDE interface. The left sidebar includes icons for Home, People, Syllabus, and various lab categories like Virtual Class, Classroom Recordings, and Past Classroom Recordings. The main workspace is titled "Code - OSS Dev" with the sub-section "Editing evolved". It features a "Start" menu with options like "New File...", "Open File...", and "Clone Git Repository...". To the right, there's a "Walkthroughs" section with cards for "Learn the Fundamentals", "Boost your Productivity", and "Get started with Python development" (marked as "Updated"). Below these are cards for "Get started with Jupyter Notebooks" and "More...". A "Recent" section shows a file named "labuser /home". At the bottom, there's a "Show welcome page on startup" checkbox and a purple footer bar.

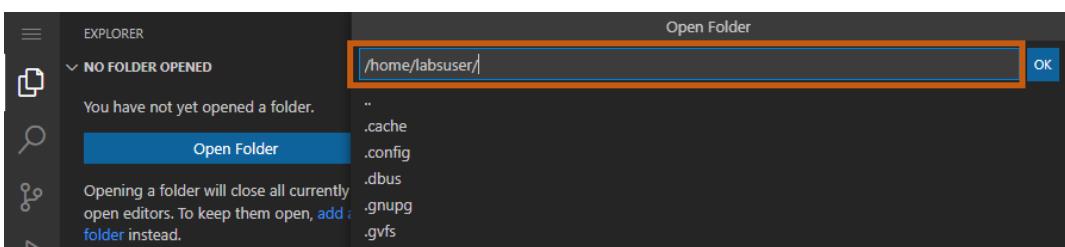
- b. Click on Application Menu first, followed by File and click on New Window. This will open the Cloud IDE in a new browser tab.



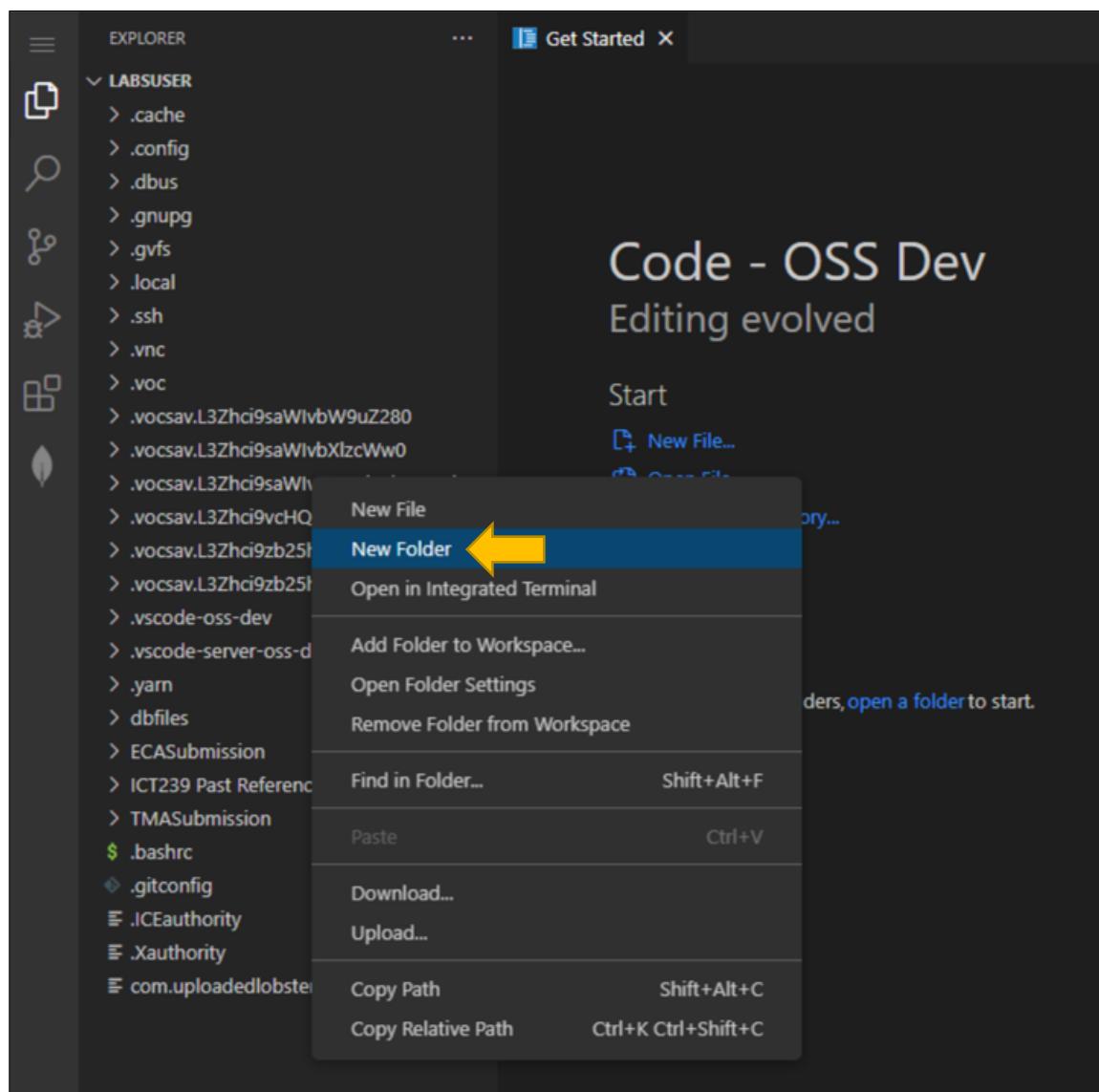
- c. Click on the Explorer icon first then Open Folder button.



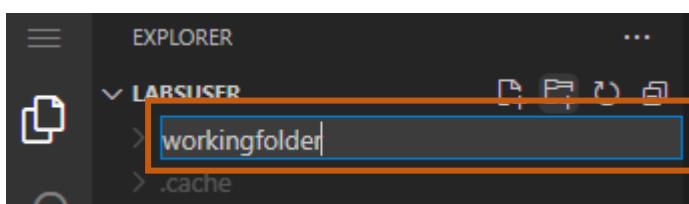
- d. Enter the following directory path (/home/labsuser) into the prompt box and click on the **OK** button. The web browser will load and list the files in the specified directory.



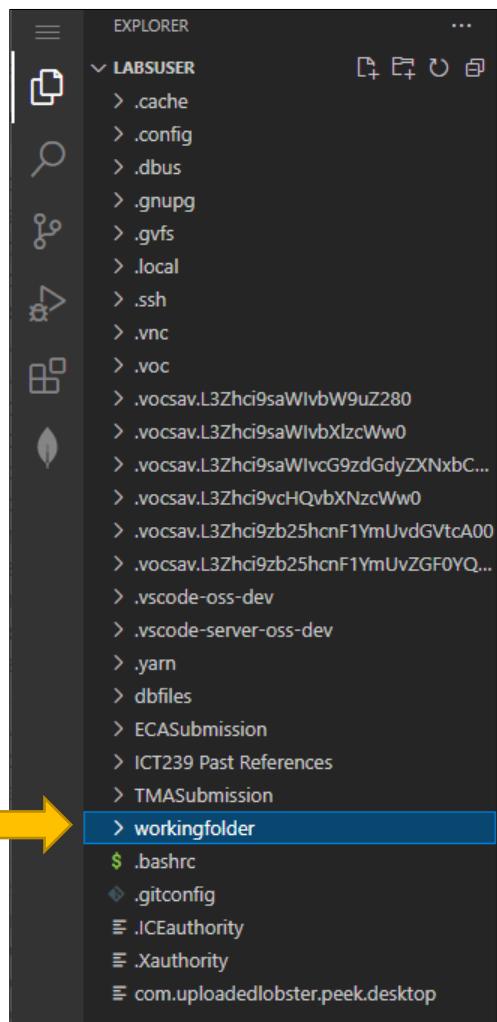
- e. To create a working folder of your own preference, right click at the empty space of the file structure and select **New Folder**.



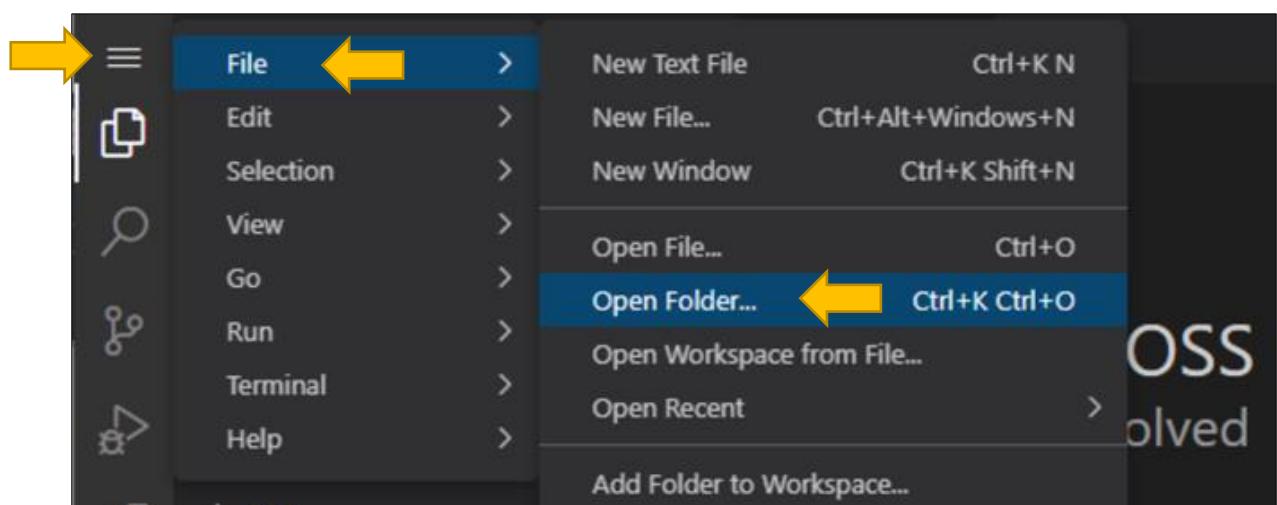
- f. Enter the name of the folder of your own preference in the blue box and press Enter on the keyboard to save the change.



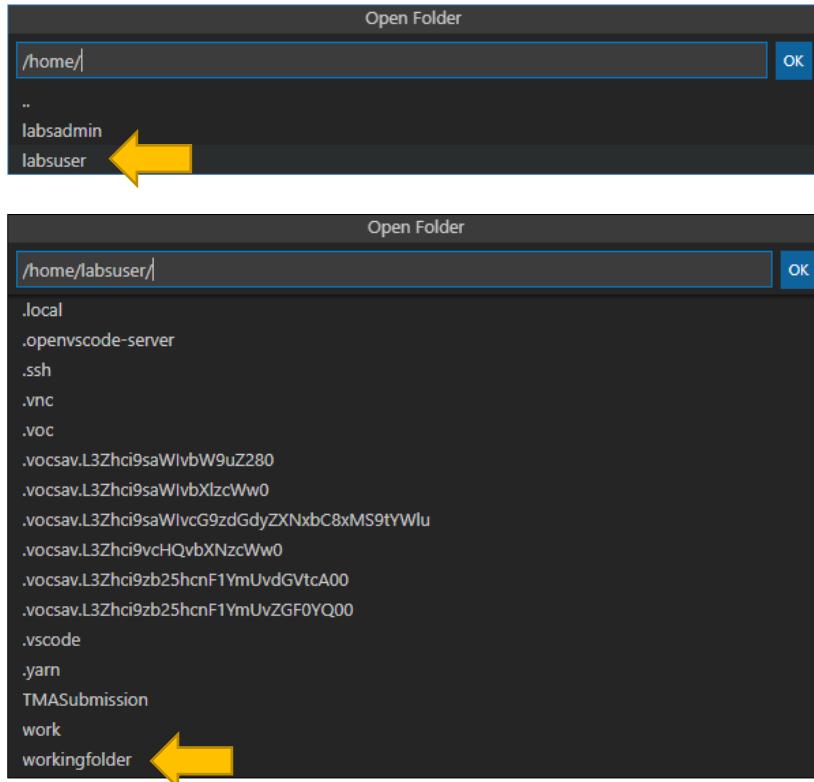
- g. The folder that you have just created will be listed under the LABSUSER file tree.



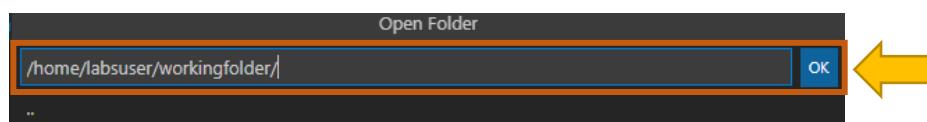
- h. Next, click on the Application Menu first, followed by File and then select **Open Folder...**



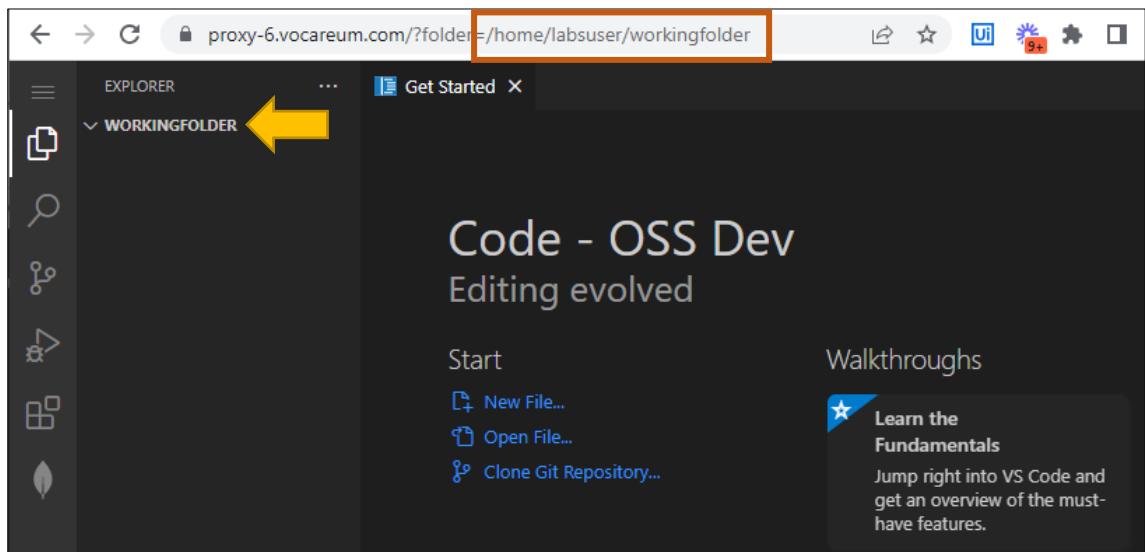
- i. In the Open Folder prompt box, please ensure that you click and follow the folder name correctly. The format is /home/labsuser/<your working folder>.



Once the path is correct, click on OK button to proceed.



- j. The browser tab will load your specified folder for your usage. Do note that the file(s) will be saved under this directory: /home/labsuser/<name_of_working_folder>

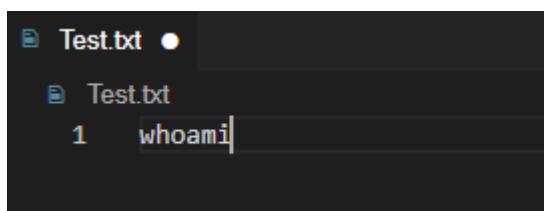


3.1 COPY/PASTE TEXT FROM LOCAL DESKTOP TO IDE

- From your local desktop, highlight and copy the text of your preference.



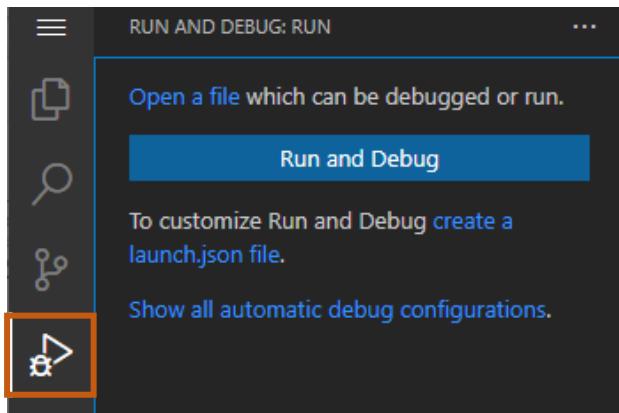
- Point the cursor back to IDE. Hold down the Ctrl key and press V on your keyboard to paste the text to be copied.



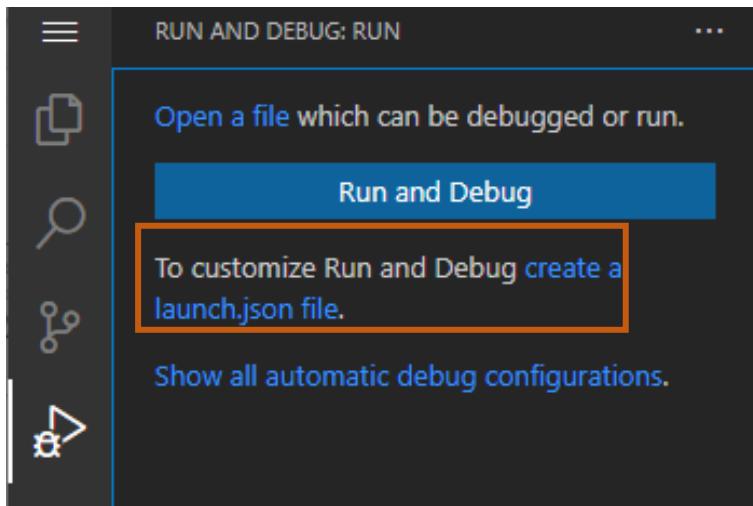
3.2 CREATING LAUNCH.JSON FILE FOR DEBUGGING FLASK APPLICATIONS (if applicable to your course)

Note: This section assumes that you have already opened your folder at the application root level where it contains the app.py file.

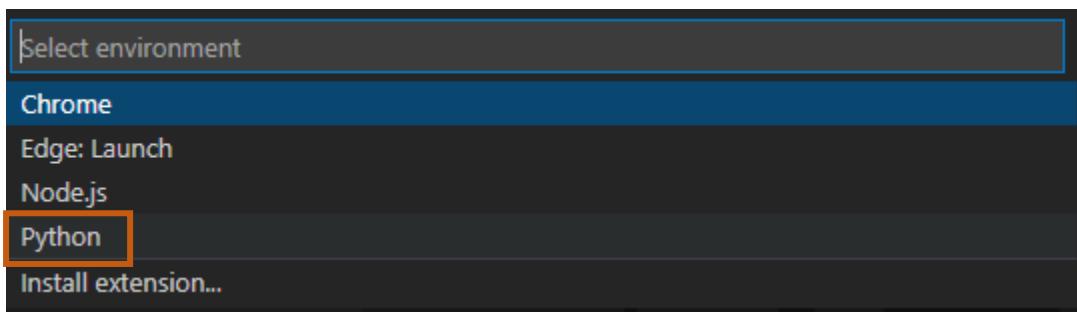
- In the IDE left panel, click on the **Run and Debug** button that is highlighted in orange.



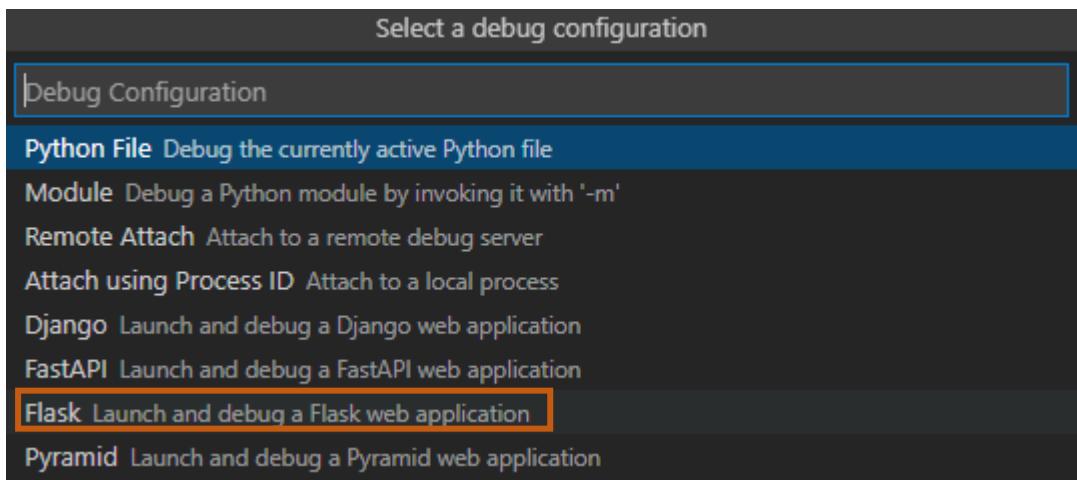
- Under the **RUN AND DEBUG** section, please click on **create a launch.json file** link. If there is an existing Python: Flask configuration, please skip step c-g.



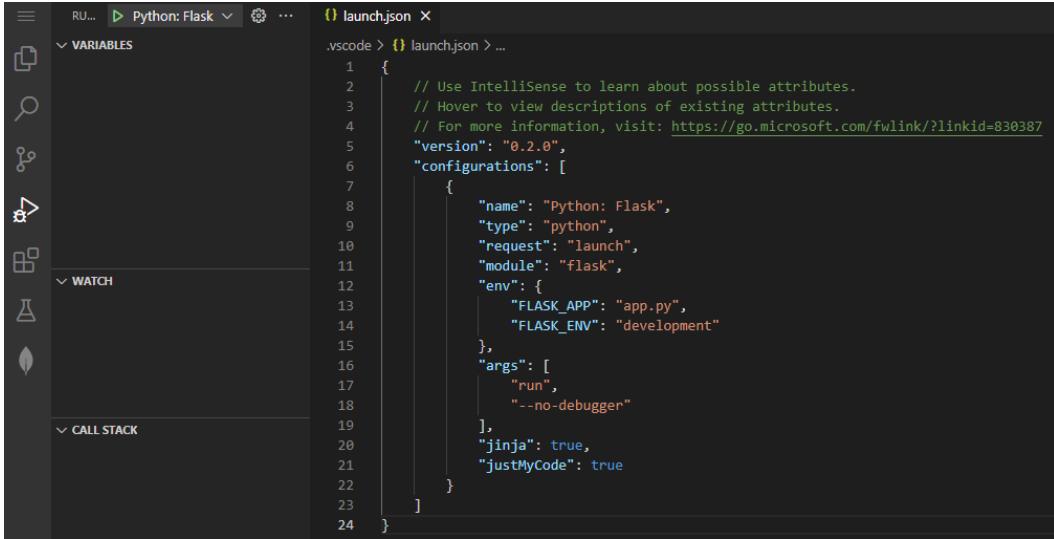
- c. The IDE will prompt for the environment. Please select **Python**.



- d. Under the debug configuration prompt, click Flask.



- e. The IDE will automatically open the launch.json configuration and the necessary contents will be populated.

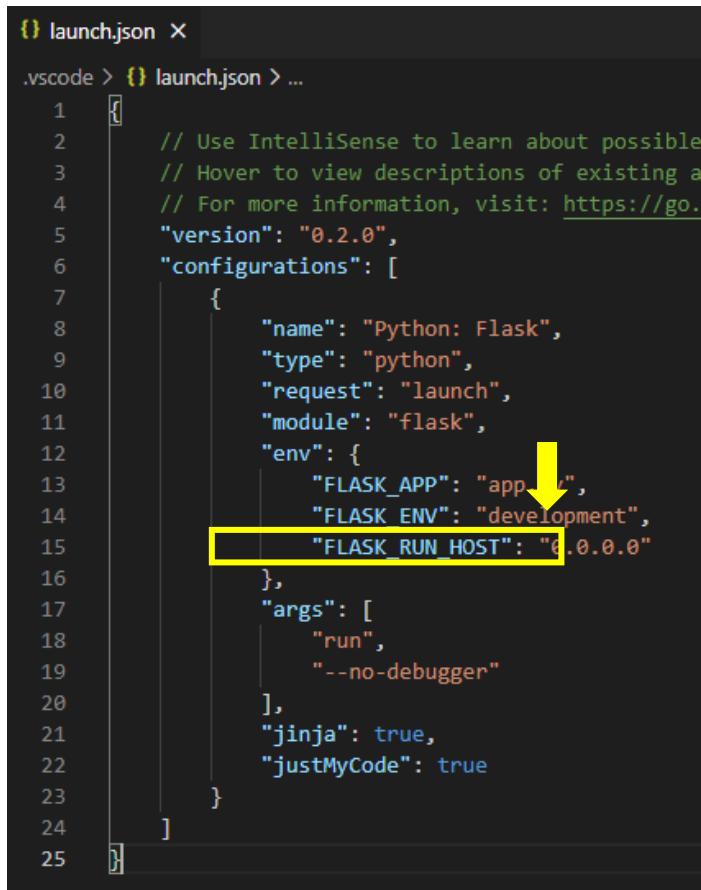


```

{
    "version": "0.2.0",
    "configurations": [
        {
            "name": "Python: Flask",
            "type": "python",
            "request": "launch",
            "module": "flask",
            "env": {
                "FLASK_APP": "app.py",
                "FLASK_ENV": "development"
            },
            "args": [
                "run",
                "--no-debugger"
            ],
            "jinja": true,
            "justMyCode": true
        }
    ]
}

```

- f. Please add the following changes under the env section in the launch.json file.
 - i. Please add a comma at the end of the last entry behind the word development
 - ii. Please add a new line “FLASK_RUN_HOST”: “0.0.0.0”

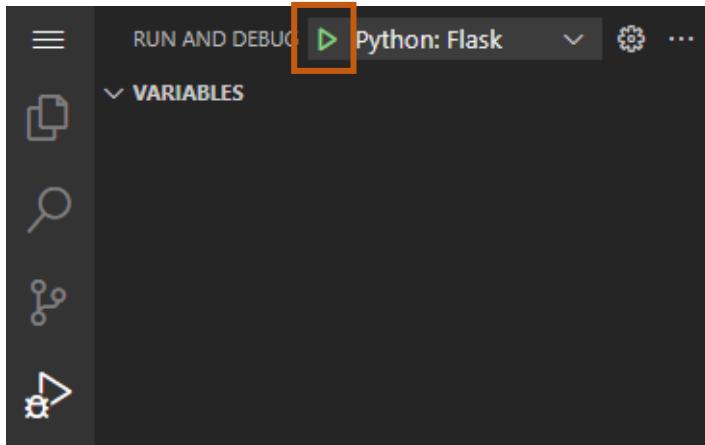


```

{
    "version": "0.2.0",
    "configurations": [
        {
            "name": "Python: Flask",
            "type": "python",
            "request": "launch",
            "module": "flask",
            "env": {
                "FLASK_APP": "app.py",
                "FLASK_ENV": "development",
                "FLASK_RUN_HOST": "0.0.0.0"
            },
            "args": [
                "run",
                "--no-debugger"
            ],
            "jinja": true,
            "justMyCode": true
        }
    ]
}

```

- g. Please save the launch.json file after making the changes.
- h. You may now run your flask application in debugging mode by clicking on the green play button.



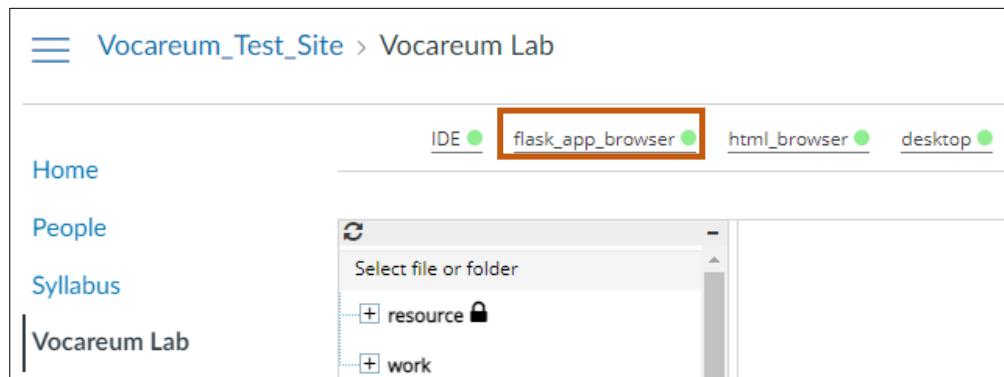
3.3 LAUNCHING FLASK APP BROWSER (if applicable to your course)

- Please run your flask application in IDE first. A sample image shown below.

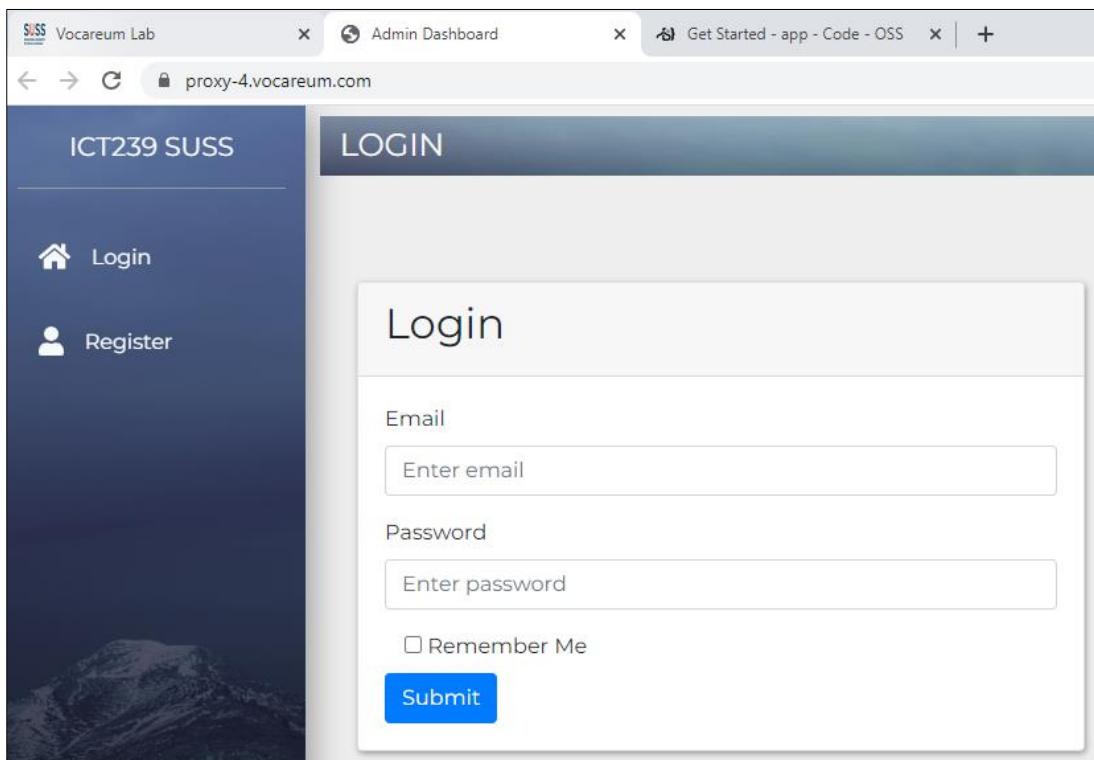
```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
labsuser@desktop:~/ICT239 Past References/bmi/app$ flask run --host=0.0.0.0
 * Serving Flask app "app.app"
 * Running on http://0.0.0.0:5000/ (Press CTRL+C to quit)
```

A screenshot of a terminal window. The tab bar at the top shows 'TERMINAL' is selected. The window displays the command 'flask run --host=0.0.0.0' being run in a terminal session, with the output showing the Flask app is running on port 5000.

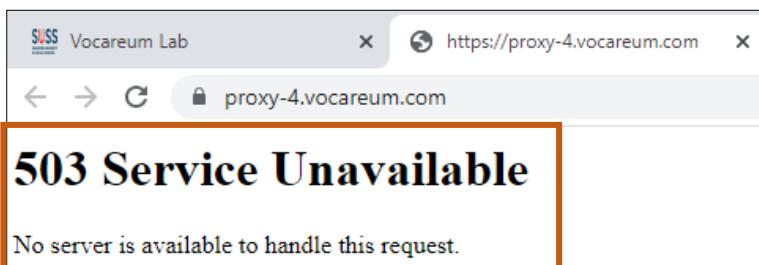
- On your workspace, you will see that there are several links displayed. Please click on the flask_app_browser link.



- A new browser tab will be opened with your flask application. You can then start to interact with your application.

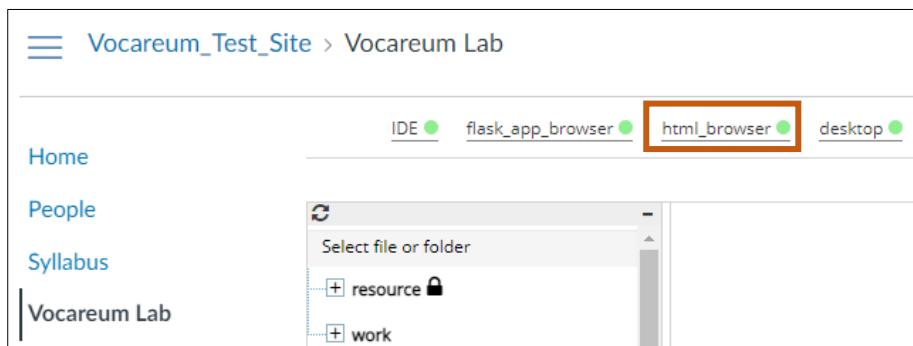


- d. Please note that when you will encounter a “**503 Service Unavailable**” error when you click on the flask_app_browser link without running your flask application.

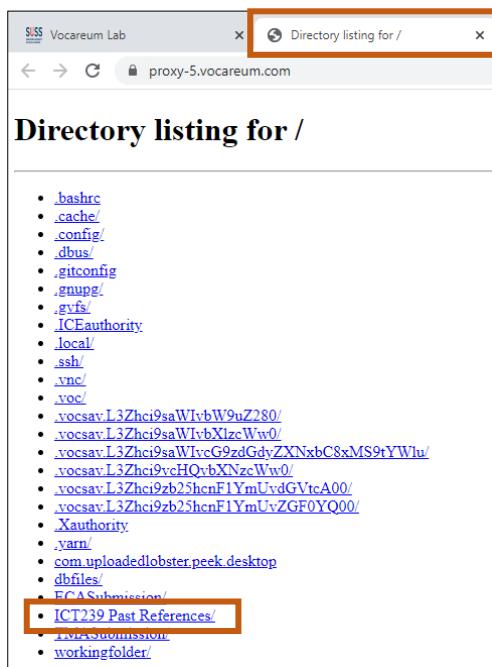


3.4 LAUNCHING HTML BROWSER (if applicable to your course)

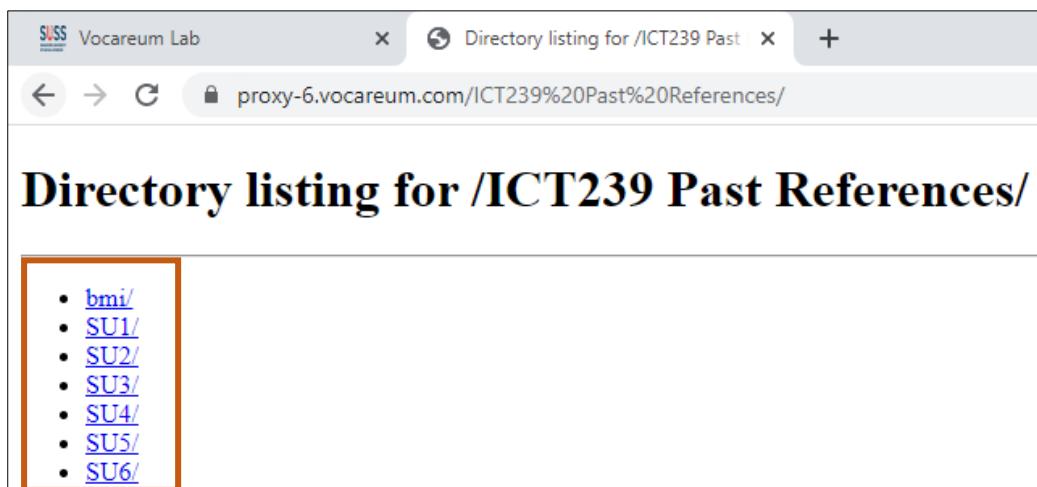
- a. Please note that this HTML browser is provided to view the sample codes in the past references folder.
- b. On your workspace, please click on the html_browser link.



- c. A new browser tab will be opened in another window. Please click on the **ICT239 Past References** link as this is the folder that contains all the reference codes.



- d. To view the sample codes, simply navigate to the folder that you wish to view the codes.



The screenshot shows a web browser window with two tabs: "Vocareum Lab" and "Directory listing for /ICT239 Past References/SU2/Code/". The second tab is active, displaying a list of files under the URL "proxy-6.vocareum.com/ICT239%20Past%20References/SU2/Code/". The list includes:

- [frog/](#)
- [image-linux.png](#)
- [SampleAudio_0.4mb.mp3](#)
- [SampleVideo_360x240_1mb.mp4](#)
- [style.css](#)
- [SU2-C2-T2-1A A HTML Element.html](#)
- [SU2-C2-T2-1B Nesting elements.html](#)
- [SU2-C2-T2-1C Empty elements.html](#)
- [SU2-C2-T2-1D Element attributes.html](#)
- [SU2-C2-T2-1E Boolean attributes.html](#)
- [SU2-C2-T2-2A A HTML Document.html](#)
- [SU2-C2-T2-2B Special Characters.html](#)
- [SU2-C2-T2-2C HTML comments.html](#)
- [SU2-C2-T2-3A Head Metadata.html](#)
- [SU2-C2-T2-3C link CSS and JS example.html](#)
- [SU2-C2-T2-4A Text Para and Headings.html](#)
- [SU2-C2-T2-4B Text List.html](#)
- [SU2-C2-T2-4C other Semantic tags.html](#)
- [SU2-C2-T2-4C Quotation.html](#)

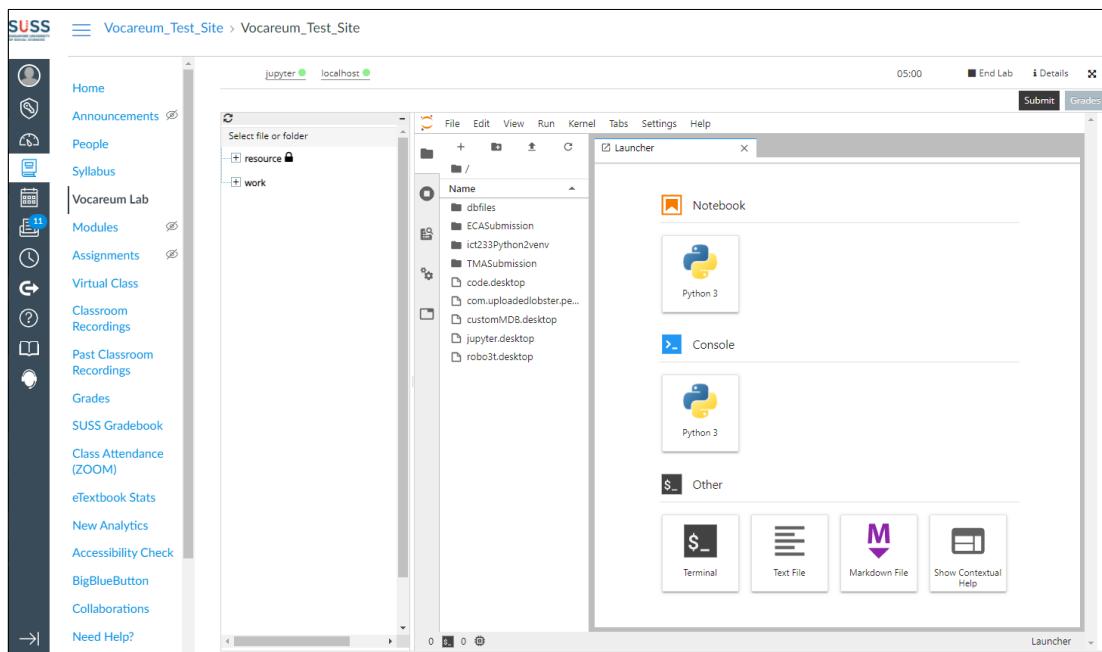
- e. Please take note that if you have made any changes to the html files, please refresh your web browser to view the latest changes.

4. ACCESS TO JUPYTERLAB IDE (if applicable to your course)

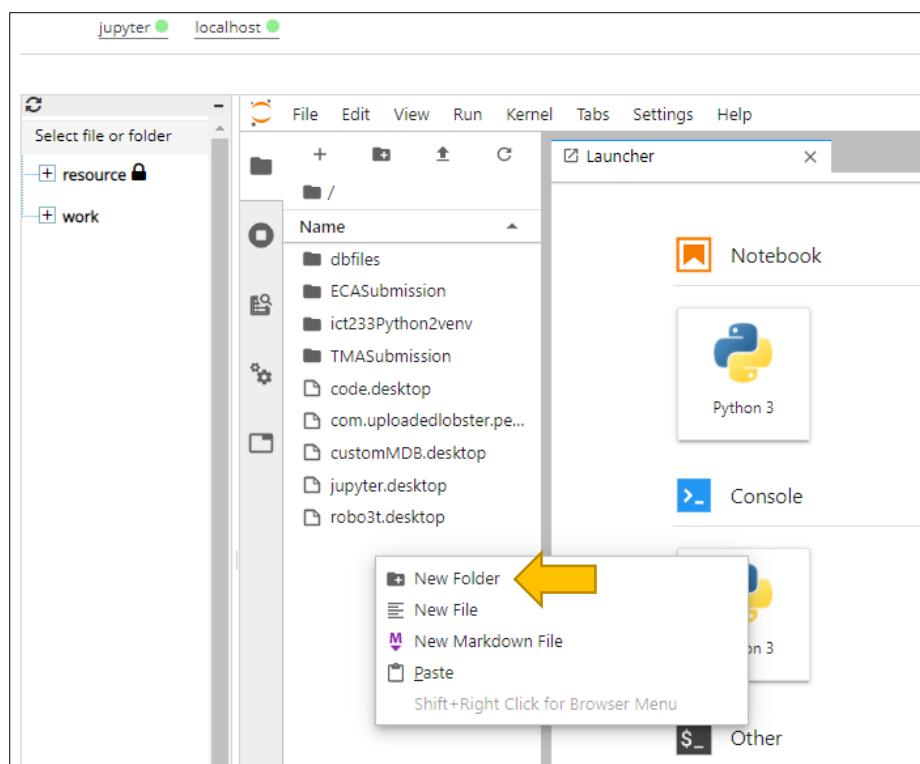
- a. Please click on the My Work button to access the JUPYTERLAB IDE.

The screenshot shows the Vocareum interface for the assignment "ICT233_JAN22_T03". The left sidebar shows navigation links: Home, Announcements, People, Syllabus, Modules, Vocareum Labs (which is selected), Assignments, Grades, Virtual Class, Classroom Recordings. The main content area shows the assignment title "ICT233_JAN22_L01: DATA PROGRAMMING" and a "My Grade" button. On the right, there is a "Details" section with fields for Submission count (None) and Due date (Mar 14 2022 23:55:59 +08). Below the Details section is a blue "My Work" button, which is highlighted with a red box. At the bottom of the assignment card, it says "The assignment will be graded after submission".

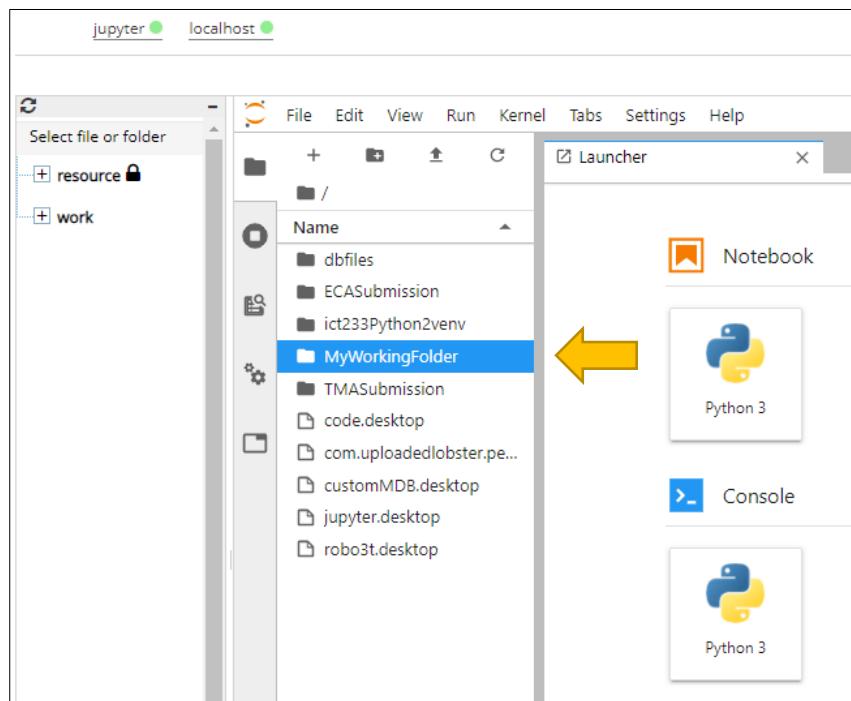
- b. Please wait for the IDE to finish loading. Once it is done, your IDE should look like the sample screenshot below.



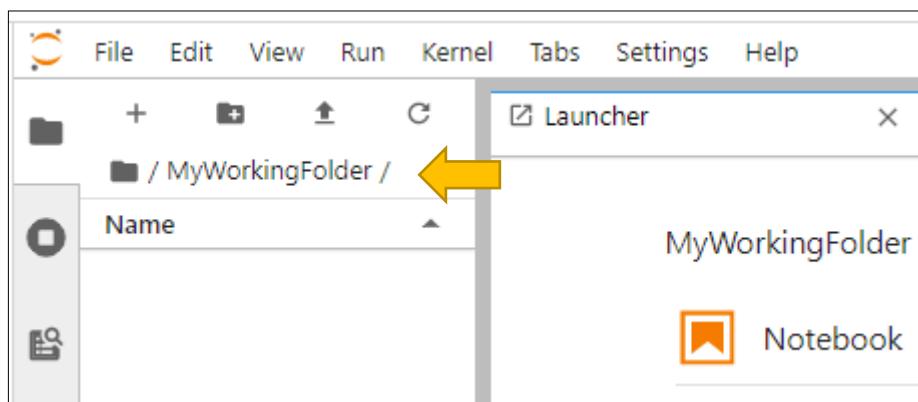
- c. To create a working folder, right click on the file structure and select **New Folder**. Then name the **New Folder** of your preference.



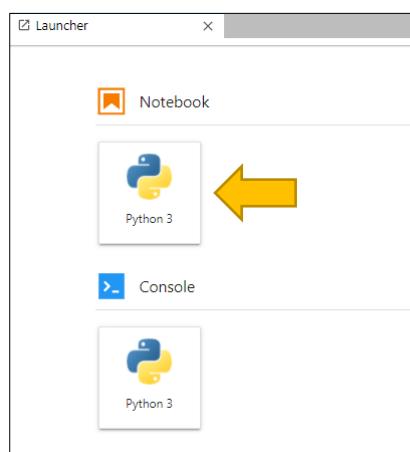
- d. To create a new notebook under the new folder, double click on that folder.



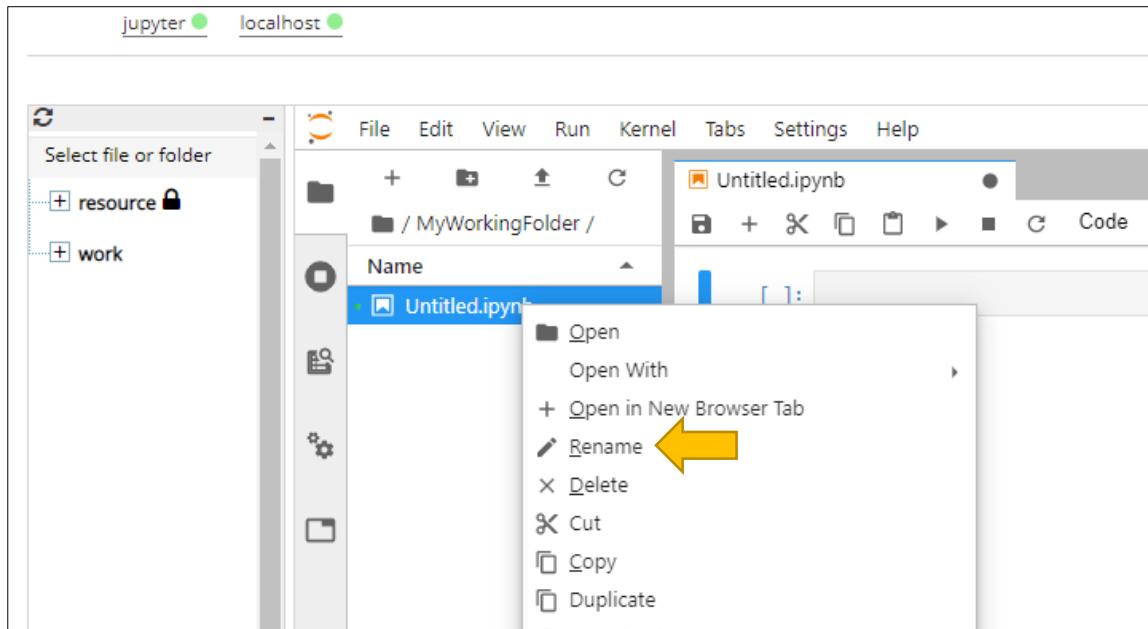
- e. After clicking, do note that the directory has changed to the new folder.



- f. Click on the Python 3 button under Notebook.

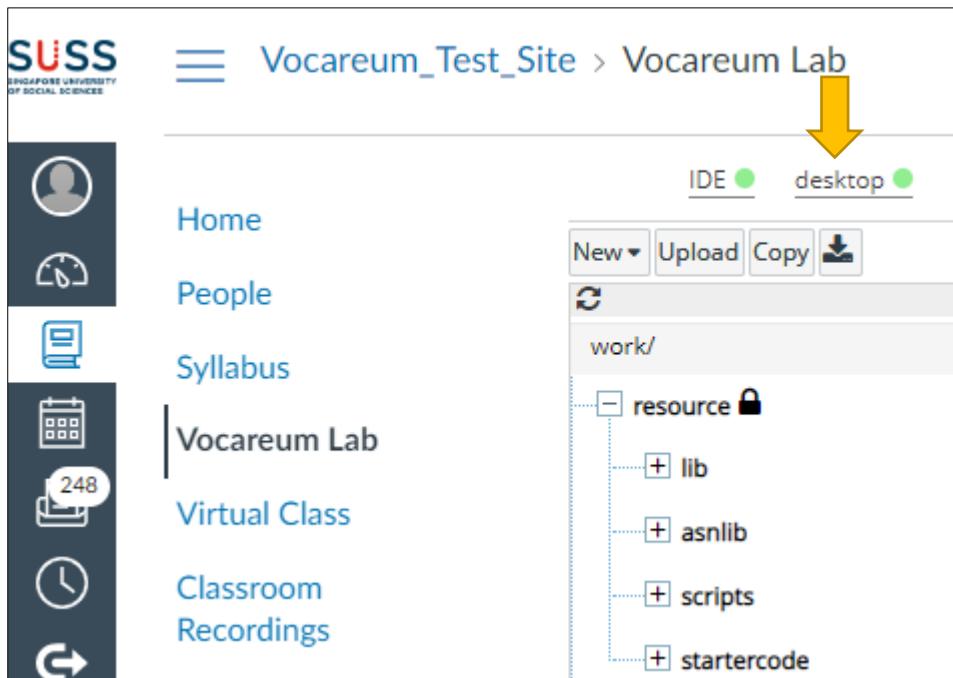


- g. You may rename the new ipynb file by right click and **Rename** it. (You may start to use).

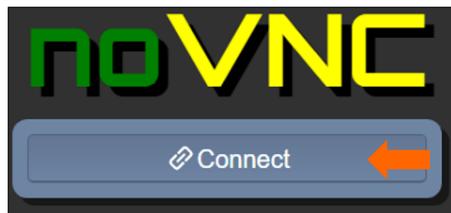


5. ACCESS TO VIRTUAL DESKTOP

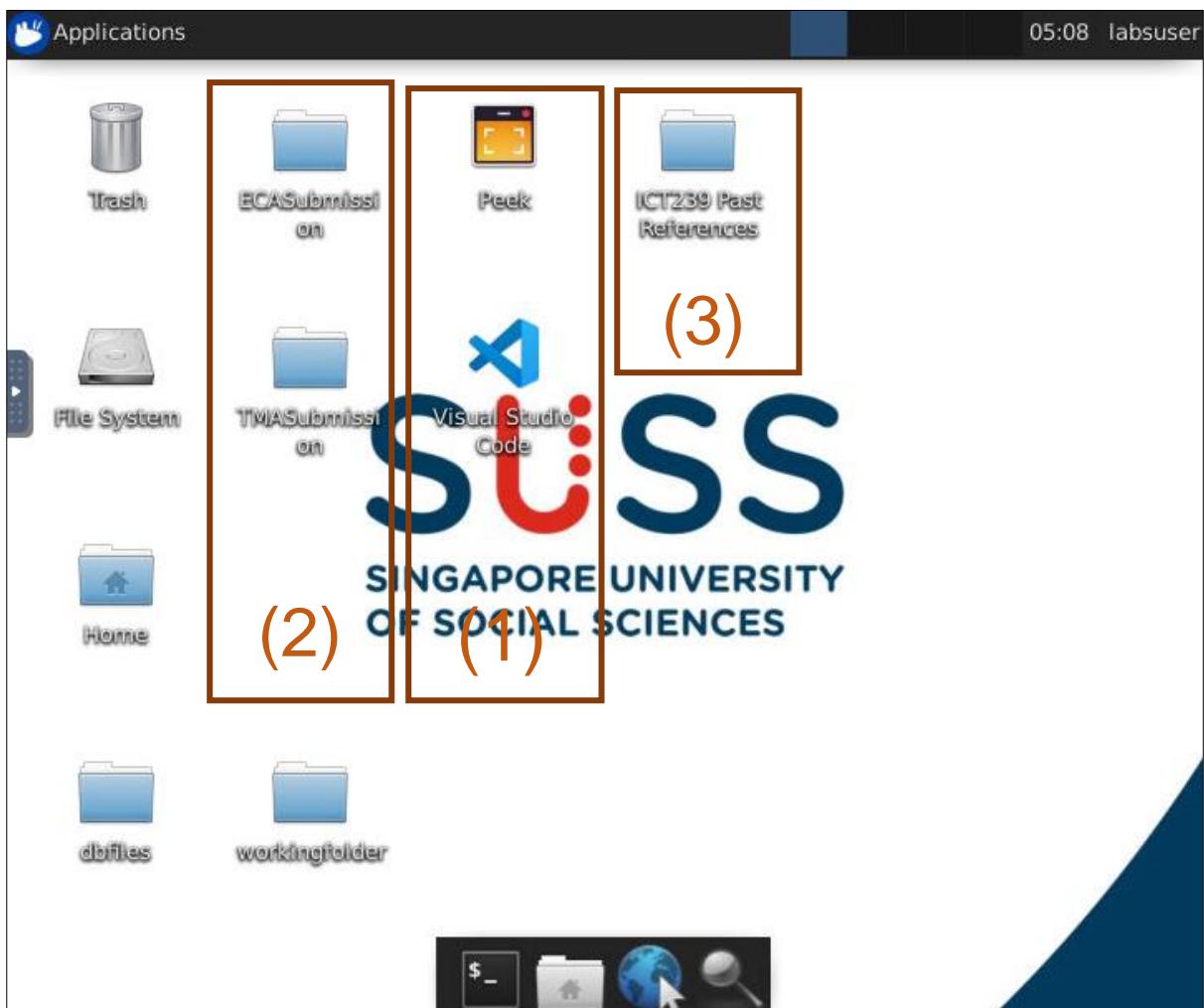
- a. Click on **desktop** link in the Workspace as pointed to by arrow below. This action will launch the Virtual Desktop. If you do not see the Virtual Desktop launched due to being blocked by pop-up blocker, please allow the pop-up blocker to open a new window/tab from Vocareum.



- b. You will see a separate browser tab with a noVNC logo. Next, click on **Connect** button to connect to Virtual Desktop.



- c. Once upon accessing Virtual Desktop for the first time, system will generate the following shortcuts on your desktop automatically. (**No action is required from student for creating these shortcuts**)
1. Pre-installed applications and libraries for your course.¹
 2. Specific folders where you begin working your solution for graded assignments.
 3. Folder containing references from past references. (If applicable for your course)



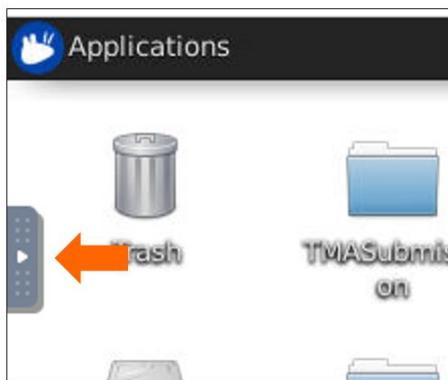
The icons may appear over a short period, once an icon appears, it is ready for the users to use that software.

¹ Refer to [Annexe](#) for the list of applications and libraries.

5.1 CONFIGURATION OF VIRTUAL DESKTOP SCREEN

You can adjust the screen to a higher resolution by the following steps:

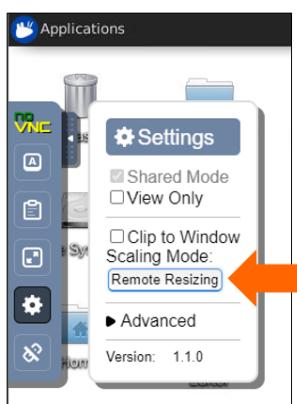
- Click the bar with an arrow to toggle the noVNC control panel.



- Click the Settings icon on the noVNC control panel.



- Select Remote Resizing under Scaling Mode option. This option will allow the desktop to fit into any custom sizing of the web browser.



- Once this setting is done, you can drag and pull the browser frame.



- e. You can also enter the full screen mode by clicking on the Fullscreen icon.

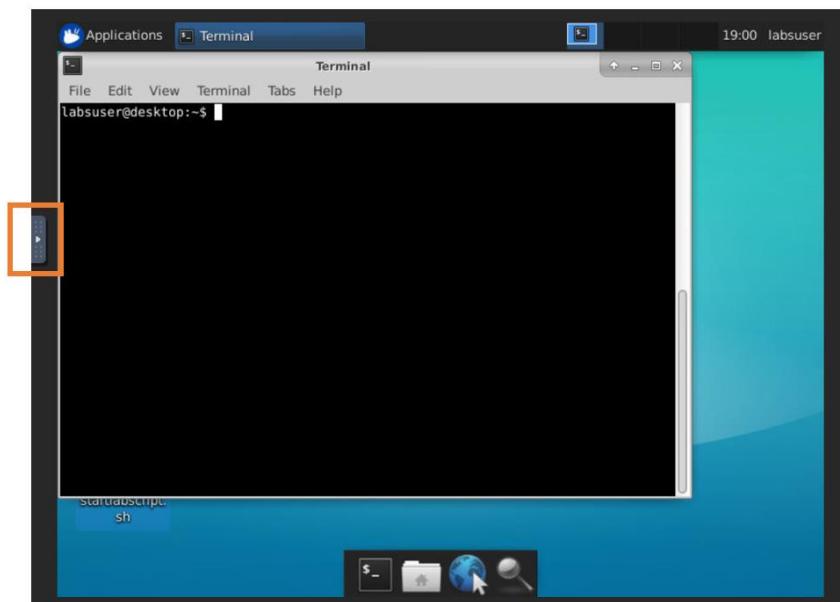


5.2 COPY/PASTE TEXT FROM LOCAL DESKTOP TO VIRTUAL DESKTOP

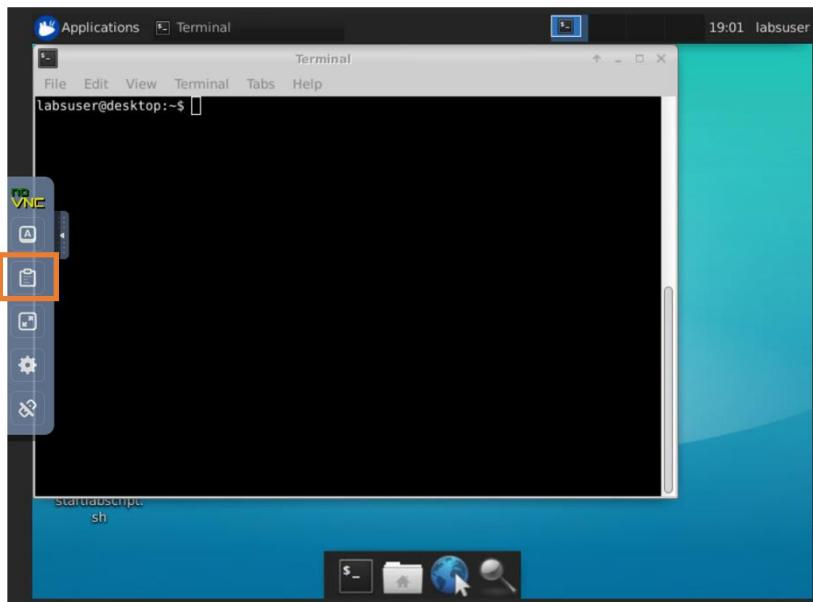
- a. From your local desktop, highlight and copy the text of your preference.



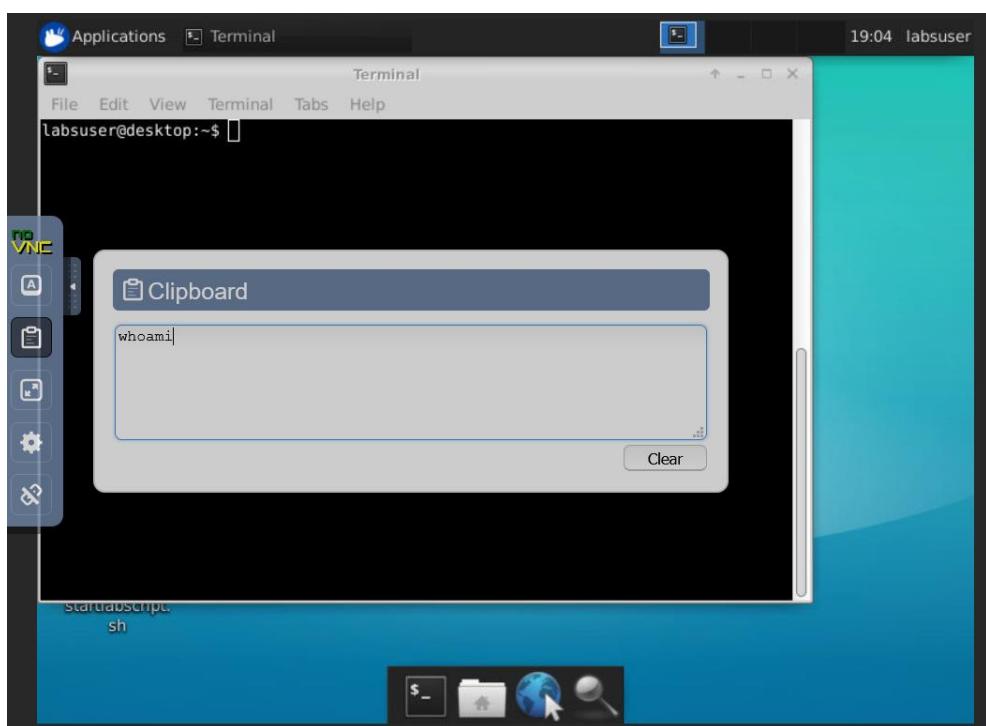
- b. Navigate to your virtual desktop and click the bar with an arrow to toggle the noVNC control panel.



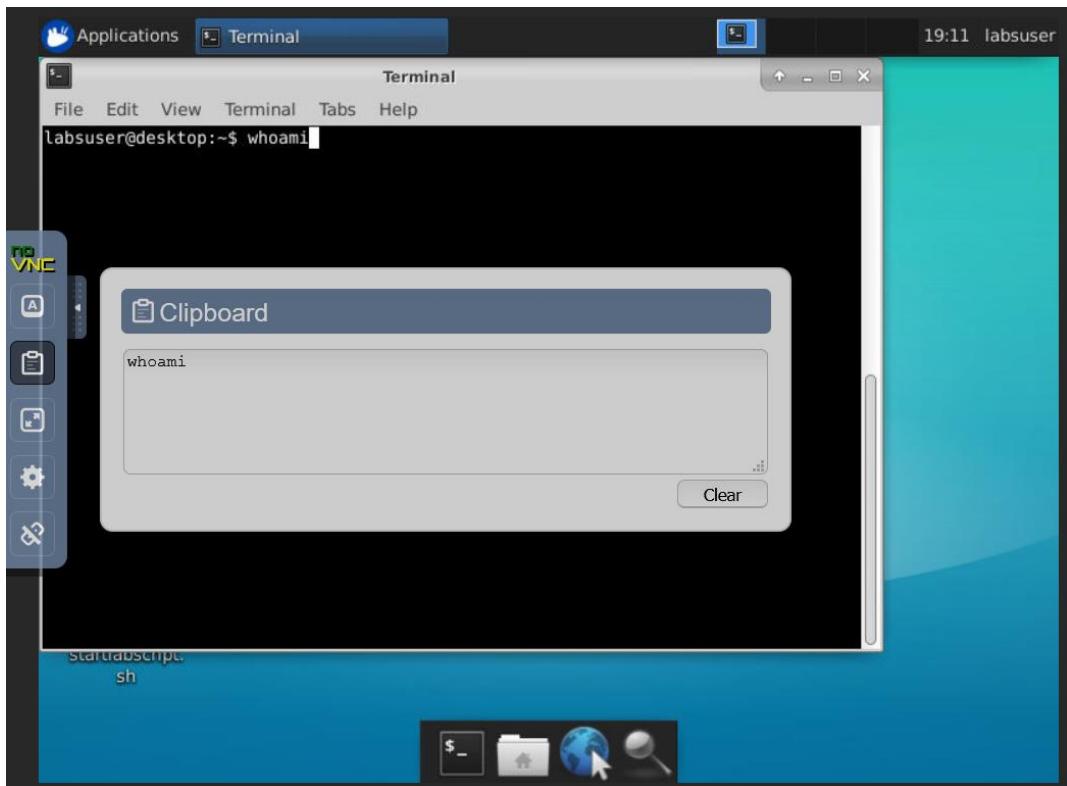
- c. Click the **Clipboard** icon on the noVNC control panel.



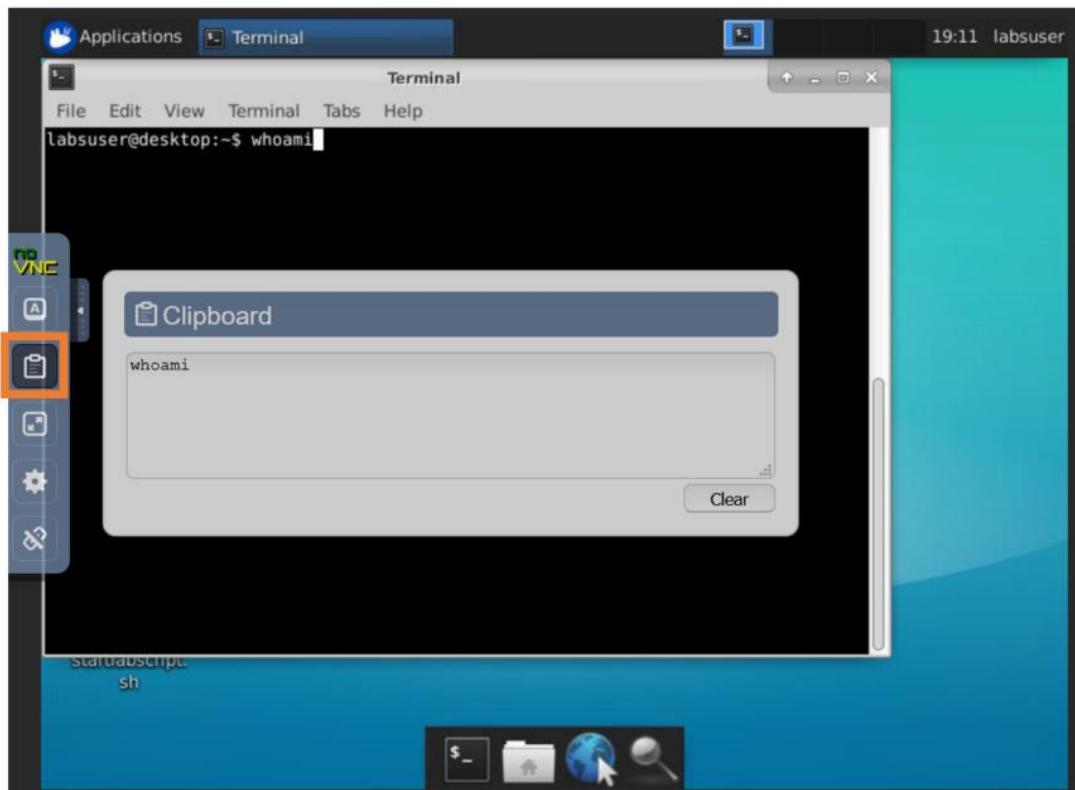
- d. Paste the text to be copied on the Clipboard.



- e. Hold Ctrl and then press V on your keyboard to paste the text to be copied. You can also do a right click on your mouse and paste that text.



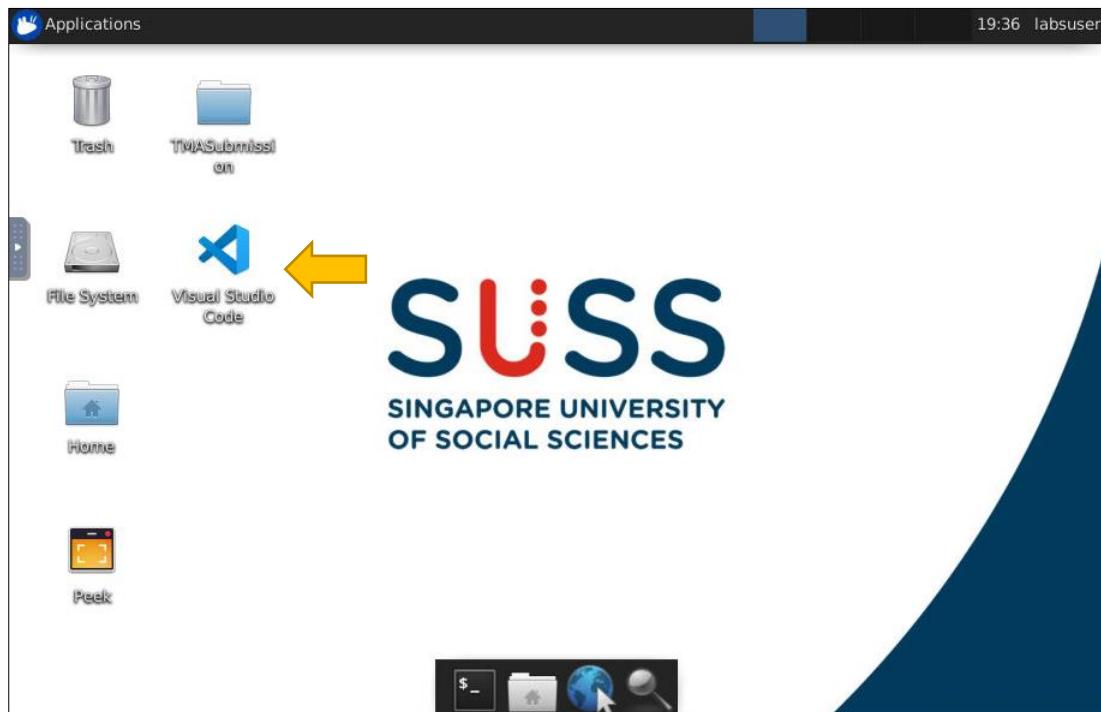
- f. Click the **Clipboard** icon on the noVNC control panel to close the Clipboard.



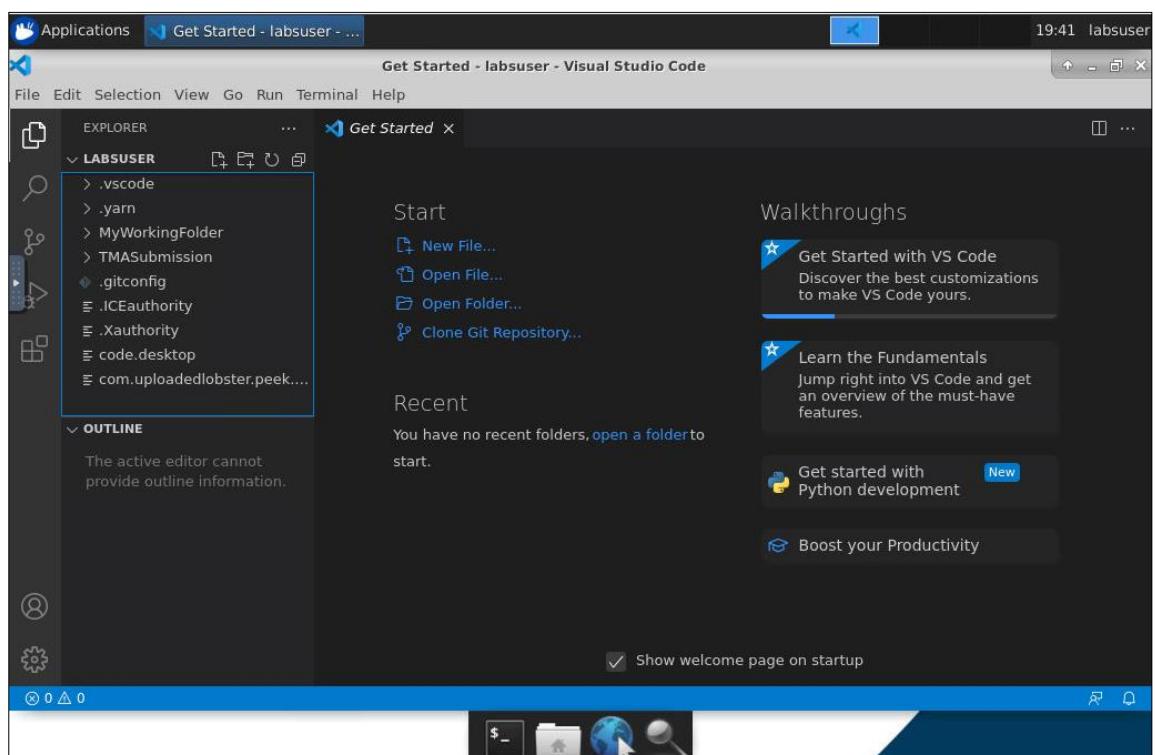
6. VIRTUAL DESKTOP APPLICATIONS

6.1 VISUAL STUDIO CODE (if applicable to your course)

- Click on Visual Studio Code shortcut located on the desktop.



- The application displayed will be the same as screenshot below.



6.2 JUPYTER NOTEBOOK FOR PYTHON 2 (if applicable to your course)

- Click on **Python 2 Jupyter Notebook** shortcut located on the desktop.

Note 1: To run application that uses Python 2 virtual environment, please select and click the **Python 2 Jupyter Notebook** shortcut instead. An example of application that uses Python 2 virtual environment is d3py library.

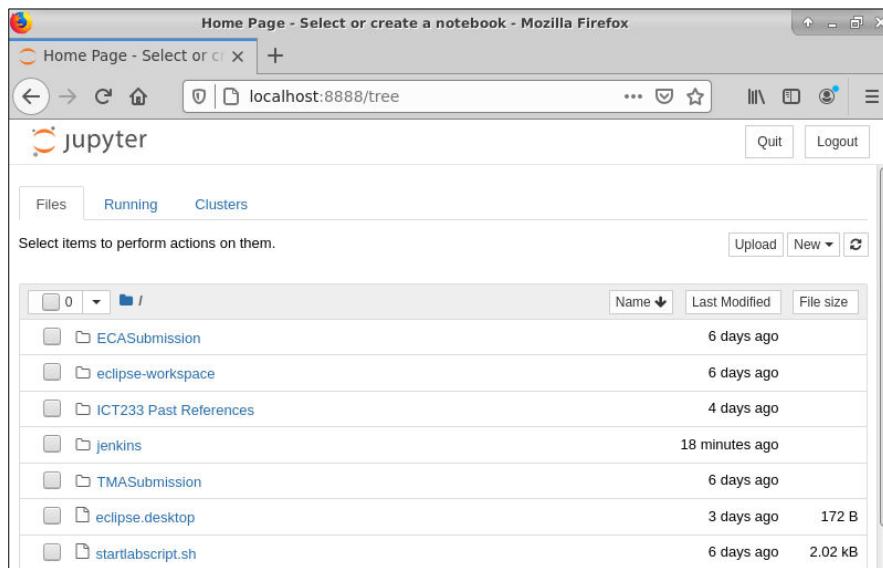


```
Terminal
File Edit View Terminal Tabs Help
labsuser@student-desktop:~$ jupyter notebook
[I 10:25:00.465 NotebookApp] Serving notebooks from local directory: /home/labsuser
[I 10:25:00.465 NotebookApp] Jupyter Notebook 6.1.4 is running at:
[I 10:25:00.466 NotebookApp] http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[I 10:25:00.466 NotebookApp] or http://127.0.0.1:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[I 10:25:00.466 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 10:25:00.504 NotebookApp]

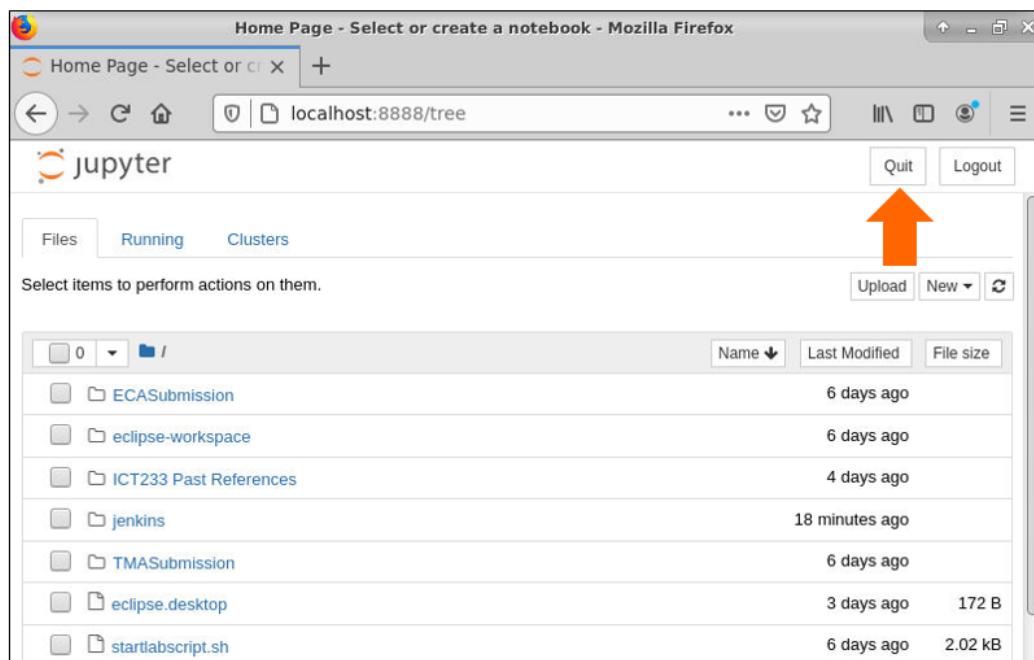
      To access the notebook, open this file in a browser:
      file:///home/labsuser/.local/share/jupyter/runtime/nbsrvr-1416-open.html
      Or copy and paste one of these URLs:
      http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
      or http://127.0.0.1:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
```

Warning: Do NOT close this Terminal screen as it is required to run Jupyter Notebook. Please keep it minimised.

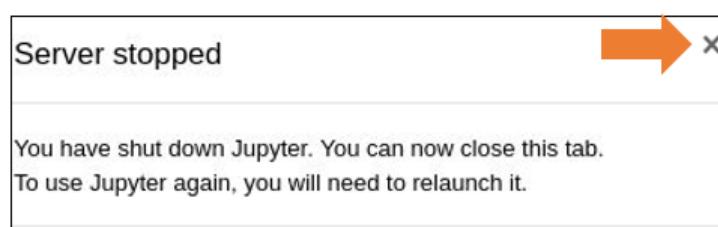
- b. The application displayed will be the same as screenshot below.



- c. To exit from this application after you have finished using it, click on **Quit** button.²

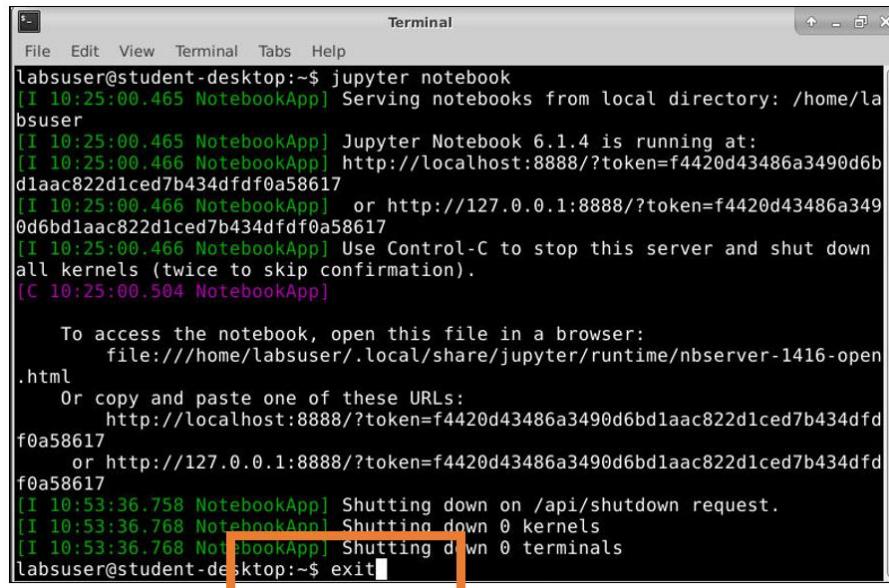


- d. A shut down message will be prompted. Then, click the **cross** to end this message.



² Do remember to save your work first before exit.

- e. Switch to Terminal Emulator and enter **exit** into the command line to close the Terminal.



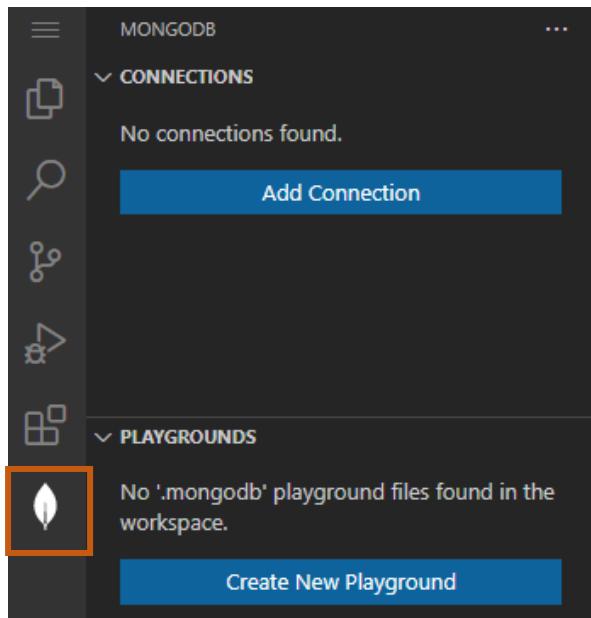
The screenshot shows a terminal window titled "Terminal". The window contains the following text:

```
File Edit View Terminal Tabs Help
labsuser@student-desktop:~$ jupyter notebook
[I 10:25:00.465 NotebookApp] Serving notebooks from local directory: /home/labsuser
[I 10:25:00.465 NotebookApp] Jupyter Notebook 6.1.4 is running at:
[I 10:25:00.466 NotebookApp] http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[I 10:25:00.466 NotebookApp] or http://127.0.0.1:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[I 10:25:00.466 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 10:25:00.504 NotebookApp]

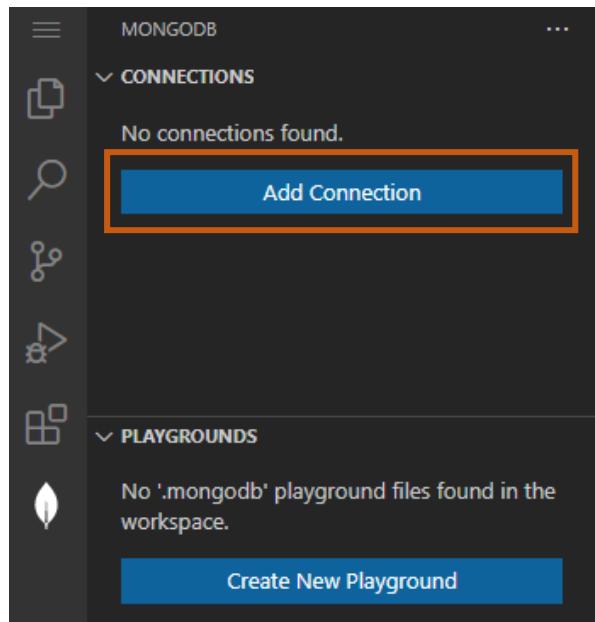
    To access the notebook, open this file in a browser:
        file:///home/labsuser/.local/share/jupyter/runtime/nbserver-1416-open.html
    Or copy and paste one of these URLs:
        http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
        or http://127.0.0.1:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[I 10:53:36.758 NotebookApp] Shutting down on /api/shutdown request.
[I 10:53:36.768 NotebookApp] Shutting down 0 kernels
[I 10:53:36.768 NotebookApp] Shutting down 0 terminals
labsuser@student-desktop:~$ exit
```

6.3 CREATING MONGODB CONNECTION (if applicable to your course)

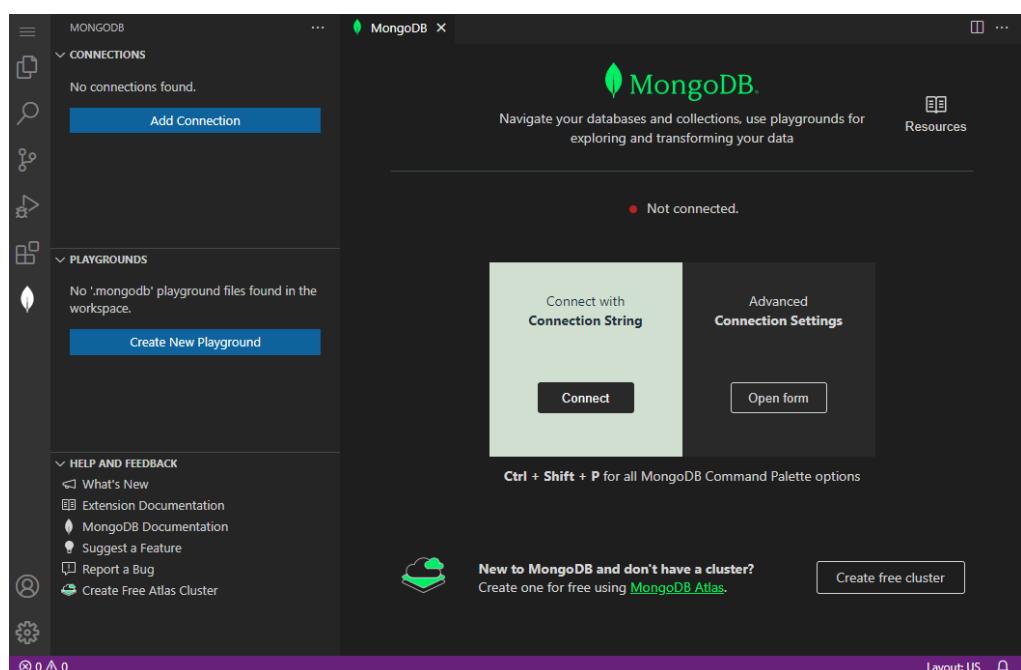
- a. In IDE, click on the MongoDB icon on the left menu.



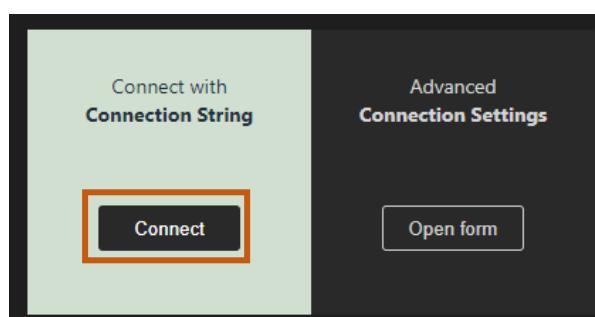
- b. Click on the Add Connection button.



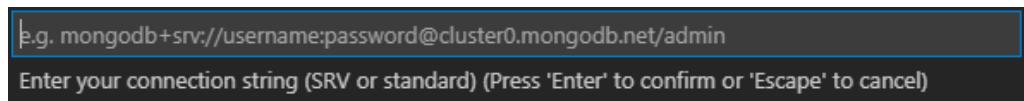
- c. The MongoDB page will be shown.



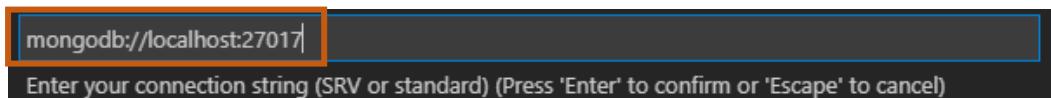
- d. Click on the **Connect** button.



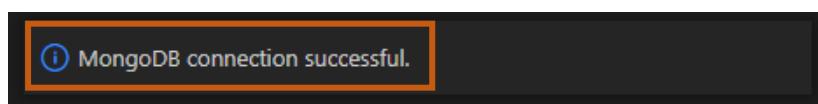
- e. A prompt box will appear to ask for the database connection string.



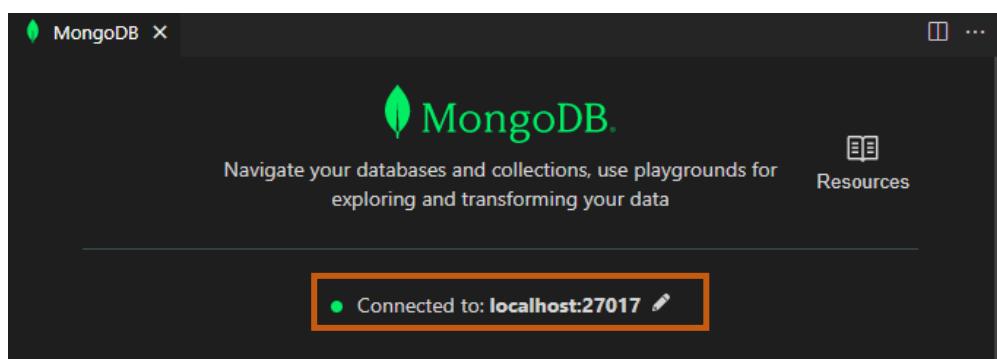
- f. Enter **mongodb://localhost:27017** into the prompt box and press **Enter** to continue.



- g. Once it is successfully connected, you will be able to view this notification message at the bottom right corner of the screen.



- h. On the mongoDB page, it will show that it is successfully connected to the database as well.

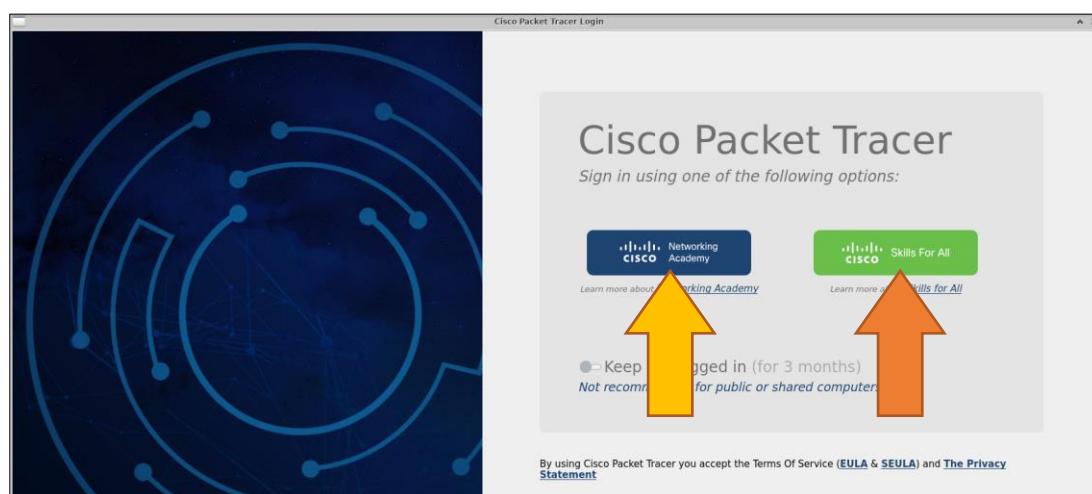


6.4 CISCO PACKET TRACER (if applicable to your course)

- Click on **Cisco Packet Tracer** shortcut located on the desktop.

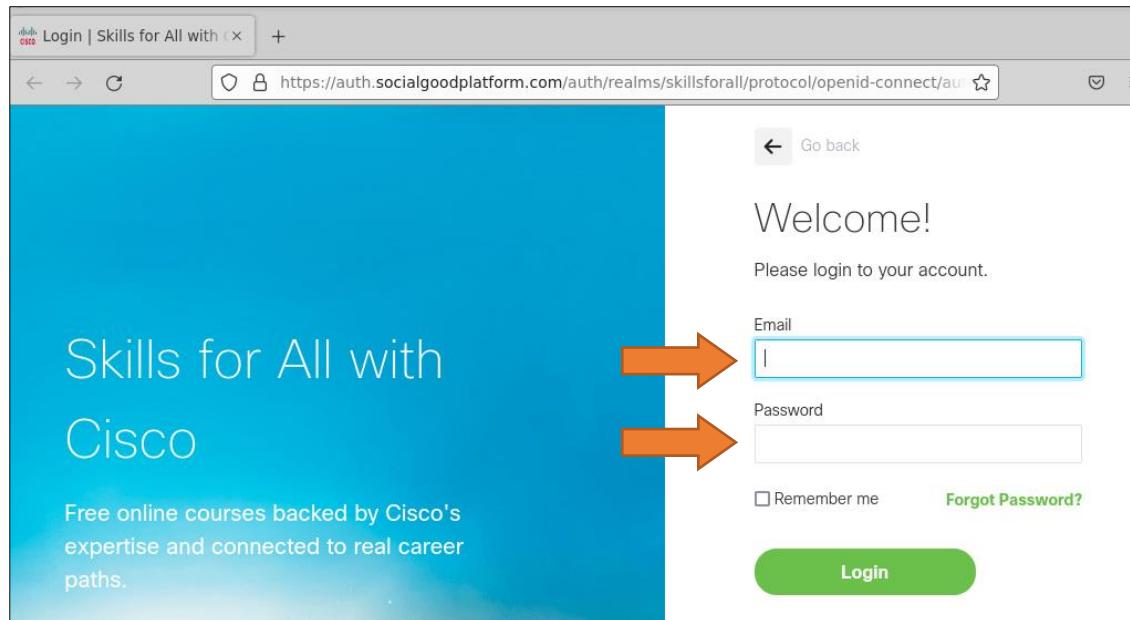


- If you have not registered an account with Cisco Skills For All, please refer to [Appendix A-5](#) for instructions. Otherwise, you may proceed to login with your credentials by clicking the **Skills For All** button on the right.
 - For those who choose to register with Networking Academy³, please click the **Networking Academy** button on the left.

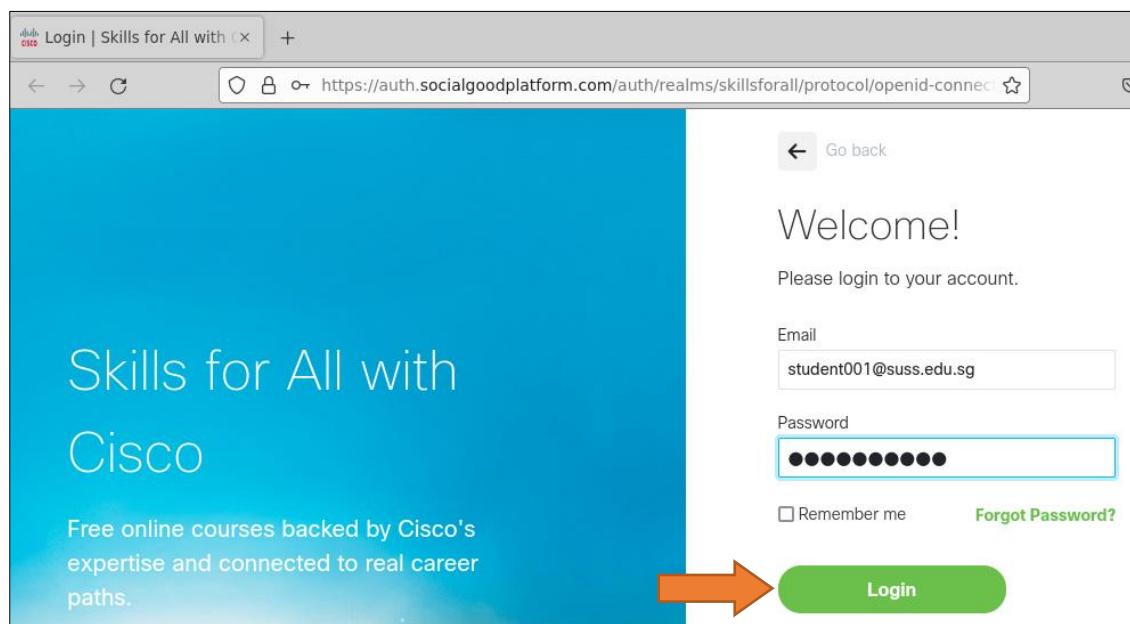


³ (a) If you have already registered with Skills For All, you do not have to register with Networking Academy as this is an option provided for student. (b) The procedure to register with Networking Academy is provided on [Appendix A-6](#).

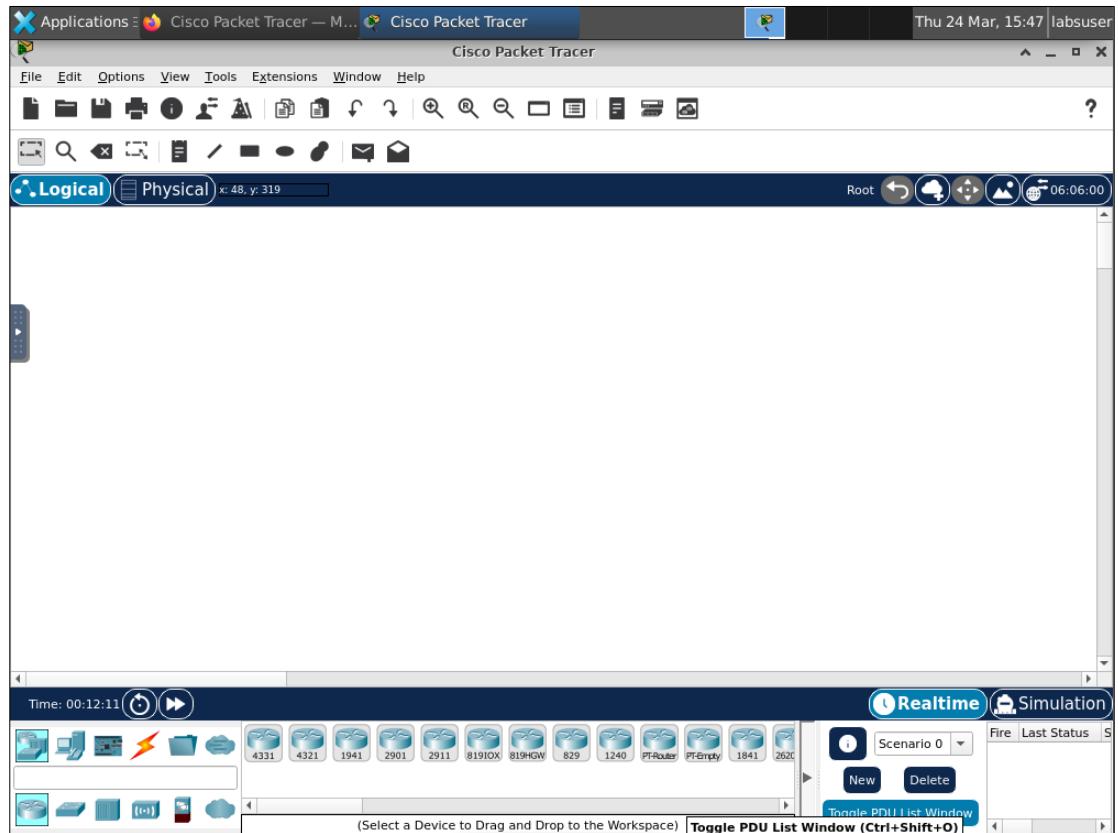
- c. Once the login page is launched in a web browser, enter your **Email** and **Password**.



- d. Click on the **Login** button.



- e. The application displayed will be the same as the screenshot below.



6.4.1 RETRIEVE FILE FOR LAB EXERCISE

- A shortcut link to a directory⁴ where the lab files are stored, has been placed on your desktop just like the screenshot below. You can double click labfiles link to read those lab files. If you do not have the shortcut link, please follow Step B to E to create it.

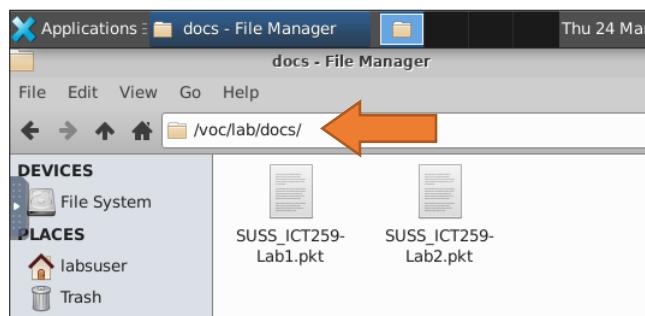


- Double click File System Folder.

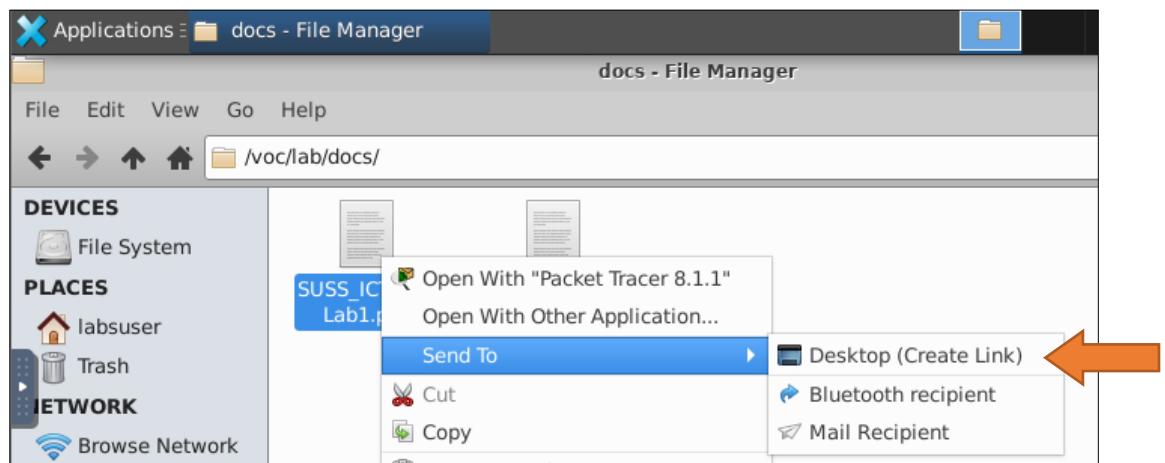
⁴ This particular directory has read only access. If you need to save the file, please choose Home directory.



- c. Go to docs subfolder by entering this path: /voc/lab/docs/



- d. Right click the lab file and select Desktop (Create Link) under Send To option.

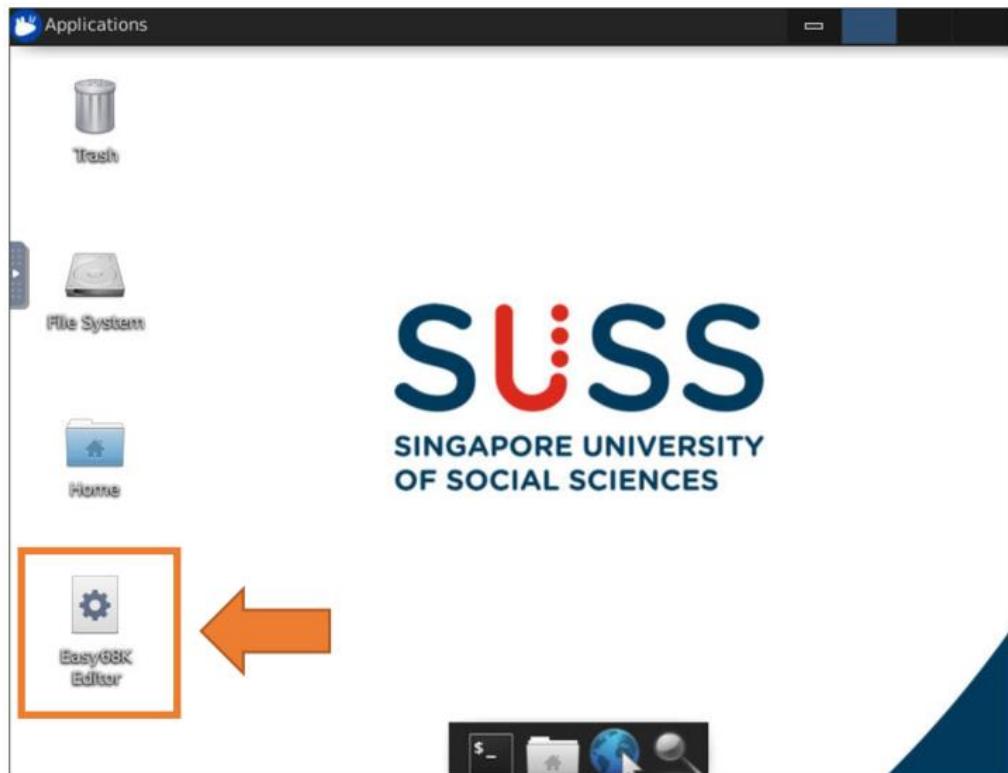


- e. A shortcut link will be placed on the desktop just like the screenshot below.

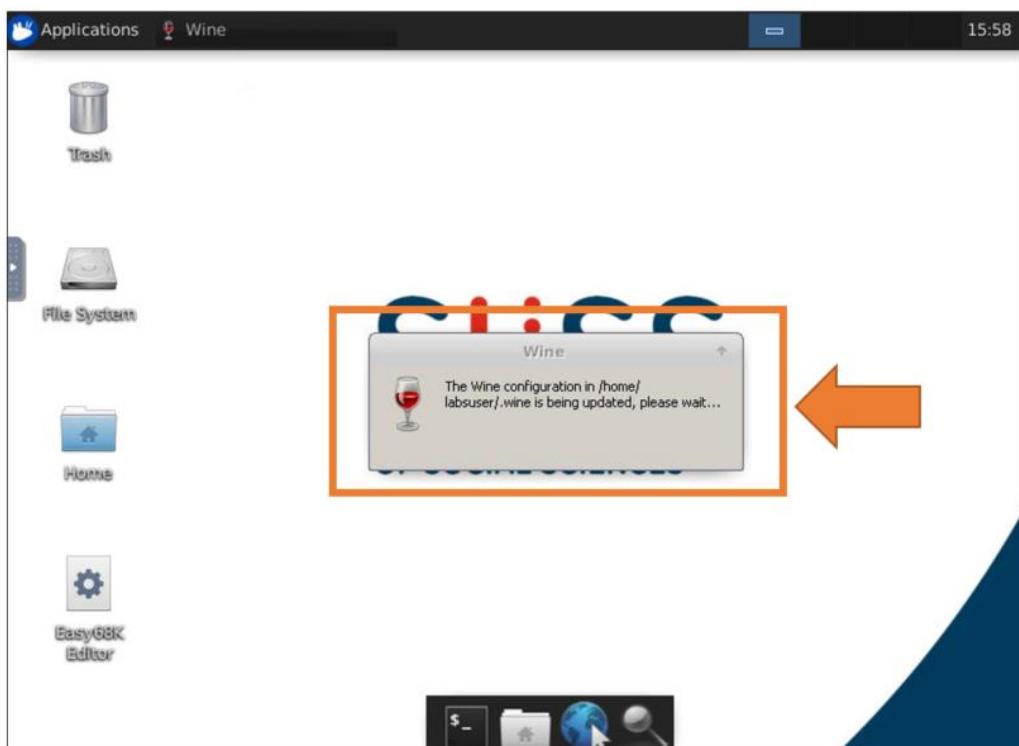


6.5 EASY68K EDITOR/ASSEMBLER (if applicable to your course)

- Click on **Easy68k Editor** short-cut located on the desktop.

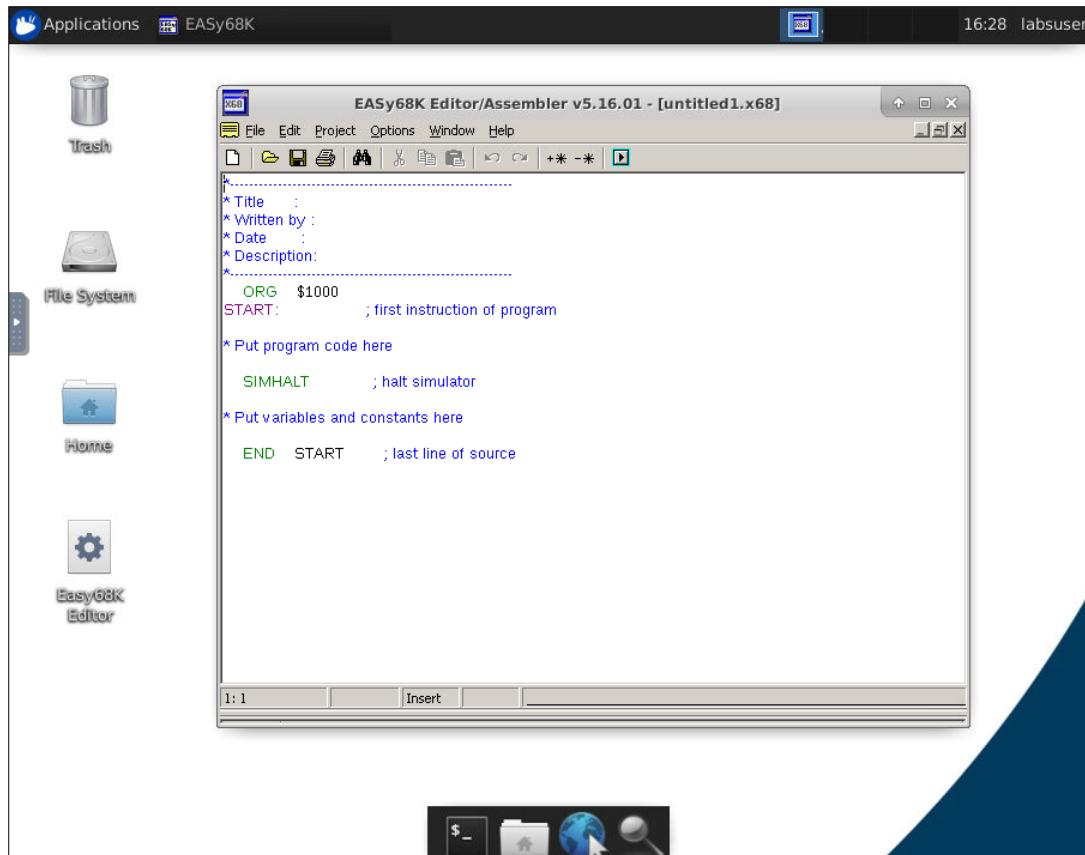


- If you are launching this application for the first time, a message⁵ will be prompted.



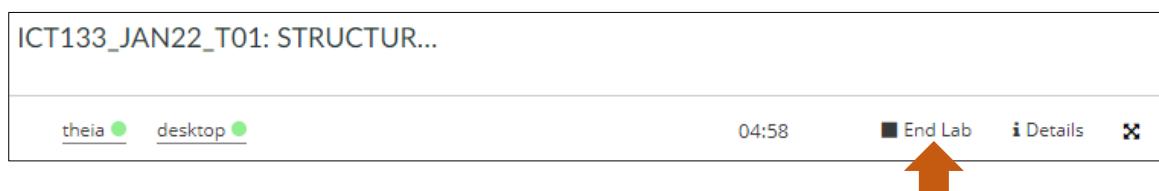
⁵ The installation may take up to 5 minutes to complete.

- c. The application displayed will be the same as the screenshot below.



7. END LAB SESSION

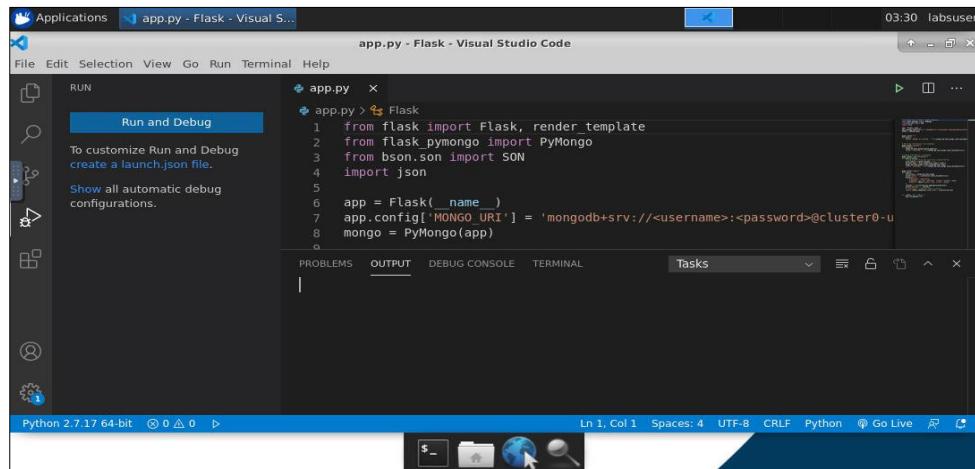
Navigate to [Workspace](#) and click on **End Lab** link to end your lab session as shown in the screenshot below.⁶



⁶ Do remember to save your work first before ending the lab session.

8. CREATE RECORDING LINKS FOR RUNNING OF PROGRAM (if applicable to your course)

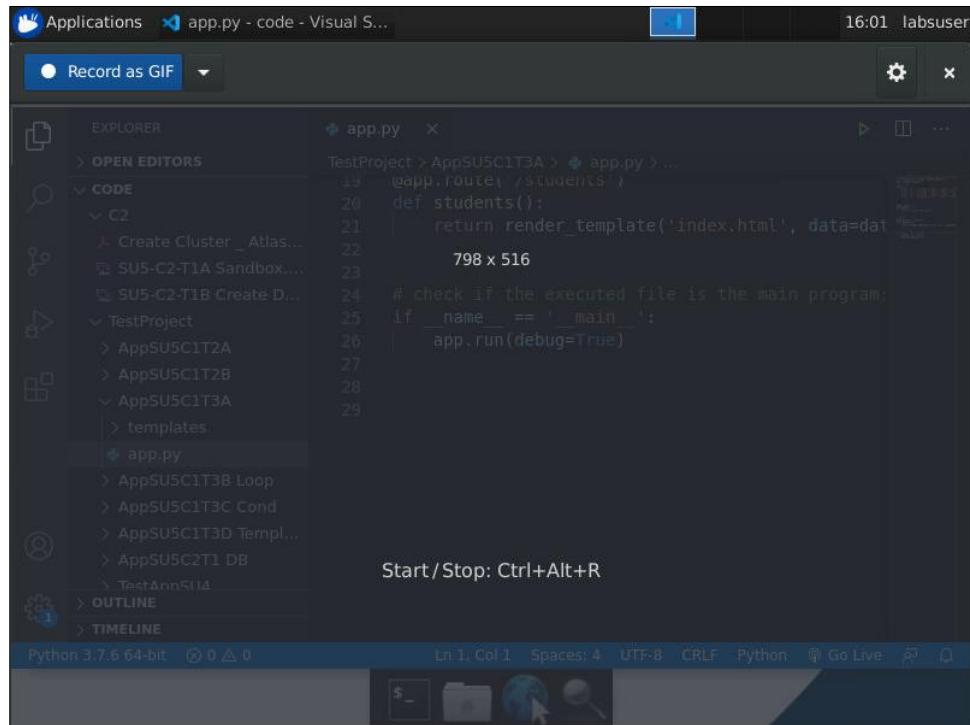
- Open the program that needs to be recorded.



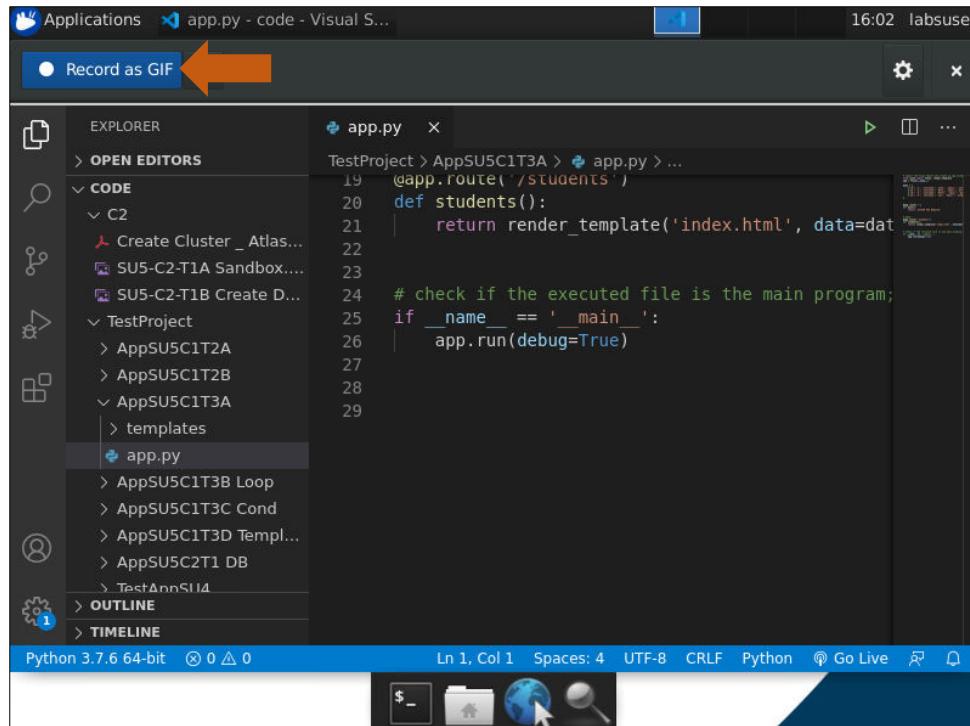
- Navigate to desktop and click on **Peek** shortcut.



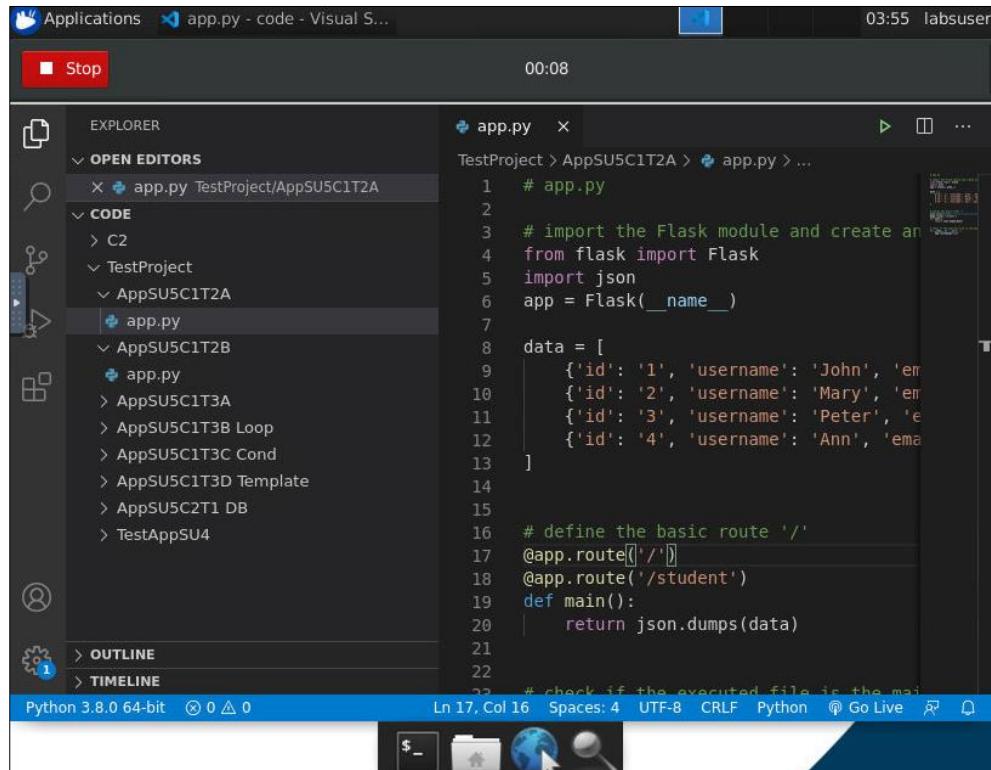
- Position the Peek frame to cover the entire area of screen that needs to be recorded.



- d. Click on **Record as GIF** button to start recording. Please keep the file format type as GIF.



- e. Once you have completed your recording, click on **Stop** button.



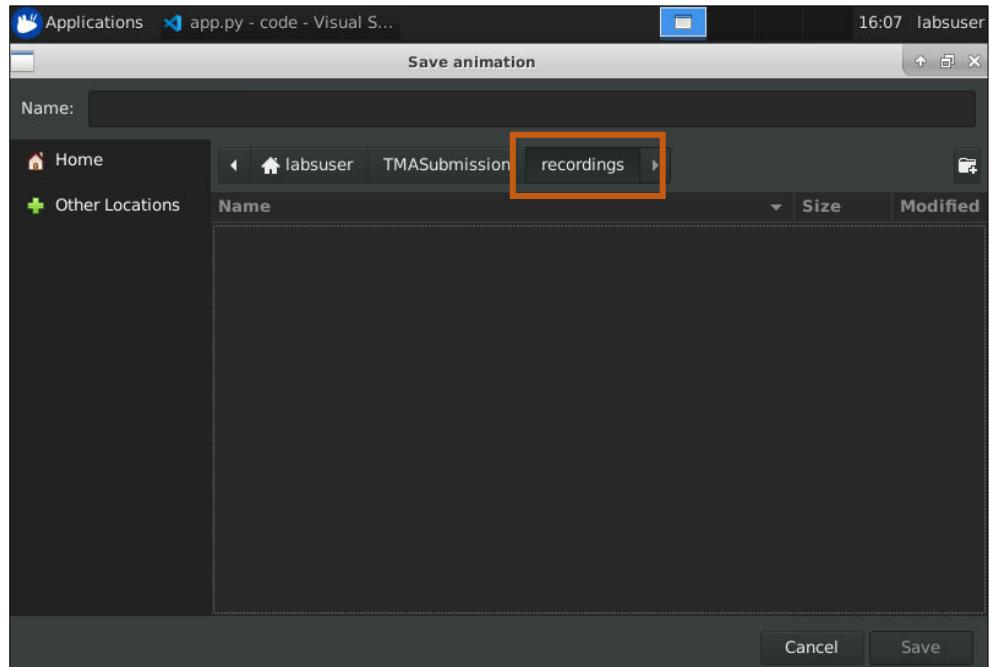
```
# app.py
# import the Flask module and create an
# instance of the Flask class
from flask import Flask
import json
app = Flask(__name__)

# define the basic route '/'
@app.route('/')
@app.route('/student')
def main():
    return json.dumps(data)

# check if the executed file is the main
# file
if __name__ == '__main__':
    app.run()

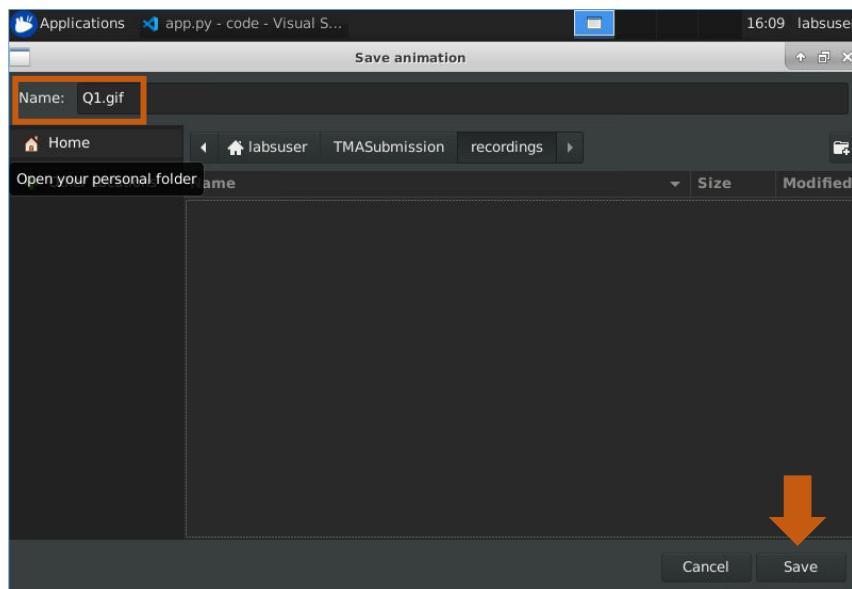
# data to be returned
data = [
    {'id': '1', 'username': 'John', 'email': 'john@example.com'},
    {'id': '2', 'username': 'Mary', 'email': 'mary@example.com'},
    {'id': '3', 'username': 'Peter', 'email': 'peter@example.com'},
    {'id': '4', 'username': 'Ann', 'email': 'ann@example.com'}
]
```

f. Save this file under the **recordings**⁷ folder.

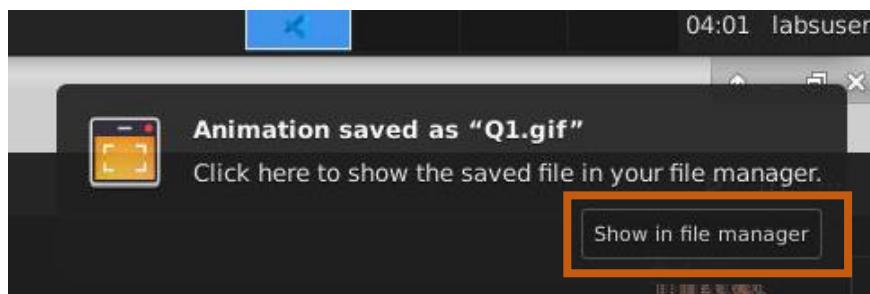


g. Enter a file name and then click on **Save** button. Please keep the format of file as **GIF** type.

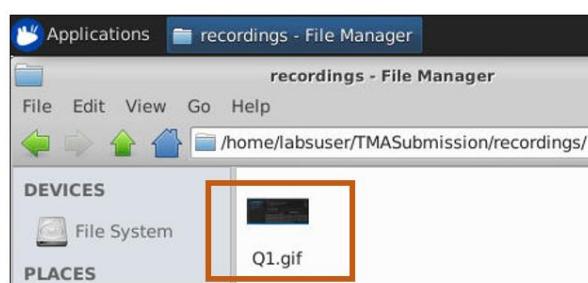
⁷ If you do not see this folder, please create it manually.



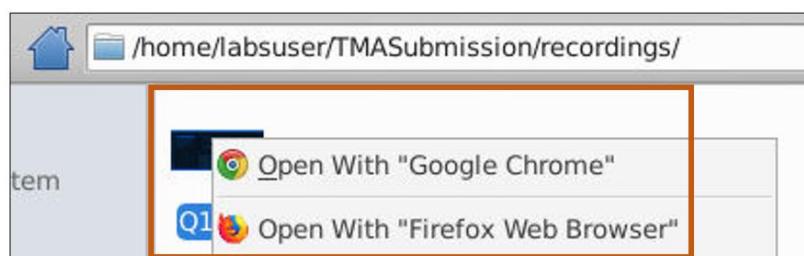
- h. Please wait while the recording is being processed. A notification will pop out at the top right-hand corner of the screen to inform you that the animated GIF is saved successfully. Click “Show in file manager” to view your saved file.



- i. The folder will display to show the saved recording file.



- j. To review the recording, use either Google Chrome or Firefox web browser to open the recording file.



9. SUBMISSION OF ASSIGNMENT IN ZIP FORMAT (if applicable to your course)

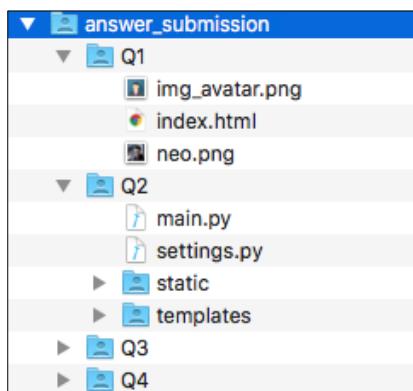
Once you have completed developing your assignment, please ensure that all final version of files are deposited correctly in the respective submission folders as shown in the Table A below. Grader will be accessing these folders to grade your submitted work.

Graded Assignment	Submission folder name shown on desktop	Zip File Name
Tutor-Marked Assignment	TMASubmission	tma.zip
End-of-Course Assignment	ECASubmission	eca.zip

Table A

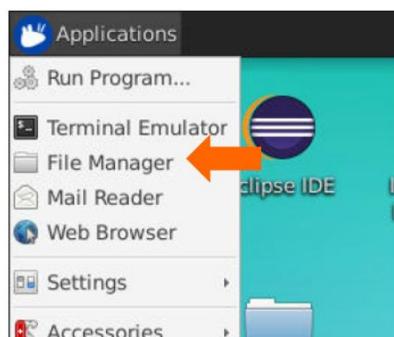
Note: Please note that the Zip File Name is **case sensitive**. Do follow the naming convention as shown in the table above.

- Assuming the solution folders could look like the sample shown below.

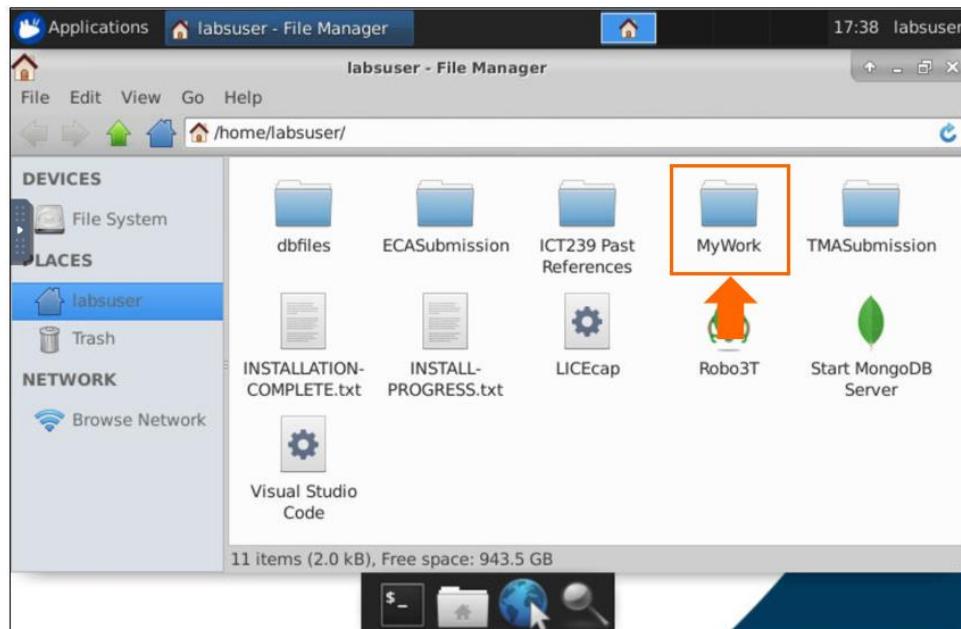


Note: If you are taking ICT239 course, you should (1) remove the python virtual environment directory (2) retain the requirements.txt file in the main submission folder. This requirements.txt will contain the list of python libraries used for your solution and can be used to repopulate the libraries when the submission is done for further development.

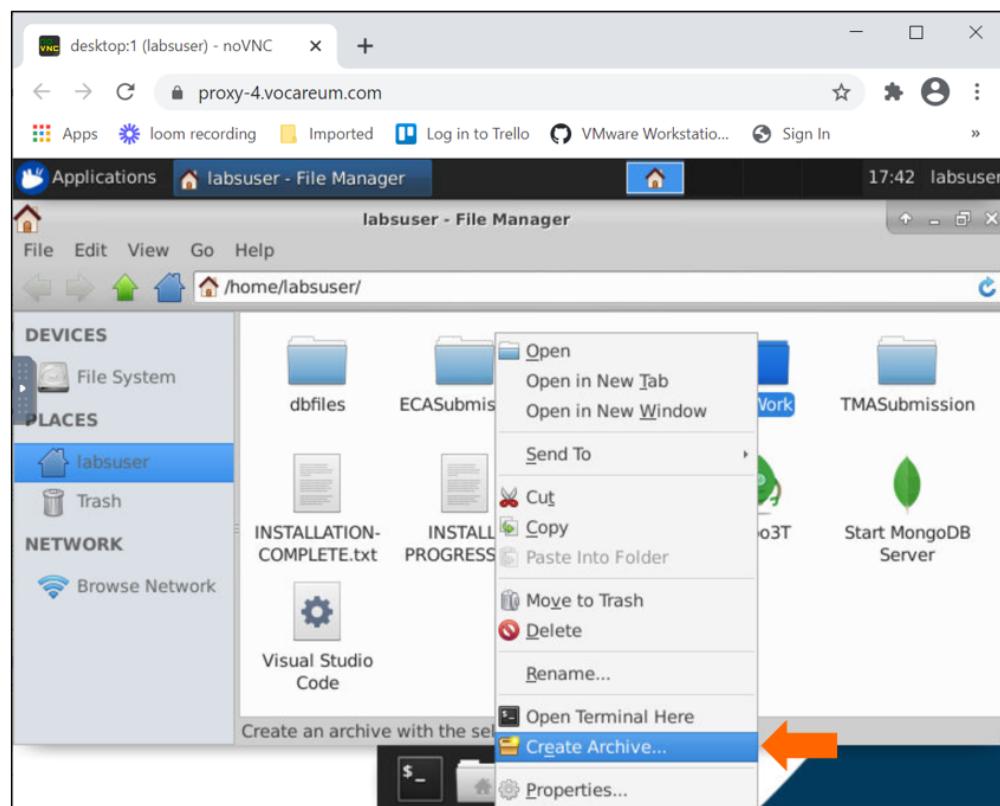
- Zip up your final version of submission with Archive tool. It can be achieved by the following steps.
 - Click to open **File Manager** from Applications Menu.



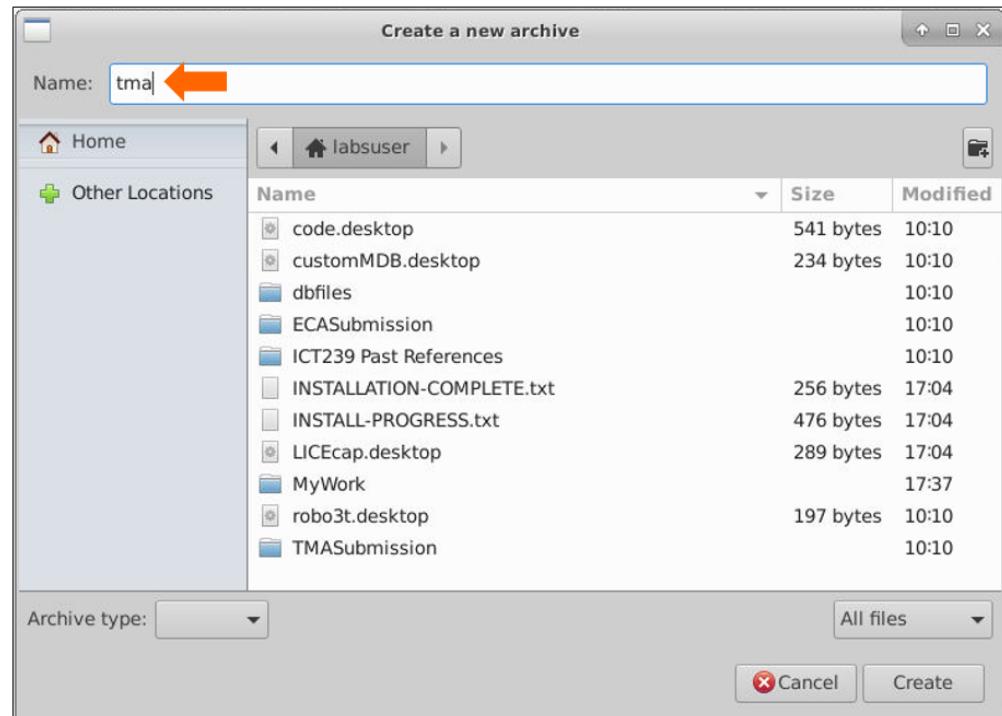
- ii. Navigate to the folder where your final version of files are stored.



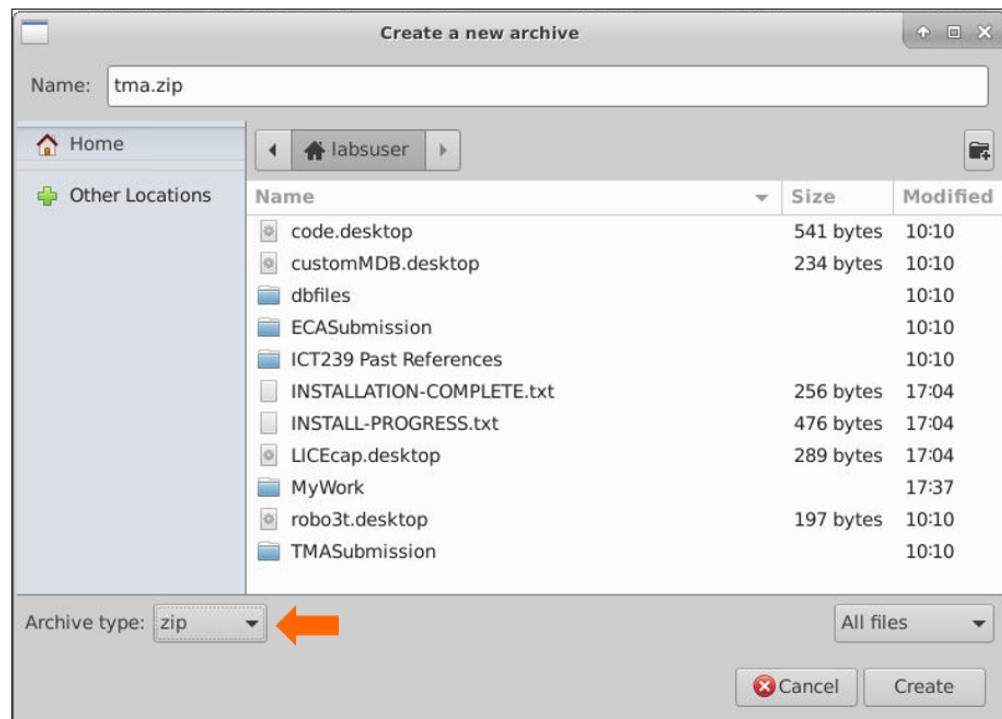
- iii. Right-click on that particular folder and click **Create Archive** to open tool.



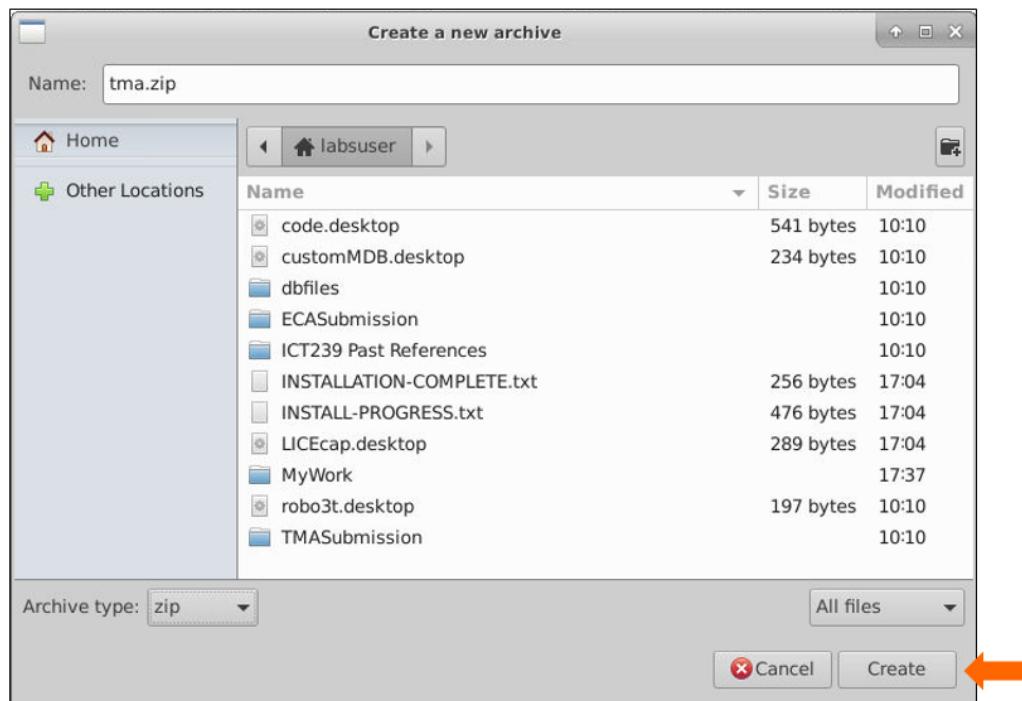
- iv. With reference from the above Table A, enter the name of zip file in the Name field. Please note that the naming is case sensitive.



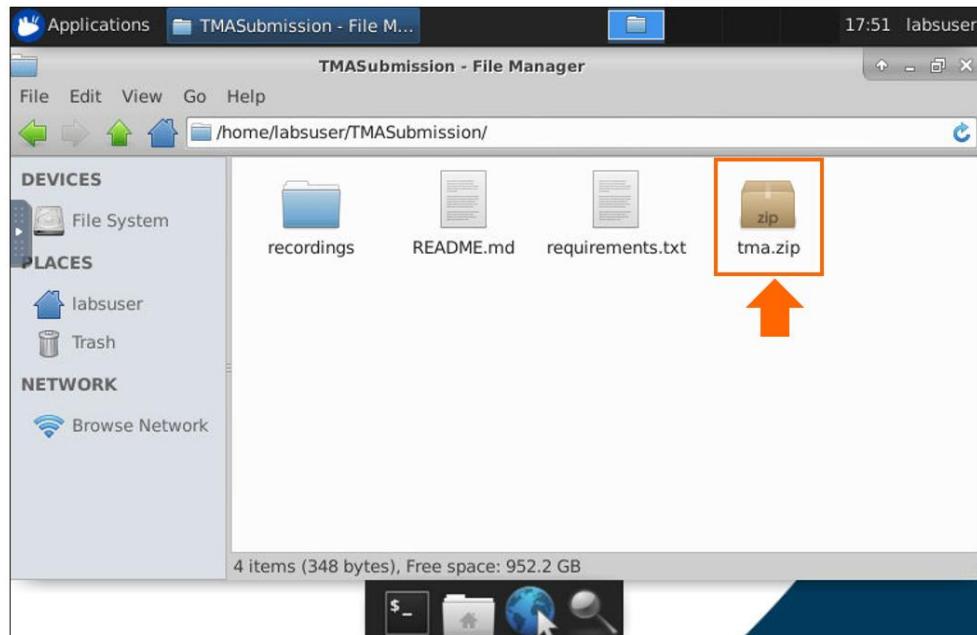
v. Select **zip** from Archive type menu.



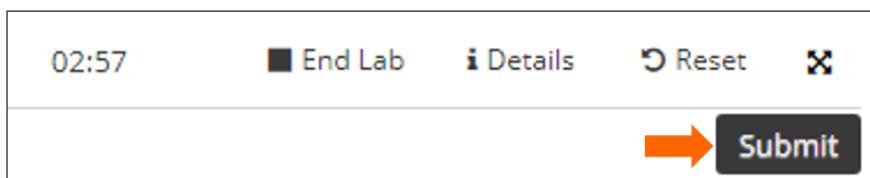
- vi. Click on **Create** button to create the zipped file.



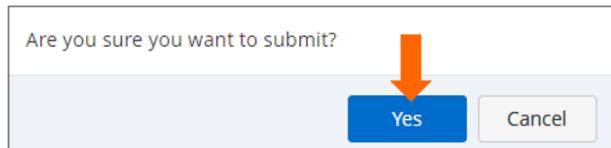
- vii. Copy and paste the zipped file into the submission folder.



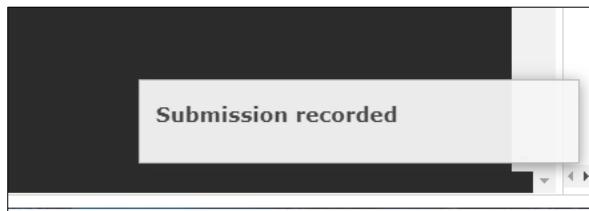
- c. Navigate to WorkSpace and click **Submit** button to submit your assignment.



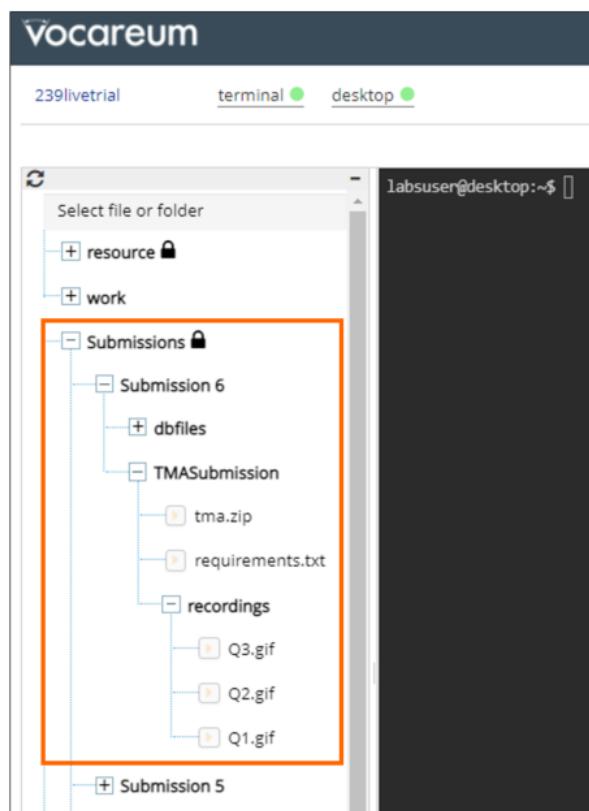
- d. A confirmation message will be prompted. Then, click **Yes** button to confirm submission.



- e. A **Submission recorded** message will flash on the bottom right corner of screen.



- f. Use the file browser on the left panel to expand the **Submissions** folder. Do a check just to make sure that the system did capture all the files that you have submitted in the latest submission count.



- g. After you have submitted the zip file of your solution on Vocareum, you need to submit both the report and zip files on Canvas.

Follow the steps below to submit your report and zip file

- Click on Vocareum Labs on the left menu to show the dashboard and do a print screen of the submission details as shown in sample below.

The screenshot shows the Vocareum workspace interface. The top navigation bar includes a menu icon, the class name 'ICT133_JAN22_T03 > ICT133_JAN22_T03: STRUCTUR...', a home icon, 'My Classes' dropdown, and 'Help'. On the left, a sidebar lists '2022_JAN_T1_PT_6' and various navigation links: Home, Announcements, People, Syllabus, Modules, Vocareum Labs (selected), Assignments, Grades, Virtual Class, and Discussions. The main content area displays the assignment title 'ICT133_JAN22_L01: STRUCTURED PROGRAMMING' and a 'My Grade' button. A vertical sidebar on the right shows the assignment details: 'ICT133_JAN22_L01: STRUCTURED PROGRAMMING'. Below this, a red-bordered box highlights the 'Details' section, which contains the following information:

Details	
Last submitted:	Feb-10-2022 2:06:09 pm +08
Submission count:	3
Due date:	Mar 09 2022 23:55:59 +08

A blue 'My Work' button is located at the bottom of this sidebar.

Sample of print screen to be entered in the TMA/ECA report

- ii. Copy and paste the print screen of submission detail into your TMA/ECA report.

Important!

As shown above, the submitted **date/time stamp of the final version of your solution** will serve as your **proof of submission** in Workspace. Thereafter, grader will grade based on your final submission. **Students are allowed to make multiple submissions before the assignment due date, nonetheless please repeat the above steps (b-g). Students are advised not to submit on Vocareum Lab again once the final version of report is submitted on Canvas as the timestamp on the final version of report should match with the last submission on Vocareum.**

- iii. Navigate to Canvas and select either **TMA01** or **ECA** link under **Assignments** to submit word document report for the respective TMA and ECA assignments.

ICT239_JAN21_T01 > Assignments

2021_JAN_T2_PT_6

Search for Assignment

Home

People

Syllabus

Assignments

Grades

SUSS Gradebook

Virtual Class

Collaborations

Report a Problem

Upcoming Assignments

- TMA01 ← Due Apr 26 at 11:55pm | -/100 pts
- TMA.zip Due Apr 26 at 11:55pm | -/100 pts
- ECA ← Due May 23 at 12pm | -/100 pts
- ECA.zip Due May 23 at 12pm | -/100 pts

For further instructions on submission of assignment, please download **Canvas User Guide for Students** from Learning Services (LS) Support Portal via the link below:
<https://suss.force.com/lssupport/s/userguideforstudent>

- iv. Repeat the same steps as **Step iii** for submission of zip file. Please note that you are required to select either **-TMA.zip** or **-ECA.zip** link when submitting your zip file for the respective TMA and ECA assignments.

ICT239_JAN21_T01 > Assignments

2021_JAN_T2_PT_6

Search for Assignment

Home

People

Syllabus

Assignments

Grades

SUSS Gradebook

Virtual Class

Collaborations

Report a Problem

Upcoming Assignments

- TMA01
Due Apr 26 at 11:55pm | -/100 pts
- TMA.zip ← Due Apr 26 at 11:55pm | -/100 pts
- ECA
Due May 23 at 12pm | -/100 pts
- ECA.zip ← Due May 23 at 12pm | -/100 pts

10. TASK LIST OF TMA/ECA SUBMISSION (if applicable to your course)

While you are submitting your assignment to SUSS Canvas, use the following Task Lists (a) and (b) to help guide your steps.

Task List (a)

Description of Task	Completed (Put a tick)	From Student Reference Guide
1. Configured your Chrome browser settings.	<input type="checkbox"/>	Section 1
2. Accessed to Cloud IDE and Virtual Desktop Applications that are applicable for your course.	<input type="checkbox"/>	Section 2, 3, 4, 5 and 6
3. Having the following shortcuts created on your virtual desktop:		Section 5
o Applications or libraries that is available to your course (Refer to Annexe)	<input type="checkbox"/>	
o Folder containing past references	<input type="checkbox"/>	
o Empty folder to be used for assignment submission:		
▪ TMASubmission	<input type="checkbox"/>	
▪ ECASubmission	<input type="checkbox"/>	
4. Once you have developed your assignment,		
3.1 Created recording for running of program. Place the recording in the submission folder.	<input type="checkbox"/>	Section 8
3.2 Organised and deposited your final version of solution into separate folders for each question.	<input type="checkbox"/>	Section 9
3.3 Removed the virtual environment directory in the submission folder which includes all the sub-folder(s).	<input type="checkbox"/>	
3.4 Deposited a copy of requirements.txt file in the submission folder.	<input type="checkbox"/>	
3.5 Zipped up your final version of solution.	<input type="checkbox"/>	
3.6 Named the zipped file correctly.	<input type="checkbox"/>	
3.7 Placed the zipped file in the submission folder.	<input type="checkbox"/>	
5. Submitted assignment in Vocareum Lab.	<input type="checkbox"/>	Section 9
6. Verified the submitted files are captured by system.	<input type="checkbox"/>	Section 9
7. Completed Task List (a) and (b).	<input type="checkbox"/>	Section 10
8. Submitted assignment in Canvas.	<input type="checkbox"/>	Section 9

Task List (b) – To be copy and paste into your report

Description	[Information to be provided by student]	Completed (Put a tick)	From Student Reference Guide
Print Screen of Submission Details from Vocareum Lab:		<input type="checkbox"/>	Section 9
Please indicate that your program can run on Vocareum Lab:	For example: Question 1: Yes Question 2: No Question 3: Yes	<input type="checkbox"/>	Answer either Yes or No.
Please provide the file names of recordings in the recordings sub folder.	For example: Question 1: Q1.gif Question 2: Nil. Question 3: Q3.gif	<input type="checkbox"/>	Section 8

11. IT SUPPORT

Should you have any query or issues encountered, please use the discussion forum in Canvas for clarification. Alternatively, you may contact the administrator via email at vlisupport@suss.edu.sg for further support.

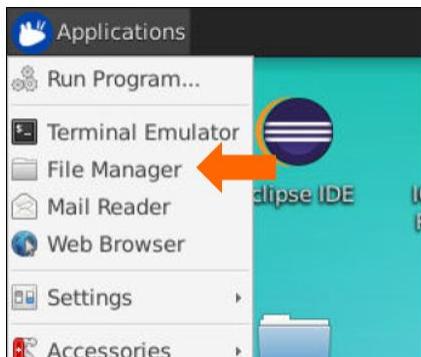
12. IMPORTANT POINTS TO TAKE NOTE (if applicable to your course)

- a. Students' final version of solution code are required to be zipped and deposited in the submission folder. For those who choose to develop their work locally, they would be responsible themselves for issues encountered in the local platform and to perform by uploading their files to the default Vocareum platform so that instructor can unzip it and run the source code.
- b. The solution code will ONLY be accepted on Vocareum when the Word Document report for Turnitin is also submitted. Otherwise, it will be considered as invalid.

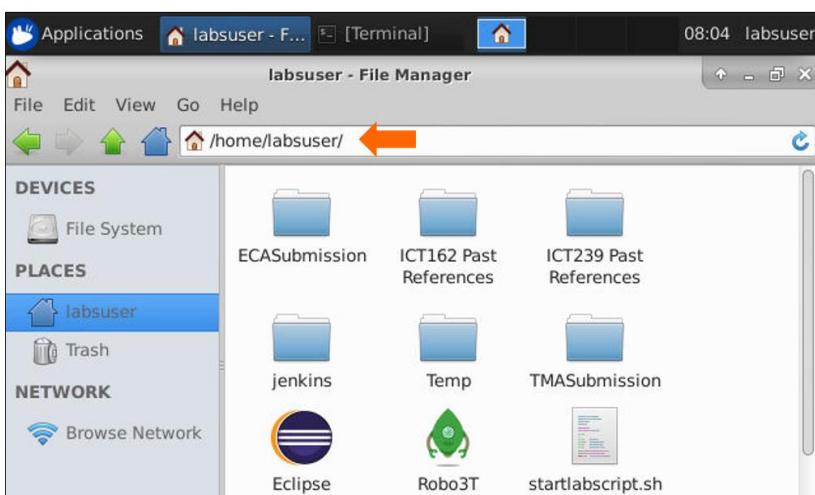
13. APPENDIX A-1 [DOWNLOADING FILE FROM VIRTUAL DESKTOP]

To download file from virtual desktop to your local computer, please use the steps below:

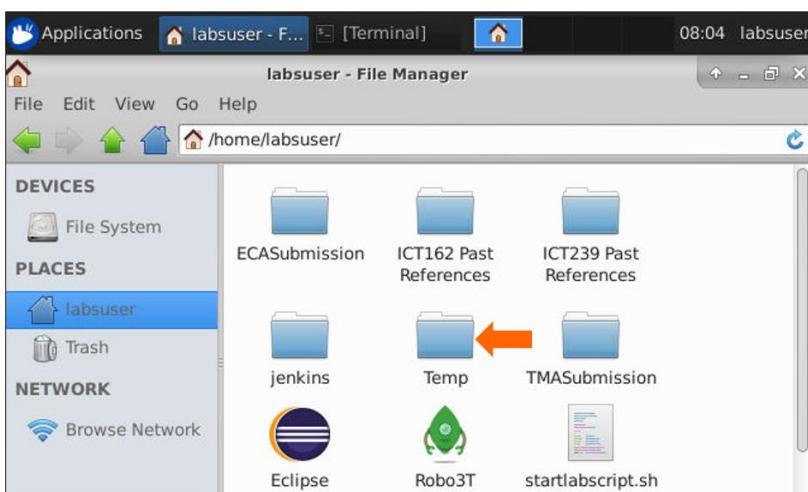
- Copy the file(s) that you need.
- Click to open **File Manager** from Applications menu.



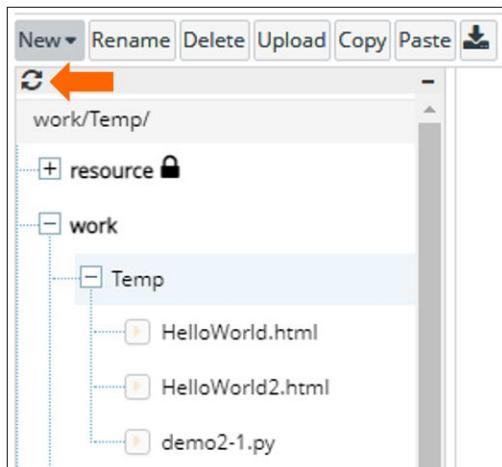
- Navigate to the following path in File Manager:
/home/labsuser/



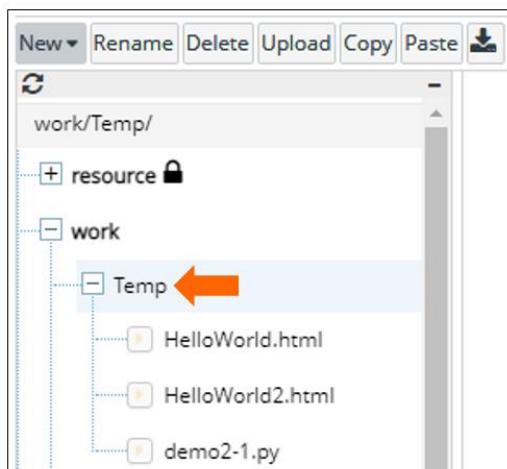
- Paste those file(s) into this folder. If there are multiple files, you may wish to create a temporary folder to hold it first.



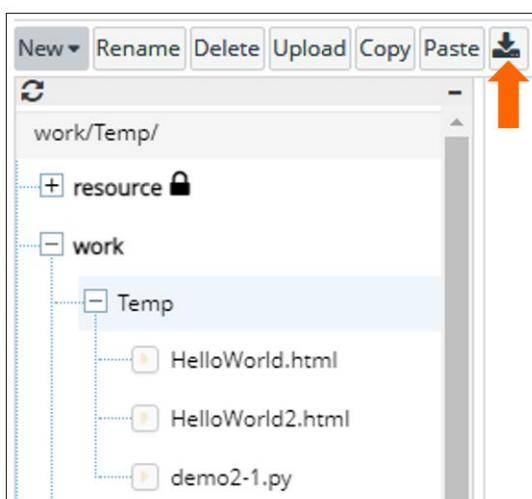
- e. Navigate to **WorkSpace Terminal** and click on **Reload** icon as pointed to by arrow below. This action will reload the contents of the work folder.



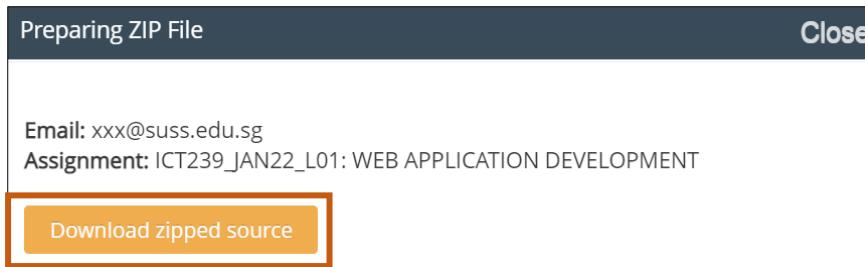
- f. To ensure the file(s) is reloaded correctly, expand work/Temp folder to verify that those file(s) is present.



- g. Select the file(s) that you need and then click **Download** button.



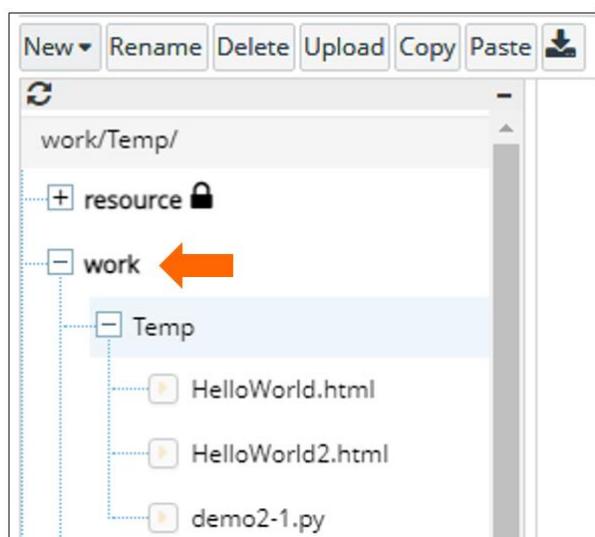
- h. System will compress the selected file into Zip. Click **Download zipped source** link to download and save those file(s) into local computer.



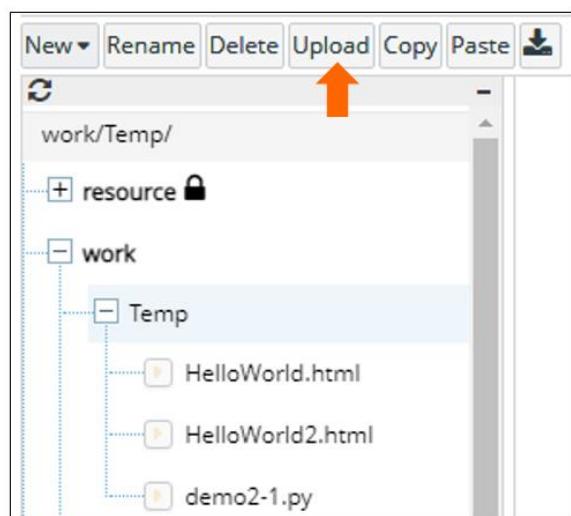
14. APPENDIX A-2 [UPLOADING OF FILE TO VIRTUAL DESKTOP]

To upload file from your local computer to virtual desktop, please use the steps below:

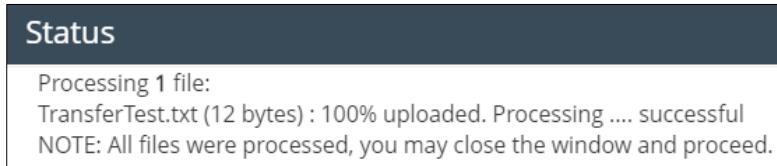
- Go to WorkSpace Terminal and select **work** folder.



- Click on **Upload** button and open the file that you need.



- System will start to process the upload and will prompt successful when completed.

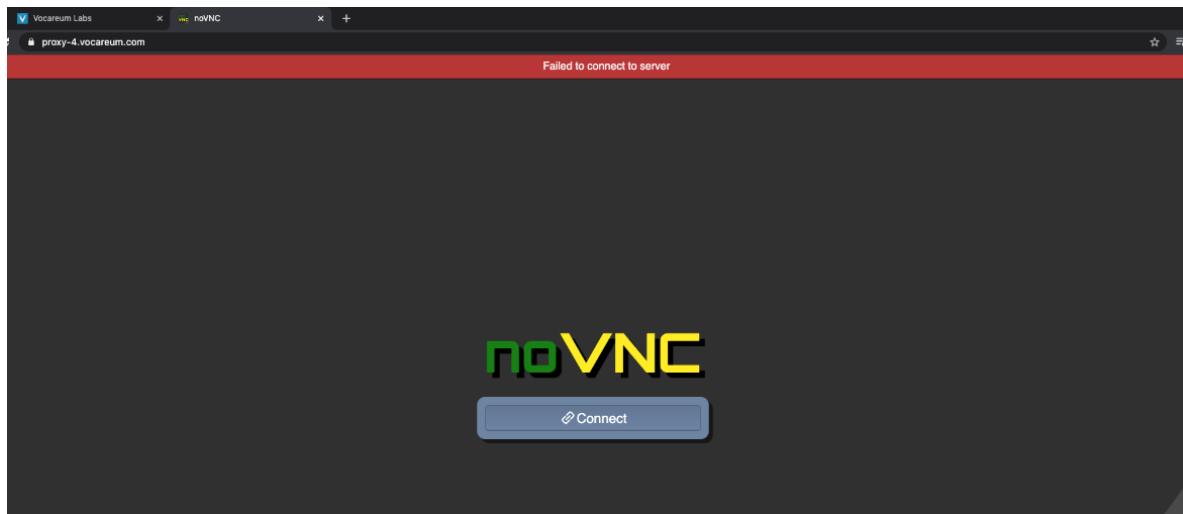


- d. Navigate to Virtual Desktop to verify those uploaded files. They should be located in the File Manager when you access this path.
/home/labsuser/

15. APPENDIX A-4 [RE-CONNECT VIRTUAL DESKTOP]

How to resolve connection error when connection to virtual desktop is lost?

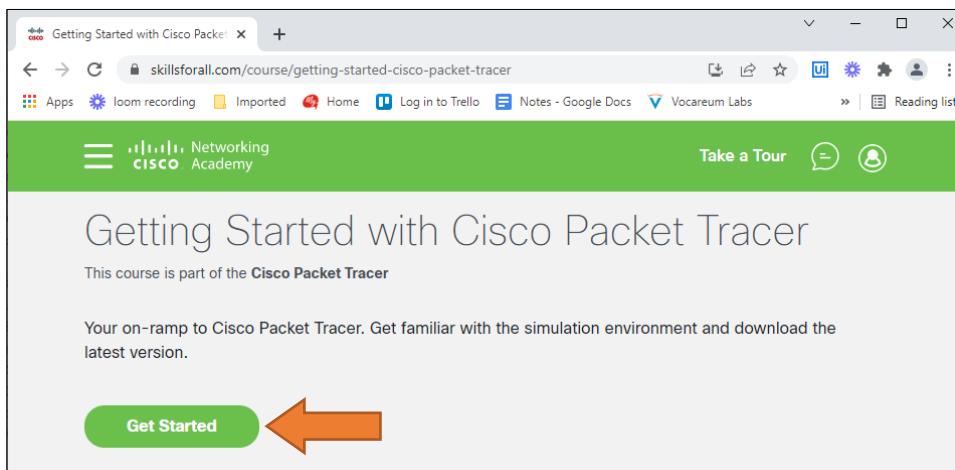
A sample of the error is shown below:



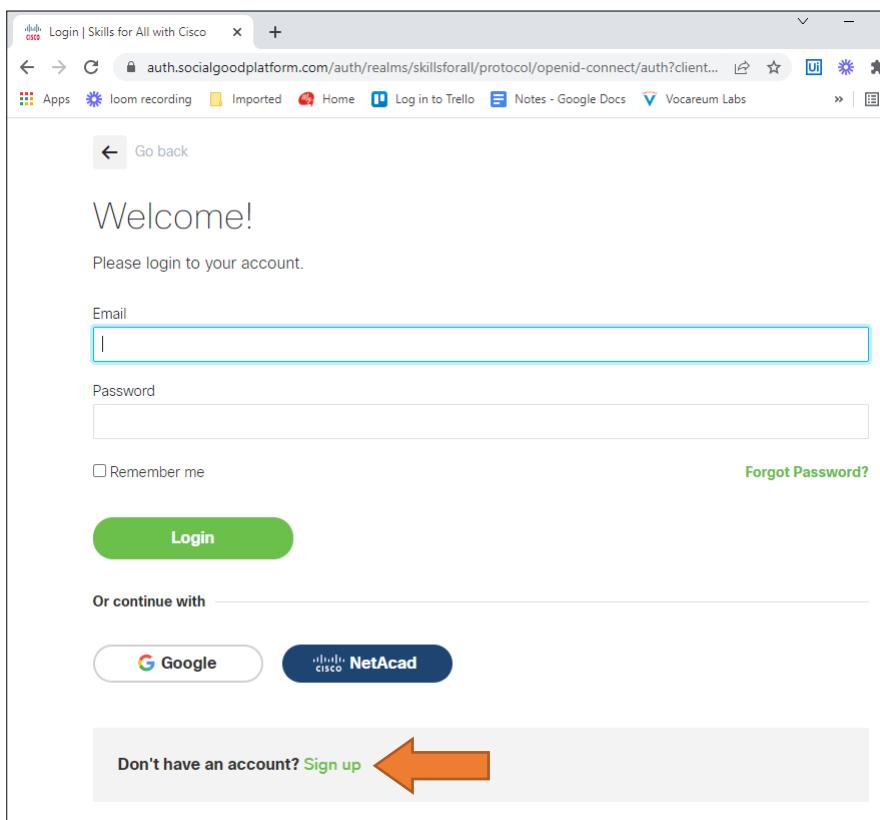
- a. Close the browser tab.
- b. Repeat Step 5a and 5b under [Section 5](#) to reconnect the virtual desktop.
- c. If the same error occurs,
 - i. Repeat the step under [Section 7](#) to end the current lab session.
 - ii. Then click Start Lab to start a new lab session.

16. APPENDIX A-5 [ACCOUNT REGISTRATION FOR CISCO SKILLS FOR ALL]

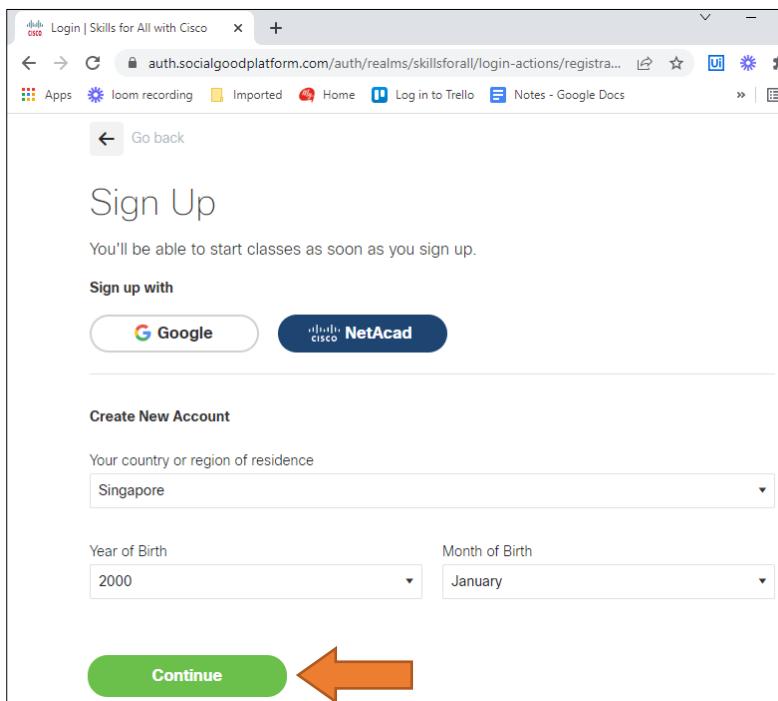
- a. Go to <https://skillsforall.com/course/getting-started-cisco-packet-tracer> and click the **Get Started** button.



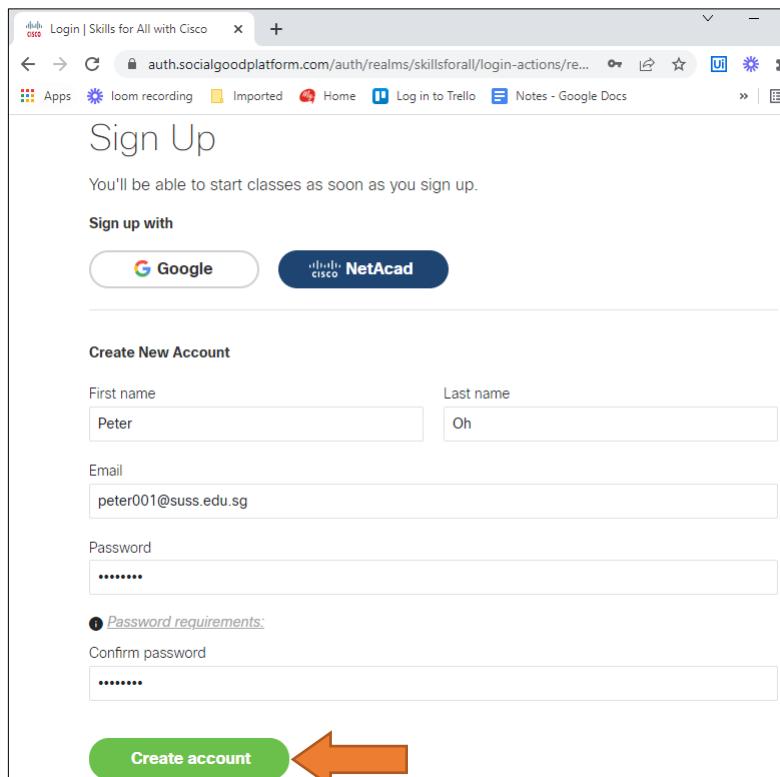
b. Click the Sign up link.



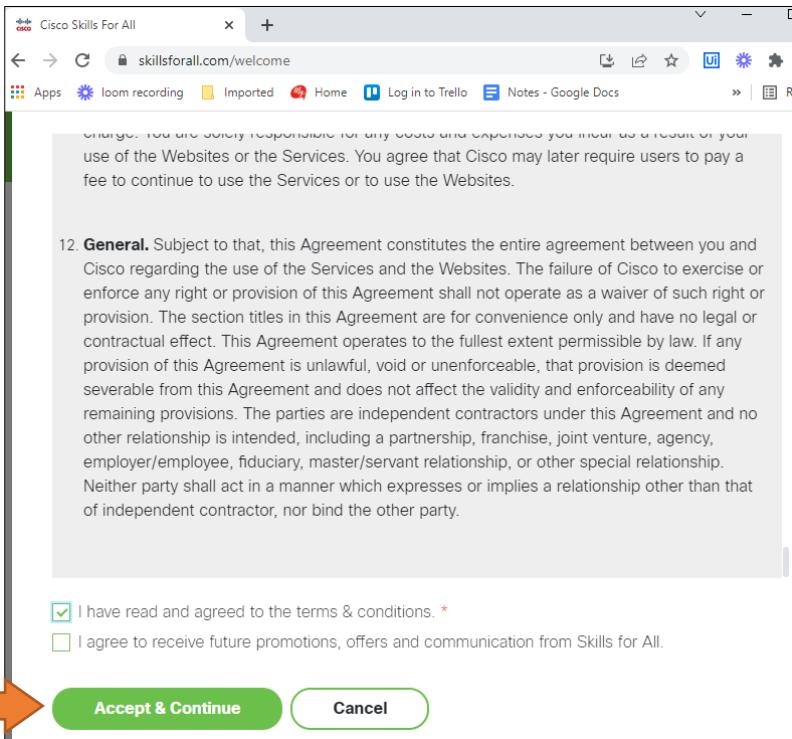
c. Select Country, Year of Birth and Month of Birth and then click the Continue button.



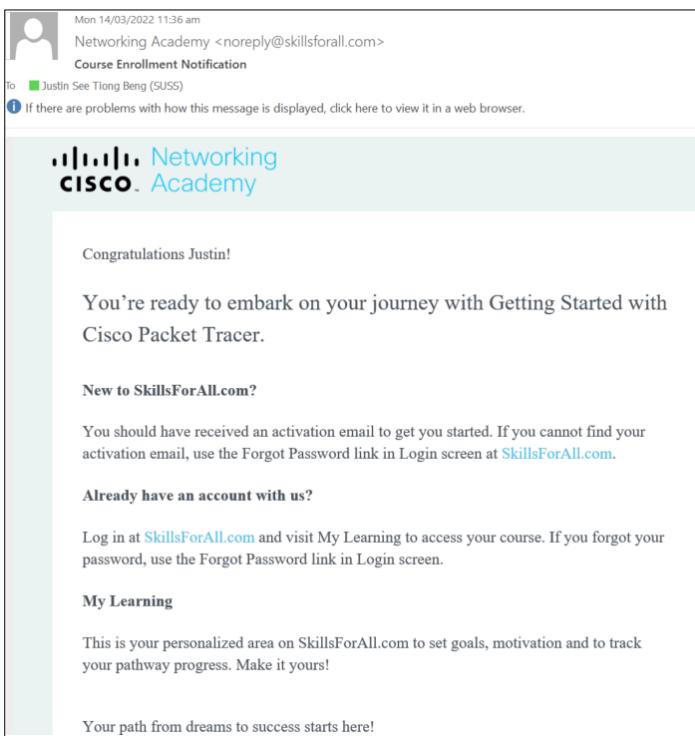
- d. Enter First name, Last name, Email, Password and then click the Create account button. **For Email, please enter your SUSS email address.**



- e. Enter First name, Last name, Email, Password and then click the Create account button.



- f. Check your mailbox to make sure that you have received an Enrolment Notification email that looks like the sample below.



- g. You may return to [Section 6.4](#) for login via **Skills For All** button.

17. APPENDIX A-6 [ACCOUNT REGISTRATION FOR CISCO NETWORKING ACADEMY]

- a. Navigate to the self-enrolment website by clicking the URL link posted on the VLI Support Discussion Forum in Canvas L-group.
- b. Upon access to the website, enter Country, Birth Month and Birth Year, then click the **Next Account Details** button.

COMPUTER NETWORKING

Singapore University of Social Sciences

Description

Self Enrolment for ICT259_JAN2022 Semester

Course Details

ICT259_JAN2022

Introduction to Packet Tracer (English - 1.13)

24 Mar - 24 Jun 2022

VLI Team

Enroll now

Your country or region of residence *

Singapore

Your Birth Month *

January

Your Birth Year *

2000

Next Account Details

- c. Enter your Particulars, Email (use SUSS email address), State, Captcha and then click the **Submit** button.

COMPUTER NETWORKING

Singapore University of Social Sciences

Description

Self Enrolment for ICT259_JAN2022 Semester

Course Details

ICT259_JAN2022
Introduction to Packet Tracer (English - 1.13)
24 Mar - 24 Jun 2022
VLI Team

Enroll now

First Name *
Peter

Last Name *
Tan

Email *
peter.tan001@suss.edu.sg

Country or region *
Singapore

State *
Singapore

$10 + 3 =$
13

Math question (Captcha) *

I would like to receive email communications about courses and learning offerings from Cisco and its Affiliates. I understand I can unsubscribe at any time.

Back 



- d. Once the form is submitted, the website will display a message same as the screenshot below.

Home

• Thank you for enrolling. To get started, we emailed a link to activate your account to 001@suss.edu.sg. Follow the instructions to access your course.
You must activate your account in order to access the course.
Did not receive an activation email?
• Check your spam folder - Sender will be no-reply@netacad.com
• Resend Activation Email
• Still having issues? Please contact NetAcad Virtual Agent

COMPUTER NETWORKING

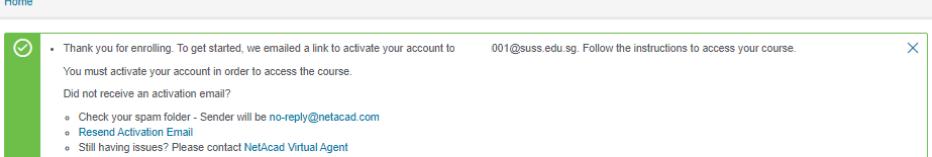
Singapore University of Social Sciences

Description

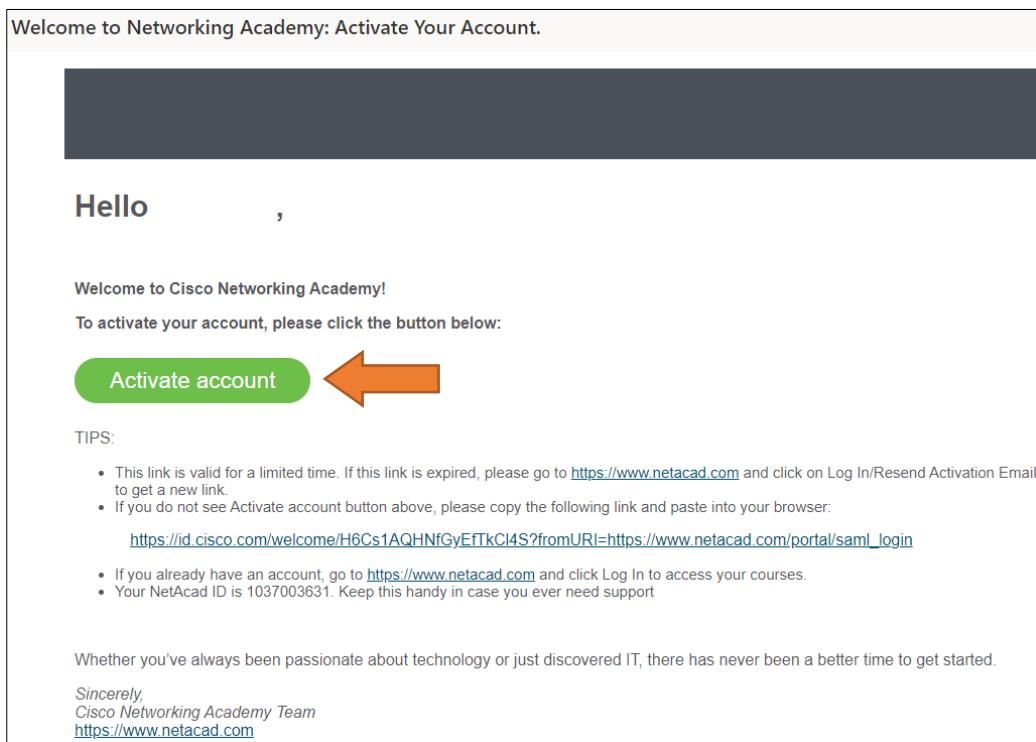
Self Enrolment for ICT259_JAN2022 Semester

Course Details

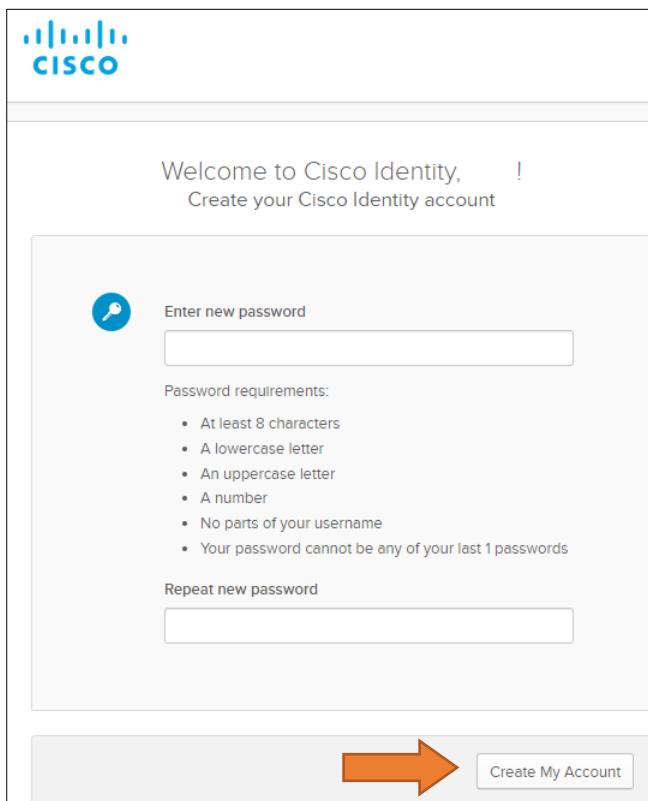
ICT259_JAN2022
Introduction to Packet Tracer (English - 1.13)
24 Mar - 24 Jun 2022
VLI Team



- e. Check your SUSS mailbox for an email sent from Netacad.com and click the **Activate Account** button.



- f. When a new page is launched, enter your new password and repeat to confirm. Then click **Create My Account** button.



- g. Choose the option required for the question about experience and then click **Create Account** button.

Student User Guide for Virtual Lab Infrastructure (VLI) Workspace

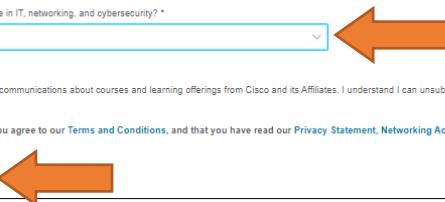
We're excited to have you join the Networking Academy community. Learning more about you allows us to create programs that help people around the world. So tell us a little about yourself.

Account Email * Language *
Email address will be used to activate and login for the account. You can change Language later in user profile screen

First Name * Last Name *

Your Birthday *
Birth Month * Birth Year *
We use birth information for aggregated age category reporting, and to identify duplicate registrations.

Providing additional personal information is optional but helps us provide a more personalized experience.
 I agree to provide more information about myself.

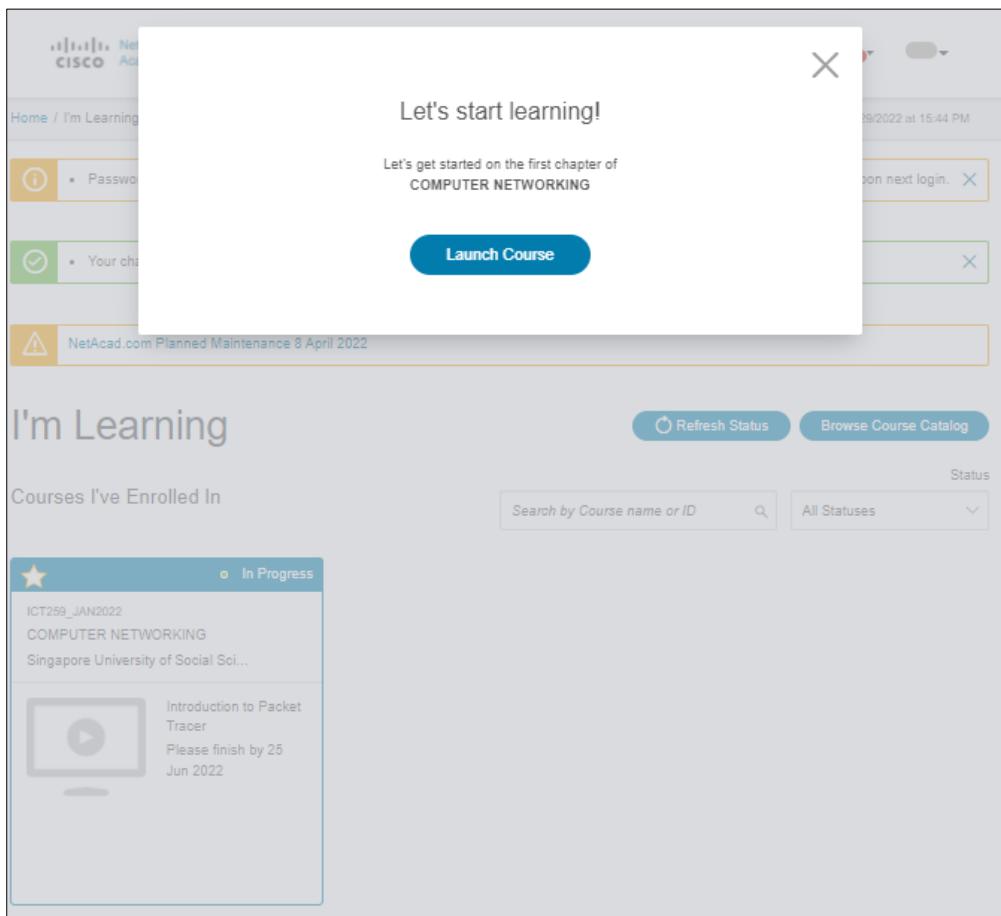
What is your practical experience in IT, networking, and cybersecurity? *
 

I would like to receive email communications about courses and learning offerings from Cisco and its Affiliates. I understand I can unsubscribe at any time.

By clicking Create Account, you agree to our [Terms and Conditions](#), and that you have read our [Privacy Statement](#), [Networking Academy Privacy Data Sheet](#), including our [Cookie Policy](#).

Create Account 

- h. Once your account is created successfully, the website will display a message same as the screenshot below.



- h. You may return to [Section 6.4](#) for login via **Networking Academy** button.

18. ANNEXE

The following is the list of applications that have been pre-installed in the virtual desktop.

No	Application Name
1.	Web Browsers (Firefox and Chrome)
2.	Visual Studio Code
3.	Python3.6 – 3.7
4.	Virtual Environment (venv)
5.	Jupyter Notebook
6.	MongoDB Server
7.	Peek
8.	Code-Server
9.	JupyterLab
10.	Wine
11.	Packet Tracer
12.	EASy68k

19. FAQ

Q1. The loading of WorkSpace is taking a long time to load.

Students who are accessing their WorkSpace for the first-time might experience a longer time to load as the system is performing the initialization process. Please be advised not to close the web browser and wait until the loading is completed.

---END OF GUIDE---