

Student User Guide for Virtual Lab Infrastructure (VLI) Workspace

TABLE OF CONTENTS

1. SIGN IN TO VOCAREUM LAB	3
2. ACCESS VIRTUAL DESKTOP.....	4
3. CONFIGURATION OF DESKTOP SCREEN.....	7
4. ECLIPSE IDE APPLICATION (if applicable to your course).....	9
5. VISUAL STUDIO CODE APPLICATION (if applicable to your course)	14
6. PYCHARM: PYTHON IDE APPLICATION (if applicable to your course).....	15
7. THONNY APPLICATION (if applicable to your course).....	16
8. JUPYTER NOTEBOOK APPLICATION (if applicable to your course).....	17
9. ROBO3T APPLICATION AND MONGODB CONNECTION (if applicable to your course).....	19
10. CISCO PACKET TRACER (if applicable to your course).....	25
11. END LAB SESSION	28
12. COPY/PASTE TEXT FROM LOCAL DESKTOP TO VIRTUAL DESKTOP	28
13. CREATE RECORDING LINKS FOR RUNNING OF PROGRAM (if applicable to your course).....	31
14. SUBMISSION OF ASSIGNMENT IN ZIP FORMAT (if applicable to your course)	34
15. TASK LIST OF TMA/ECA SUBMISSION (if applicable to your course).....	41
16. IT SUPPORT	42
17. IMPORTANT POINTS TO TAKE NOTE (if applicable to your course)	42
18. APPENDIX A-1 [INSTALLATION PROCESS].....	43
19. APPENDIX A-2 [DOWNLOADING OF FILE].....	45
20. APPENDIX A-3 [UPLOADING OF FILE]	47
21. APPENDIX A-4 [TROUBLESHOOTING MONGODB CONNECTION]	48
22. APPENDIX A-5 [RE-CONNECT VIRTUAL DESKTOP].....	50
23. ANNEXE.....	50
24. FAQ.....	51

1. SIGN IN TO VOCAREUM LAB

Please check your SUSS mailbox for an email with subject “Vocareum Course Invitation” from sender support@vocareum.com and follow the instructions for sign in.

Subsequently, the sign in page can be found at this URL (<https://labs.vocareum.com/home/>). You may want to bookmark this URL as reference.

- a. With your credentials ready, you may proceed to enter your SUSS MyMail address in the Email field as pointed to by arrow below.

You are not logged in. Please login

Sign in

Email

student001@suss.edu.sg

Password [Forgot password?](#)

.....

Sign in

- b. Follow by entering your password in the Password field.

You are not logged in. Please login

Sign in

Email

student001@suss.edu.sg

Password [Forgot password?](#)

.....

Sign in

- c. Click on **Sign in** button to access Vocareum Lab.

You are not logged in. Please login

Sign in

Email

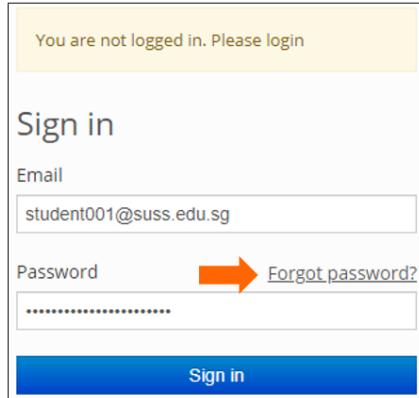
student001@suss.edu.sg

Password [Forgot password?](#)

.....

Sign in

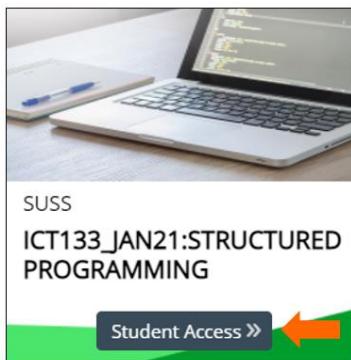
- d. Please take note of the following points below:
 - i. You are required to sign in after receiving the email notification.
 - ii. If you are unable to sign in due to authentication issue, please use "[Forgot Password](#)" link found on the Sign In page to reset your password. If you did not receive any emails from Vocareum after a short period of time, do check your spam folder.



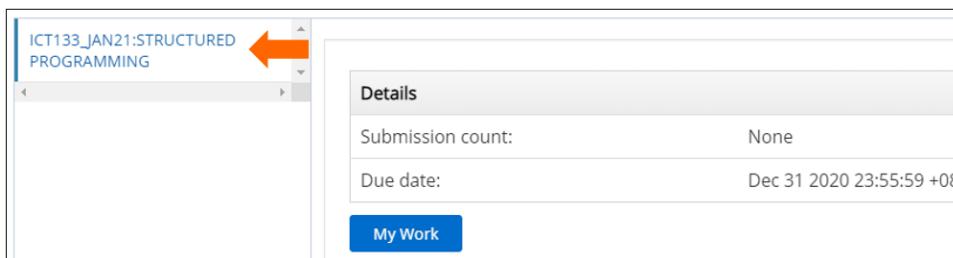
The screenshot shows a 'Sign in' form. At the top, a yellow banner says 'You are not logged in. Please login'. Below it, the word 'Sign in' is centered above two input fields: 'Email' containing 'student001@suss.edu.sg' and 'Password' containing several dots. To the right of the 'Password' field is a blue 'Forgot password?' link with an orange arrow pointing to it. At the bottom is a large blue 'Sign in' button.

2. ACCESS VIRTUAL DESKTOP

- a. Upon successful login, click on **Student Access** under course name as pointed to by arrow below.

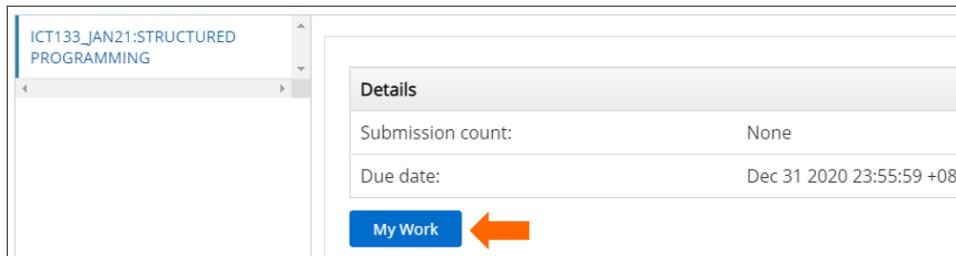


- b. You will be directed to a dashboard where the name of your assignment is shown on the left panel.



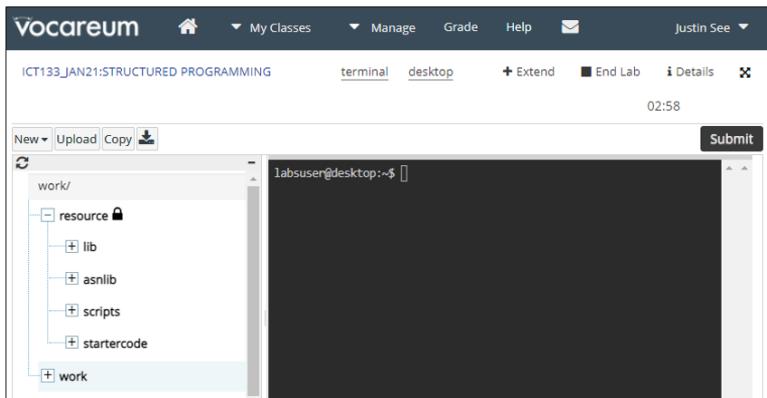
The screenshot shows an assignment dashboard for 'ICT133_JAN21:STRUCTURED PROGRAMMING'. On the left, a sidebar lists the assignment name with an orange arrow pointing to it. To the right is a main panel titled 'Details' showing 'Submission count: None' and 'Due date: Dec 31 2020 23:55:59 +08'. At the bottom of the main panel is a blue 'My Work' button.

- c. Click on **My Work** button to start your lab session. It will take approximately two to three minutes for lab initialization.



- d. When the lab session starts, you will see a WorkSpace Terminal loaded.

WorkSpace Terminal



- e. 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.

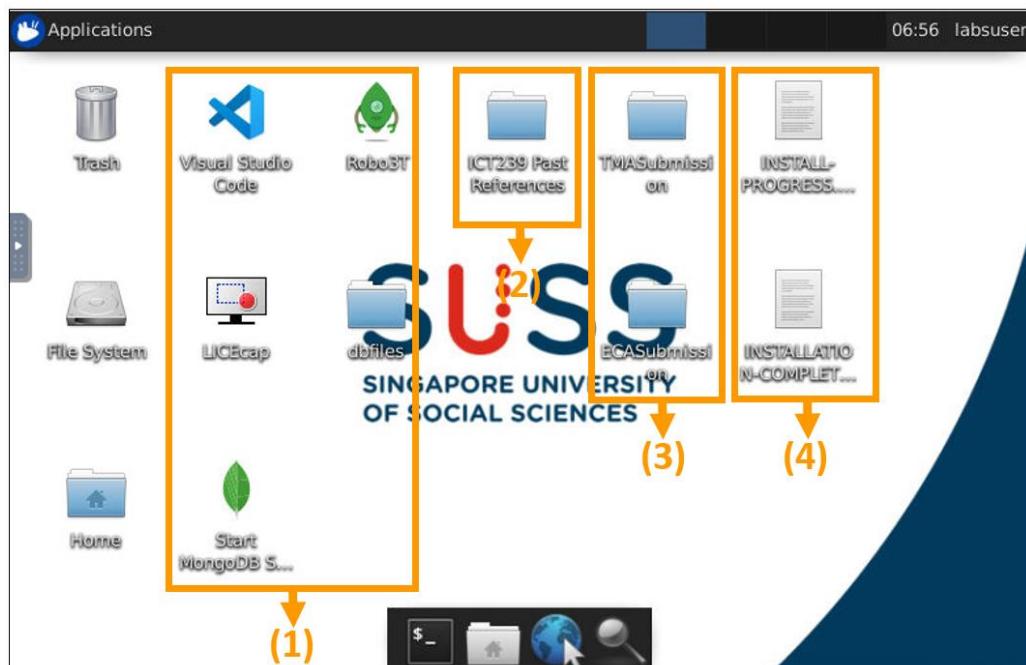


- f. You will see a separate browser tab with a noVNC logo. Next, click on **Connect** button to connect to Virtual Desktop.



- g. 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. Folders containing reference from past semesters.
3. Specific folders where you begin working your solution for graded assignments.



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

Note: At times, one or two installation may take longer than expected to complete. Please refer to [APPENDIX A-1](#) for some details of the background processes.

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

3. CONFIGURATION OF DESKTOP SCREEN

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

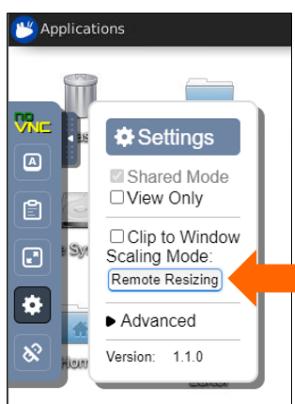
- Click the bar with an arrow to toggle the noVNC control panel.



- 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.



- f. Configure by command lines (if required)

- i. Open the Terminal and enter the following command line:

xrandr

(Note: It will list all the available resolutions as reference.)

- ii. If you need a higher resolution (for example, 1920 by 1080) the command line will be:

xrandr -s 1920x1080

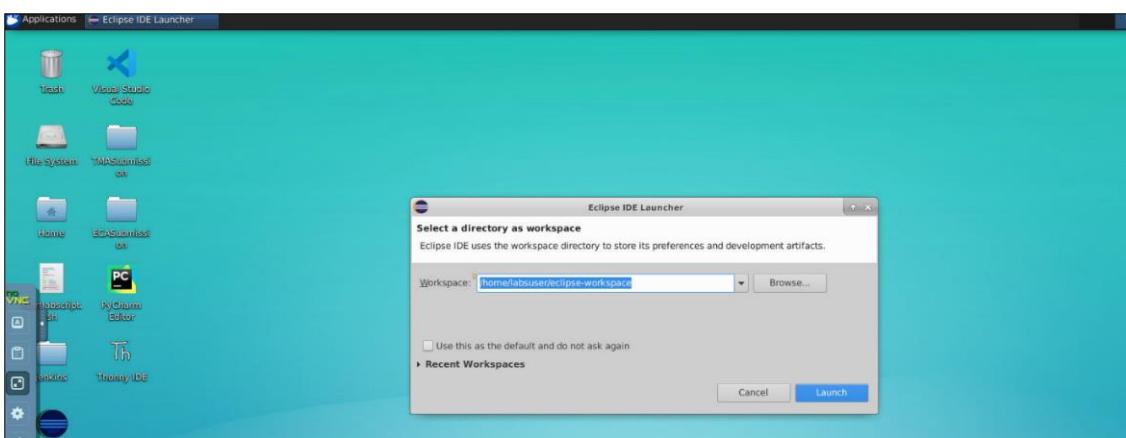
```
Terminal
File Edit View Terminal Tabs Help
labsuser@containers:~$ xrandr
Screen 0: minimum 32 x 32, current 1280 x 800, maximum 32768 x 32768
VNC-0 connected 1280x800+0+0 0mm x 0mm
    1280x800      60.00*+
    1920x1200     60.00
    1920x1080     60.00
    1600x1200     60.00
    1680x1050     60.00
    1400x1050     60.00
    1360x768      60.00
    1280x1024     60.00
    1280x960      60.00
    1280x720      60.00
    1024x768      60.00
    800x600       60.00
    640x480       60.00
labsuser@containers:~$ xrandr -s 1920x1080
labsuser@containers:~$
```

4. ECLIPSE IDE APPLICATION (if applicable to your course)

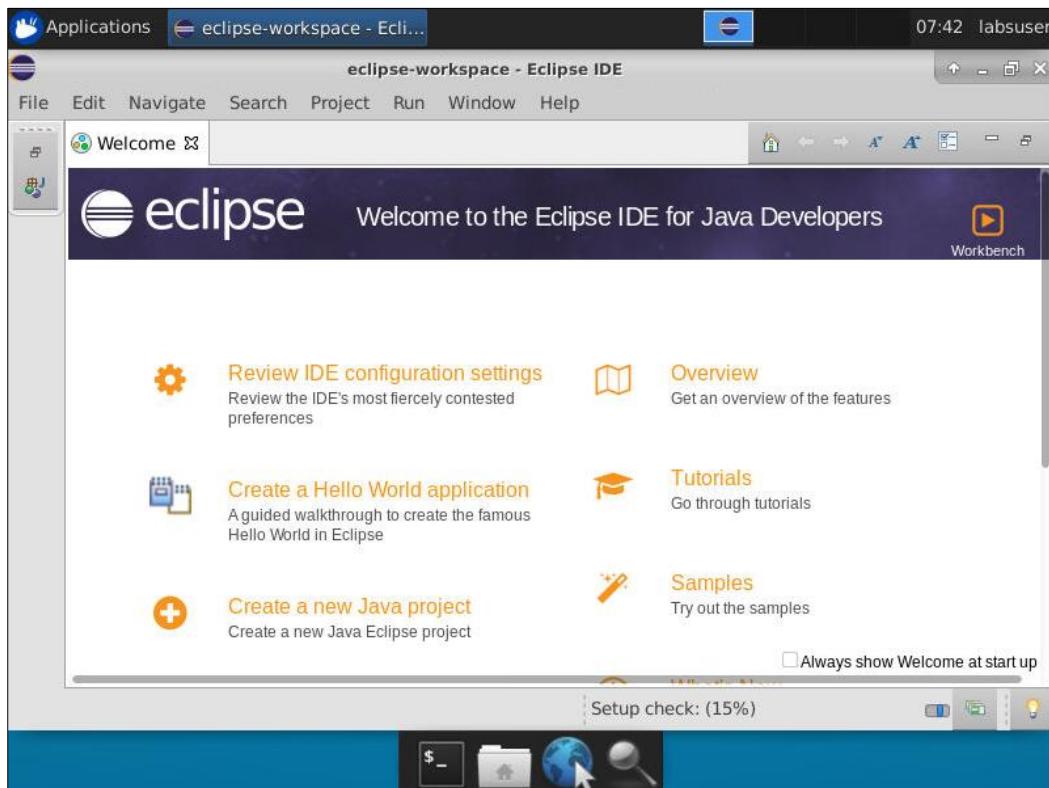
- Click on **Eclipse IDE** shortcut located on the desktop.



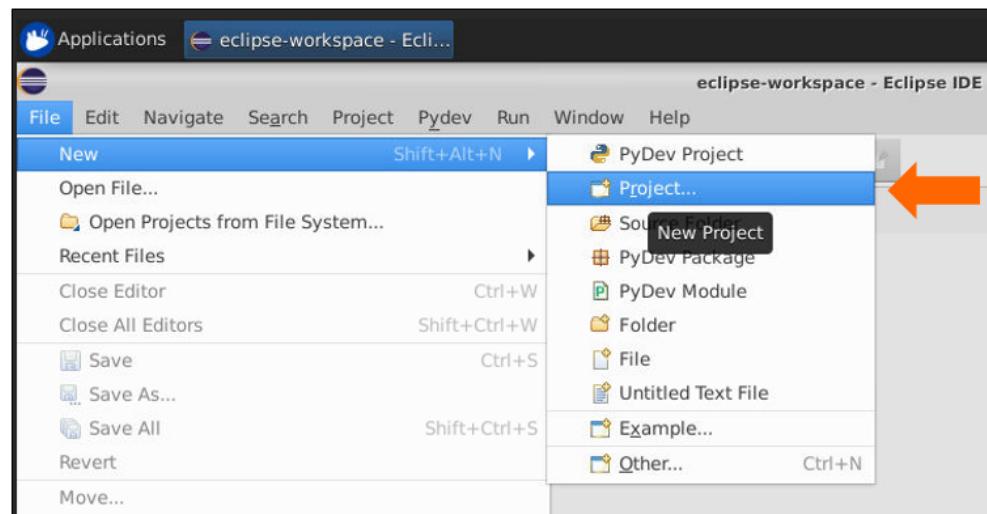
- The IDE will then ask you to set the eclipse-workspace, you may choose the one by the default suggested and launch the IDE.



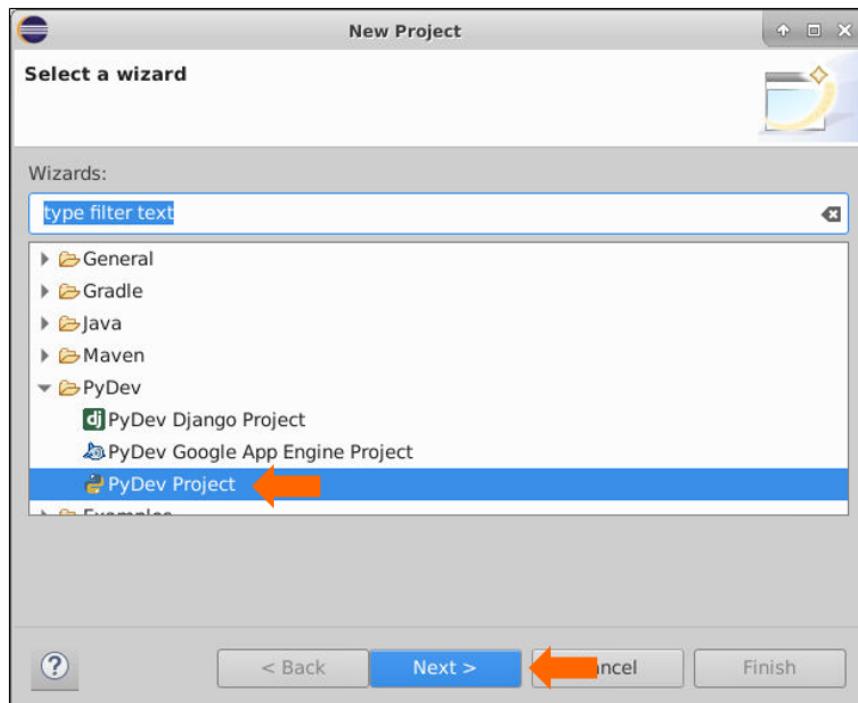
- The application displayed will be the same as screenshot below.



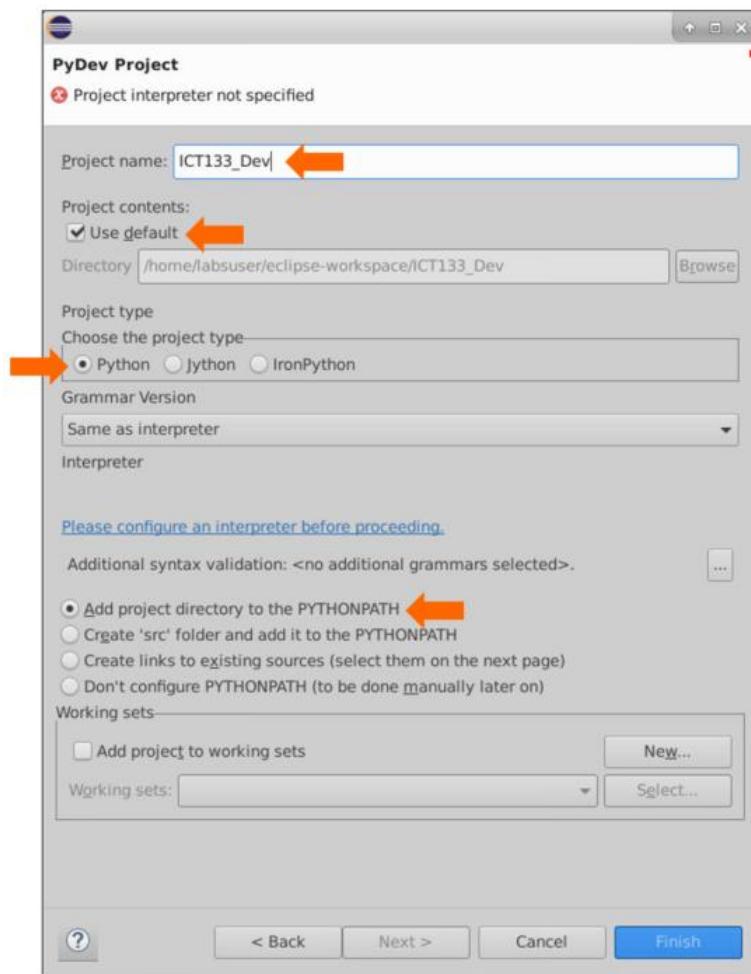
- d. Follow these instructions to configure the interpreter to Python 3.7 and above.
- Click on File menu, New and then select “Project...” option.



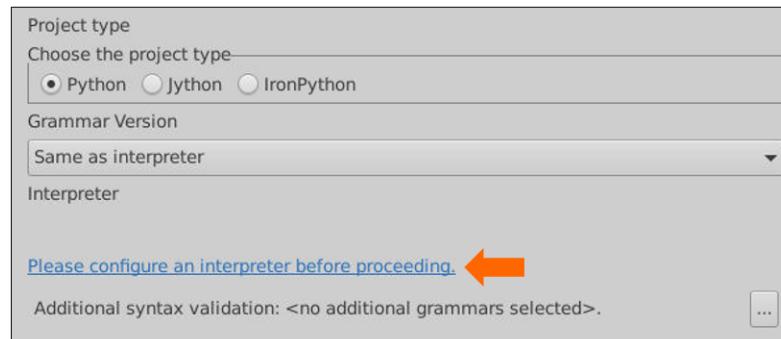
- Expand PyDev to select PyDev Project and then click on **Next** button.



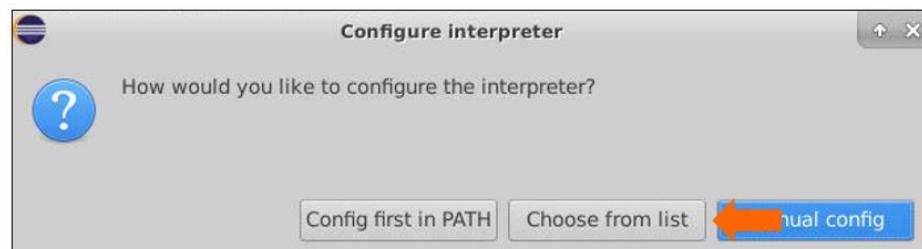
- iii. Enter a Project name of your preference and make sure those options selected are same as those arrows pointed in screenshot below.



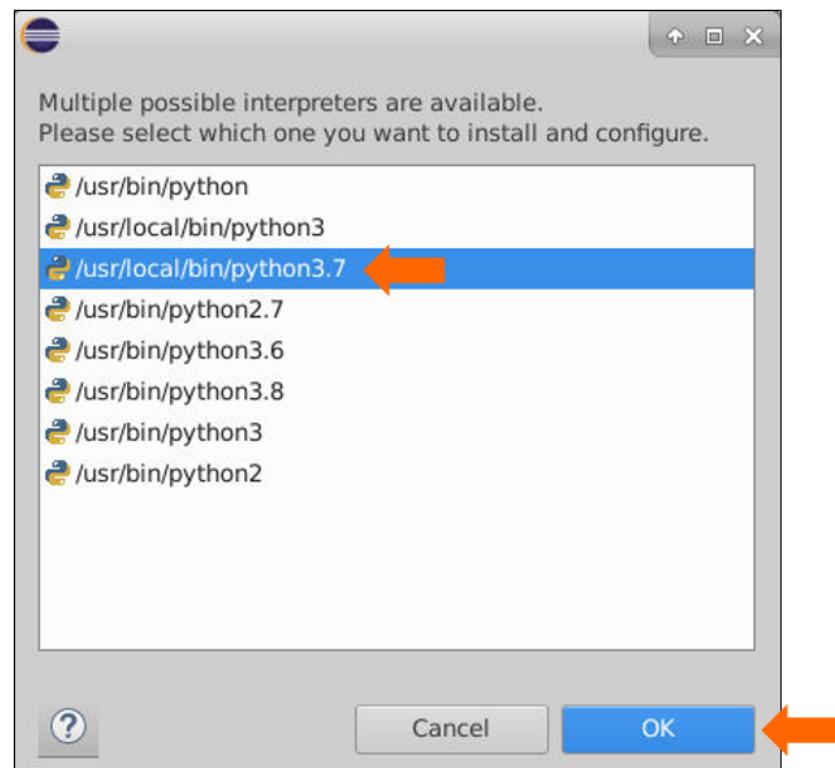
- iv. Click on **Please configure an interpreter before proceeding** link.



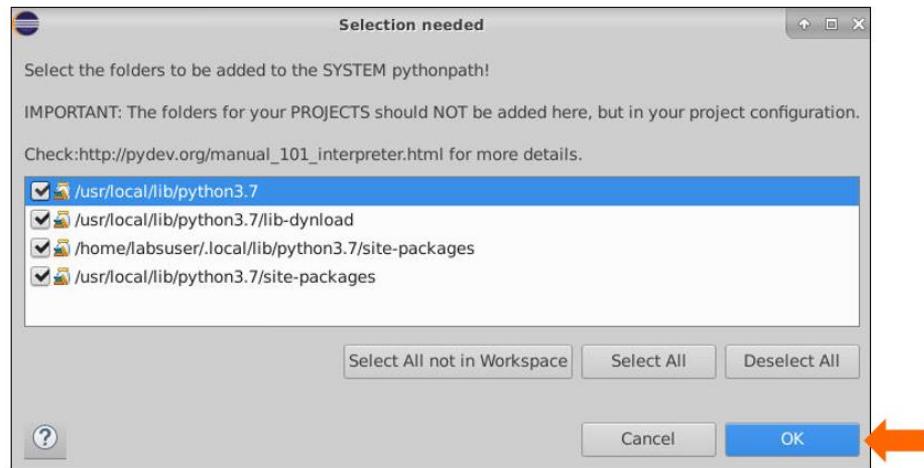
- v. Click on **Choose from list** button.



- vi. Select Python version that is 3.7 or above and then click on **OK** button.

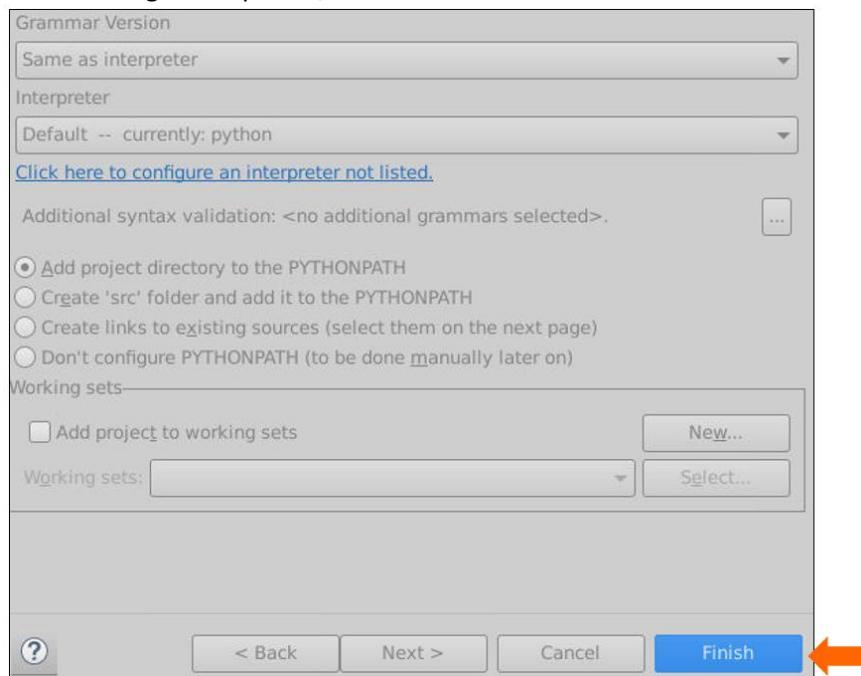


- vii. Make sure all the folders are selected and then click on **OK** button.



Note that system will take a while to load the configuration.

viii. Once loading is completed, click on **Finish** button.

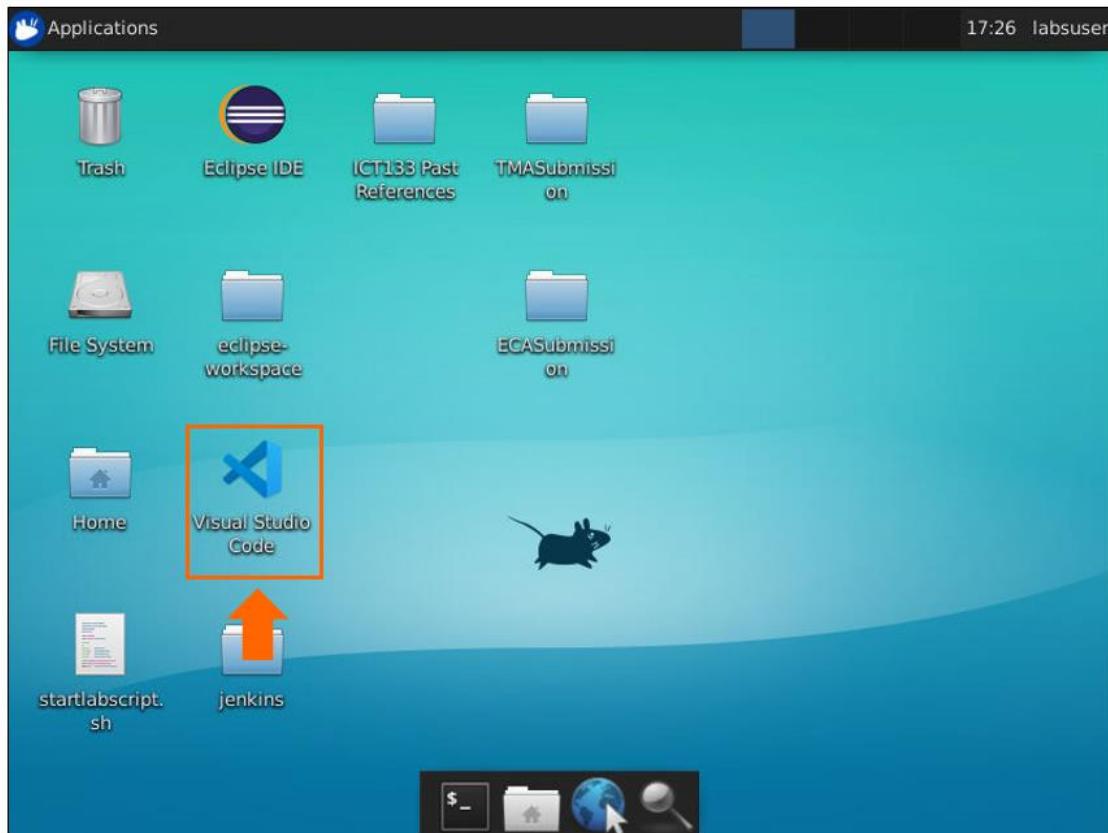


ix. Make sure that Eclipse is always switched to Python perspective before you start writing your codes.

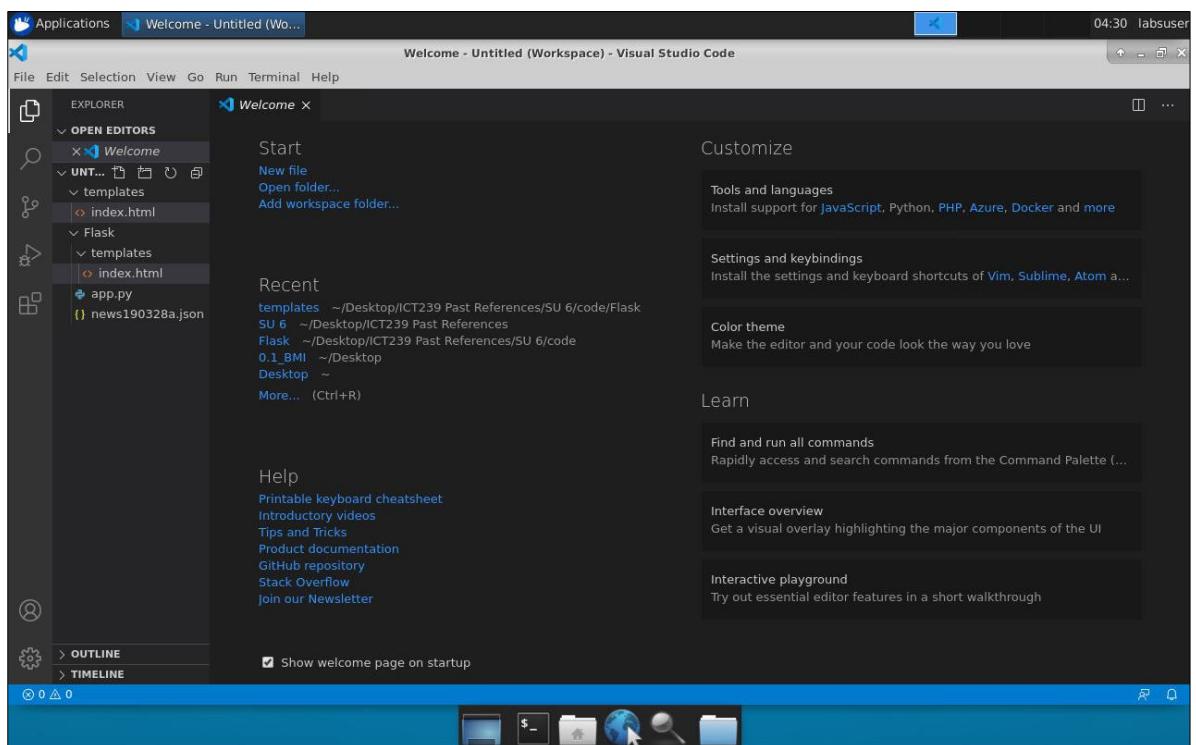


5. VISUAL STUDIO CODE APPLICATION (if applicable to your course)

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

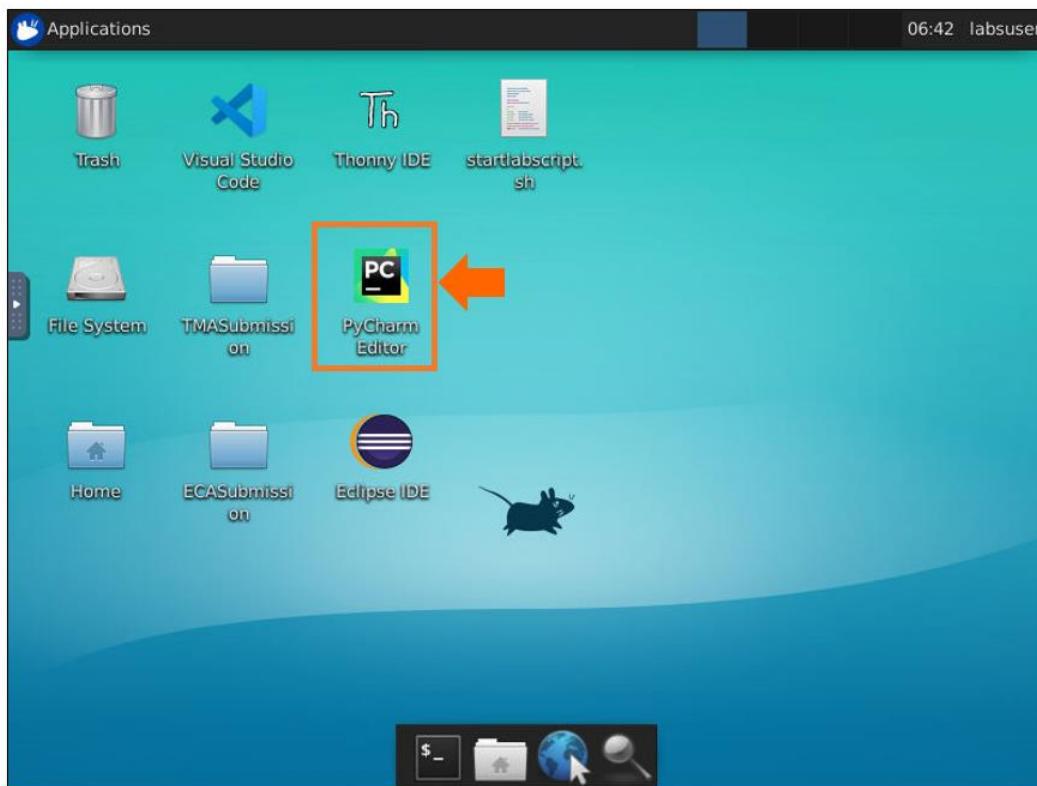


- The application displayed will be the same as screenshot below.

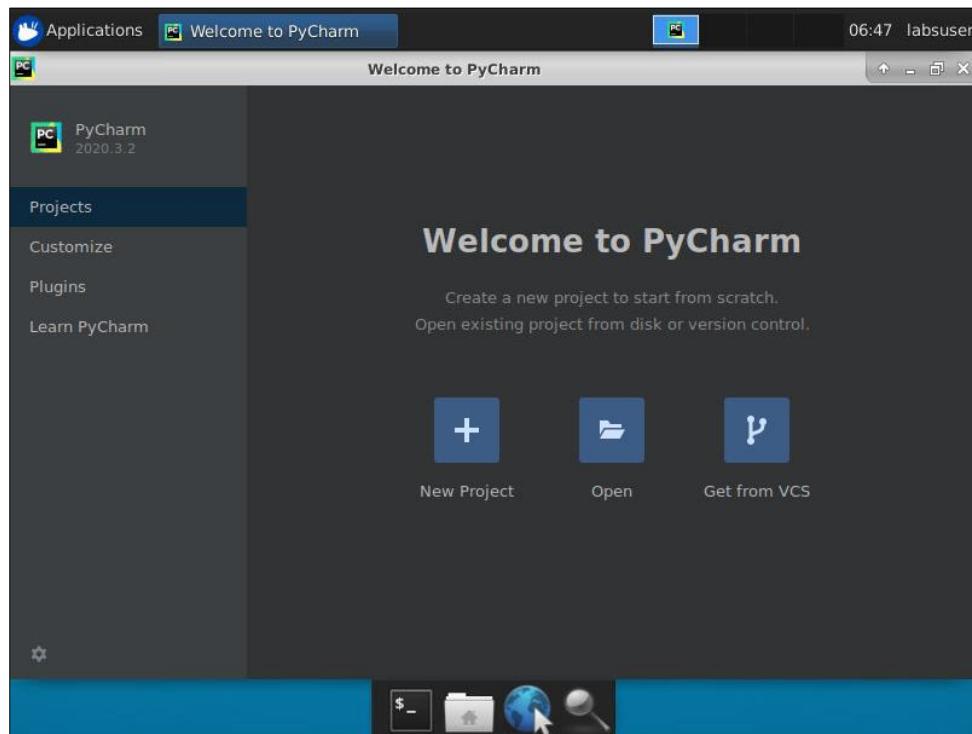


6. PYCHARM: PYTHON IDE APPLICATION (if applicable to your course)

- Click on **PyCharm Editor** shortcut located on the desktop.

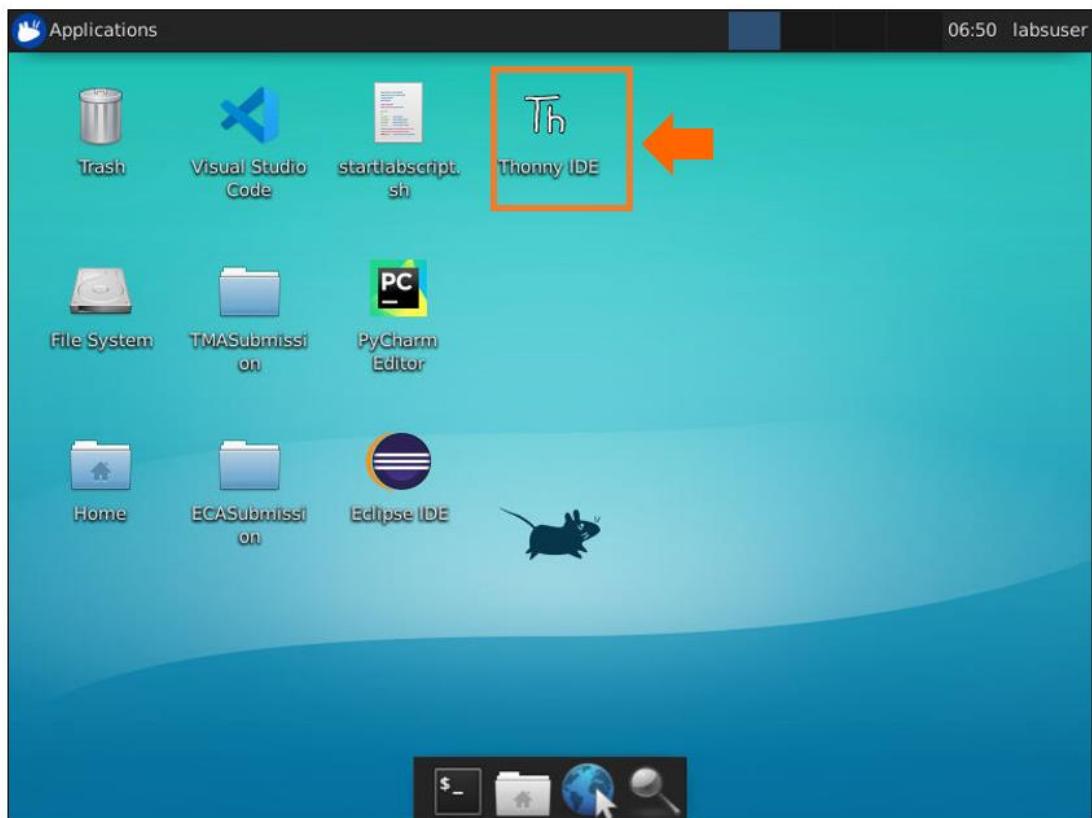


- The application displayed will be the same as the screenshot below.

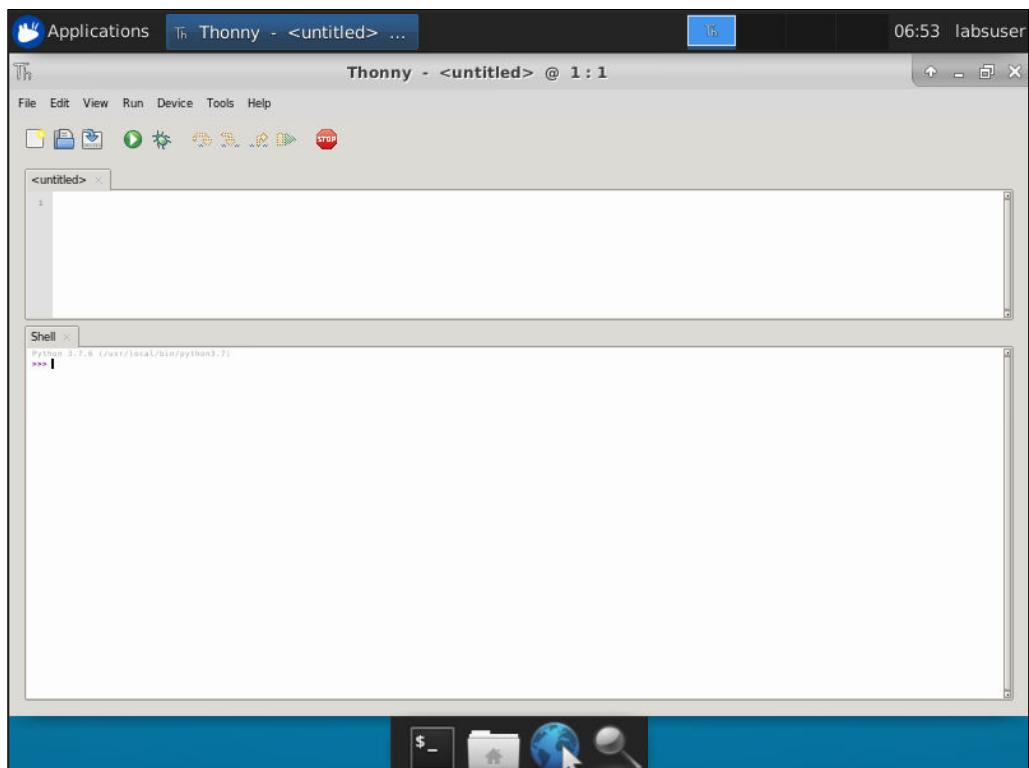


7. THONNY APPLICATION (if applicable to your course)

- Click on **Thonny IDE** shortcut located on the desktop.



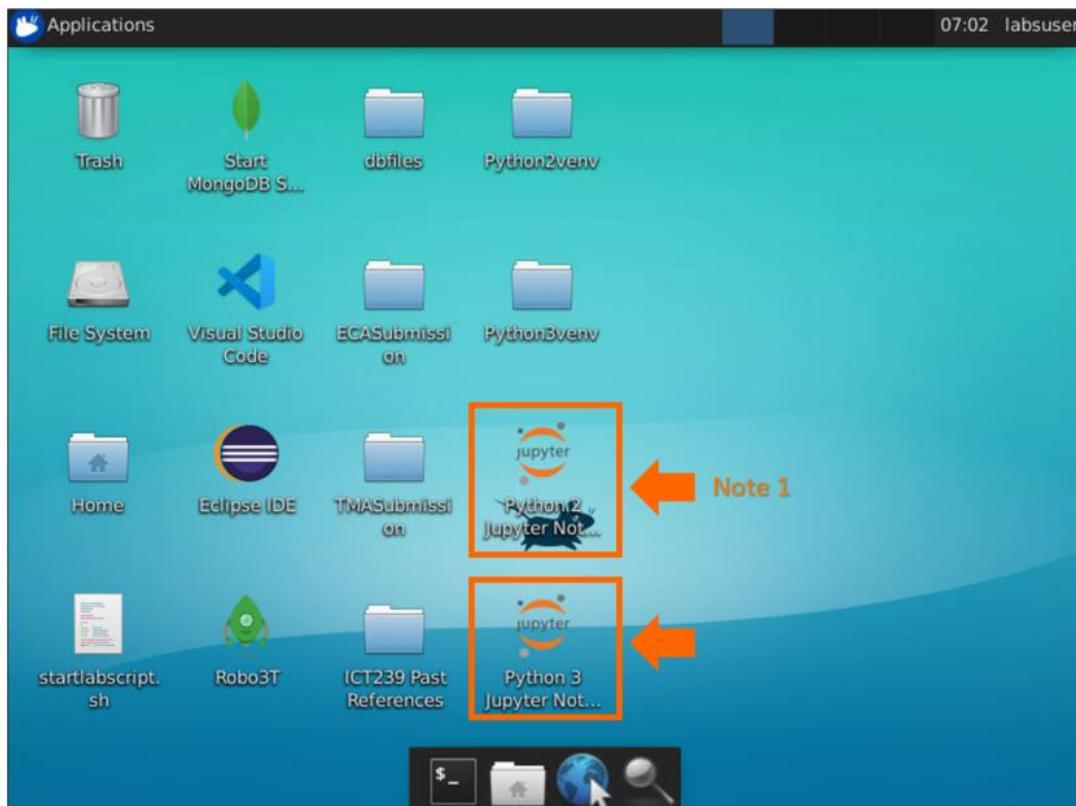
- The application displayed will be the same as the screenshot shown below.



8. JUPYTER NOTEBOOK APPLICATION (if applicable to your course)

- Click on **Python 3 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.

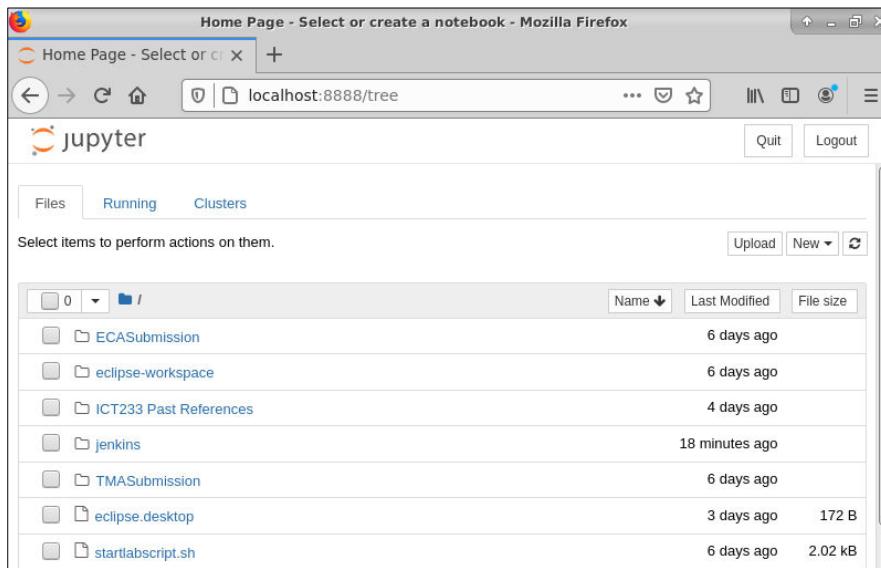


```
Terminal
File Edit View Terminal Tabs Help
labsuser@student-desktop:~$ jupyter notebook
[I 10:25:00.465 NotebookApp] Serving notebooks from local directory: /home/labsuser
[I 10:25:00.465 NotebookApp] Jupyter Notebook 6.1.4 is running at:
[I 10:25:00.466 NotebookApp] http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
[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]

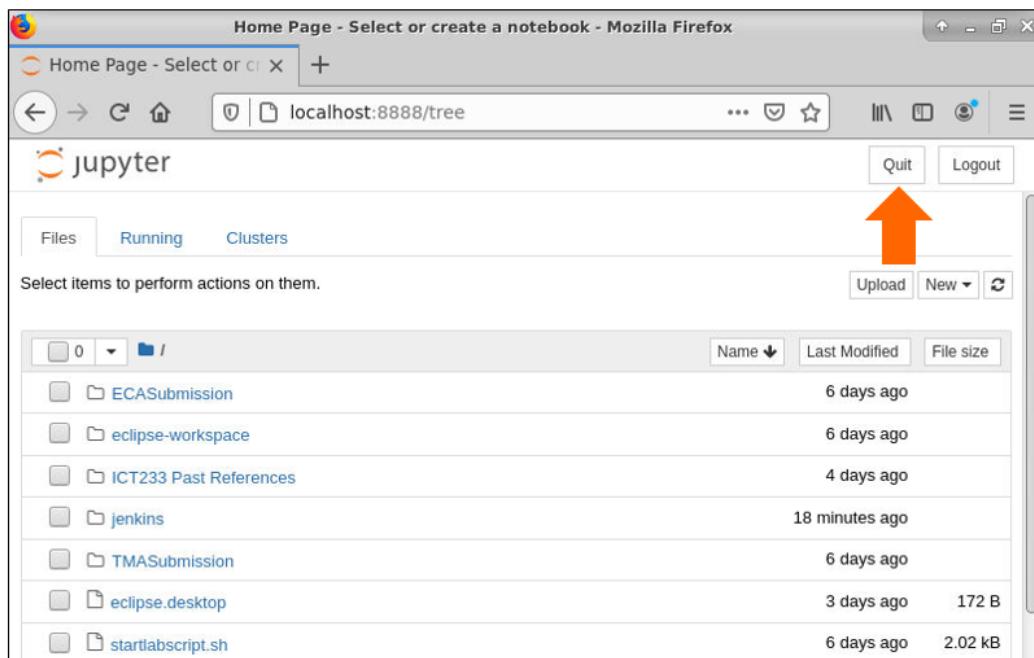
    To access the notebook, open this file in a browser:
        file:///home/labsuser/.local/share/jupyter/runtime/nbserver-1416-open.html
    Or copy and paste one of these URLs:
        http://localhost:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617
        or http://127.0.0.1:8888/?token=f4420d43486a3490d6bd1aac822d1ced7b434dfdf0a58617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

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

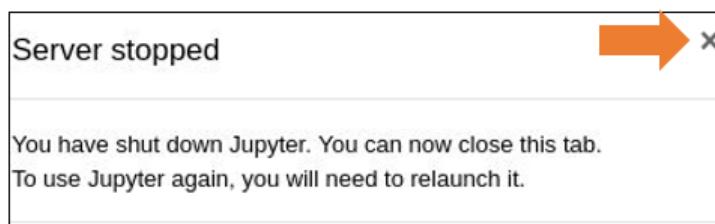
- b. The application displayed will be the same as screenshot below.



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

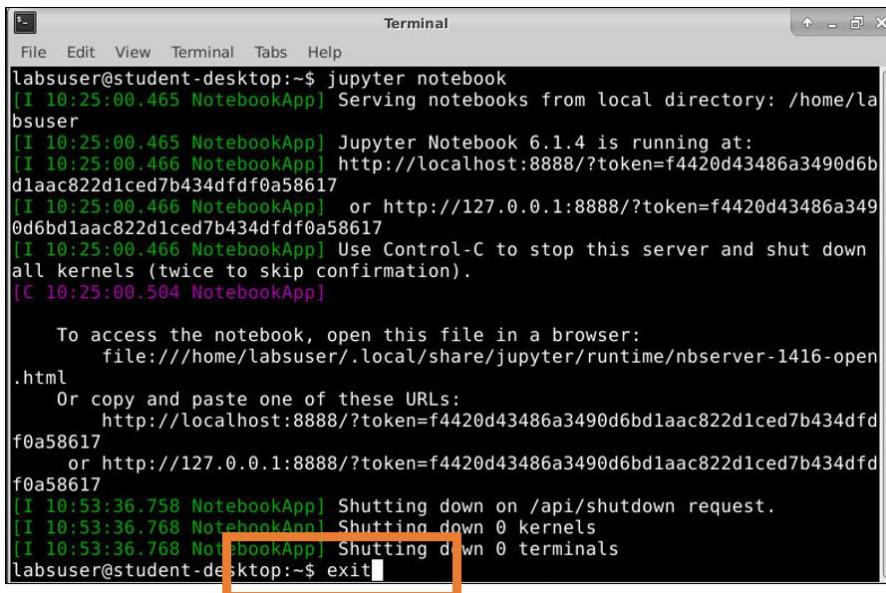


- d. A shut down message will be prompted. Then, click the **cross** to end this message.



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.

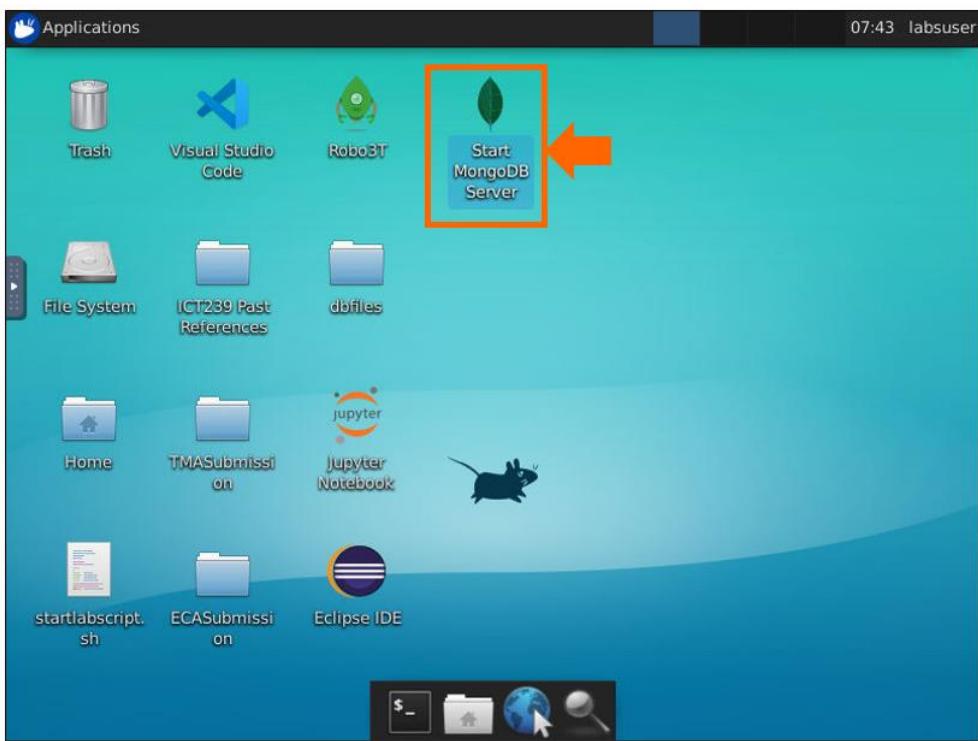


```
Terminal
File Edit View Terminal Tabs Help
labsuser@student-desktop:~$ jupyter notebook
[I 10:25:00.465 NotebookApp] Serving notebooks from local directory: /home/labsuser
[I 10:25:00.465 NotebookApp] Jupyter Notebook 6.1.4 is running at:
[I 10:25:00.466 NotebookApp] http://localhost:8888/?token=f4420d43486a3490d6bdlaac822d1ced7b434dfdf0a58617
[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
[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
```

9. ROBO3T APPLICATION AND MONGODB CONNECTION (if applicable to your course)

- a. Click on **Start MongoDB Server** shortcut located on the desktop to start MongoDB server.



- b. Please note that the following:

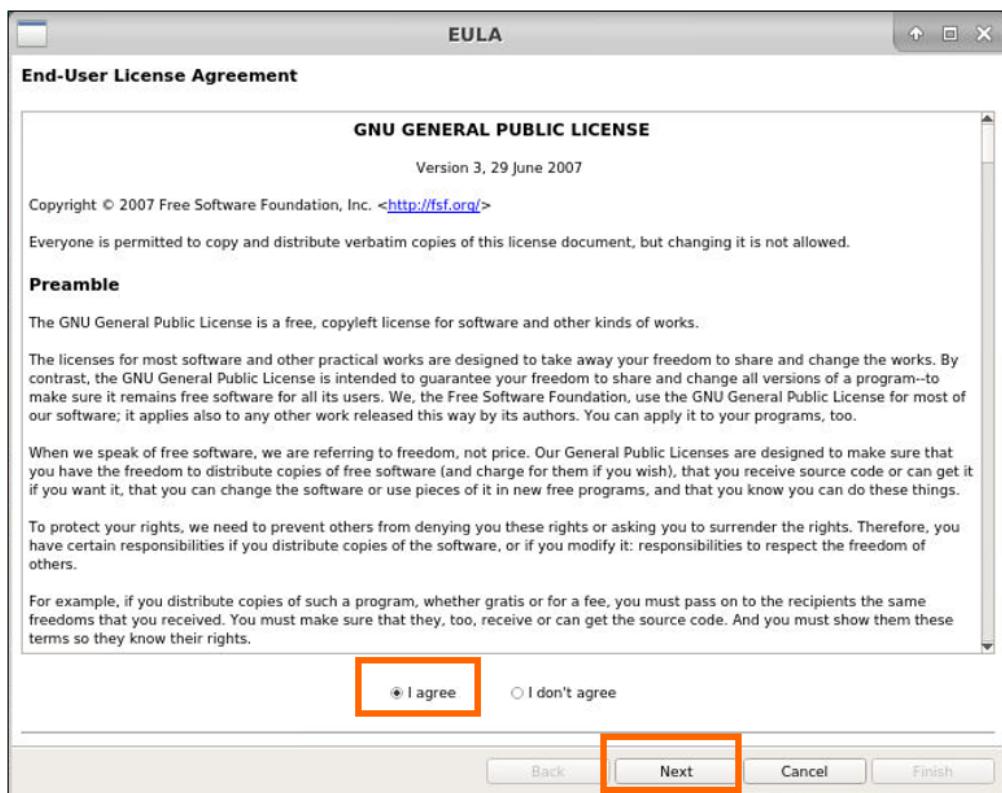
- MongoDB server will start running in the background.
- Student's data in the database will be deposited under dbfiles folder located on the desktop.³

³ Do NOT delete or modify this folder as it is part of submission requirement.

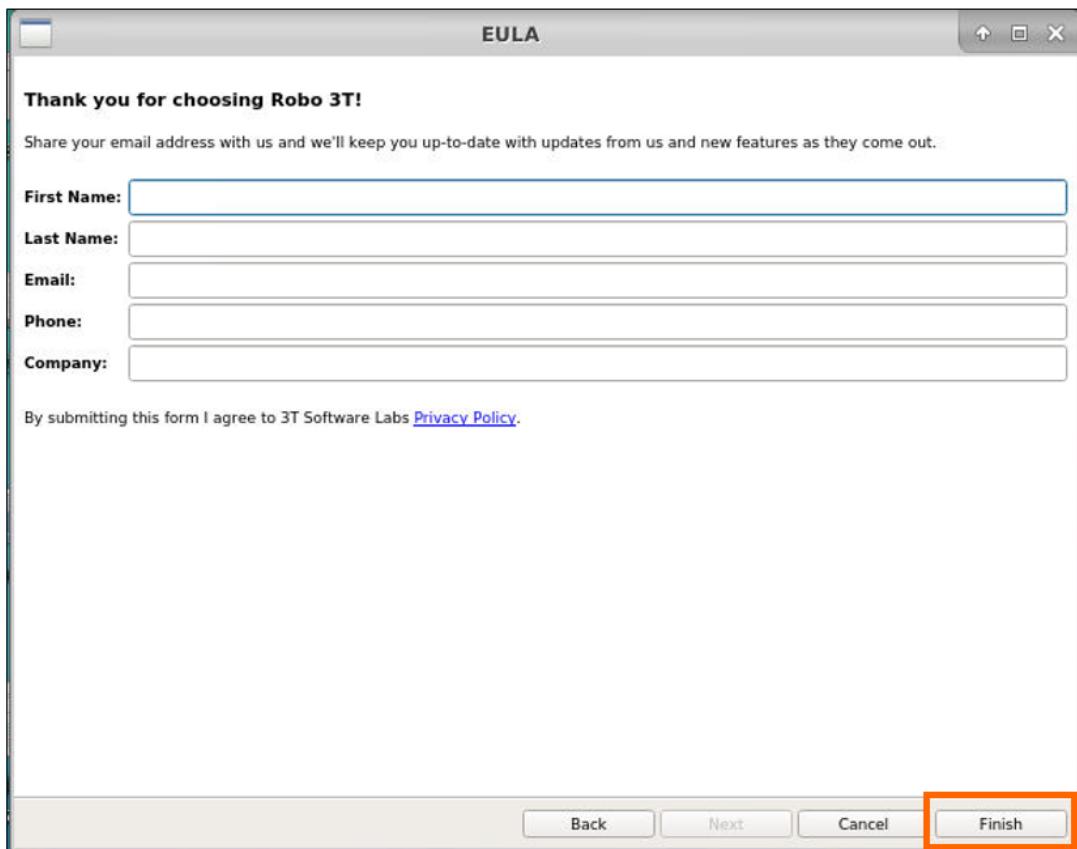
- c. Click on **Robo3T** shortcut located on the desktop.



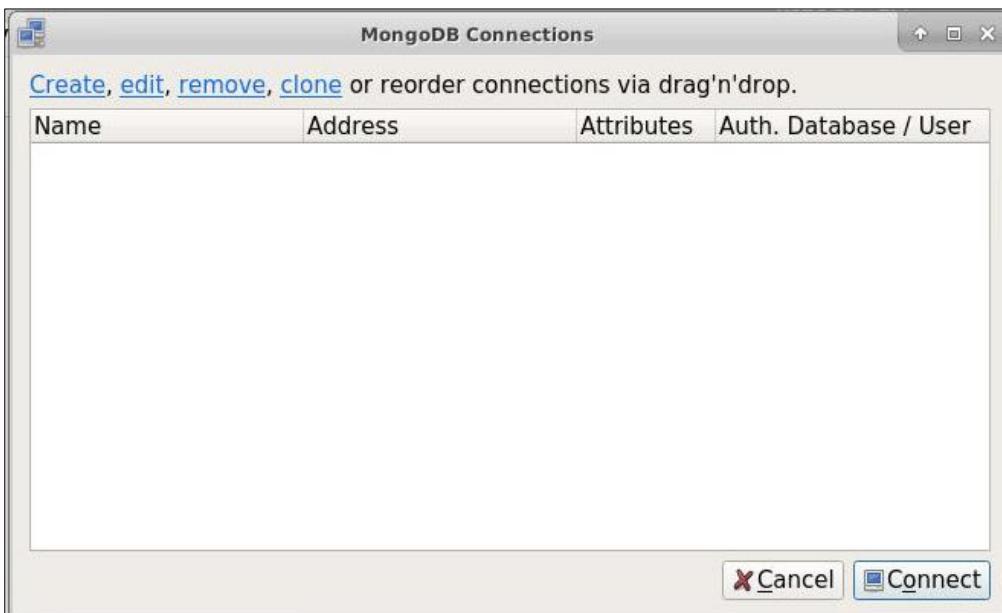
- d. On the End-User License Agreement box, check “I Agree” and click on the **Next** button. This message box will appear for the first launch of the application.



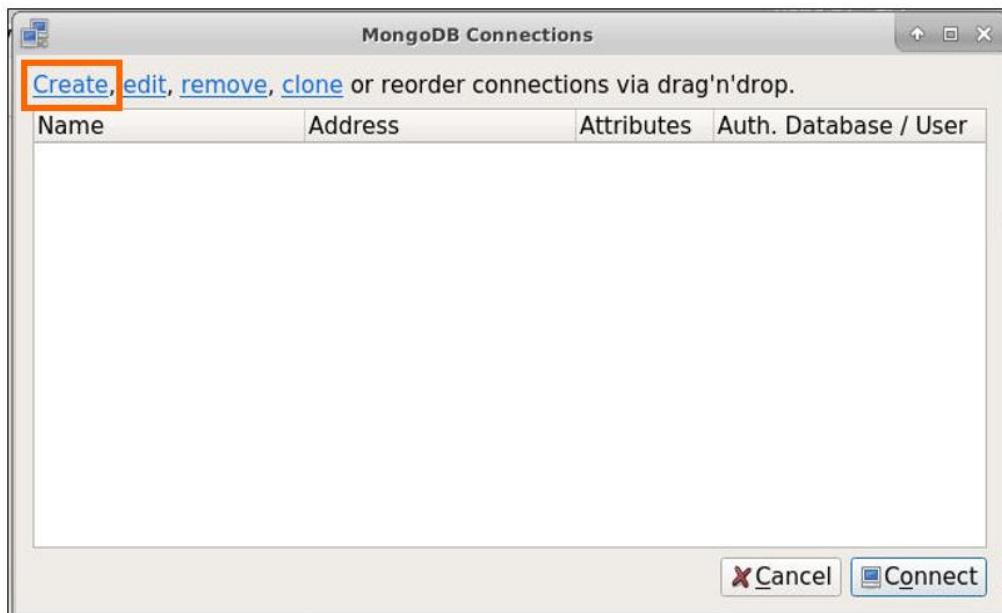
- e. Click on the **Finish** button.



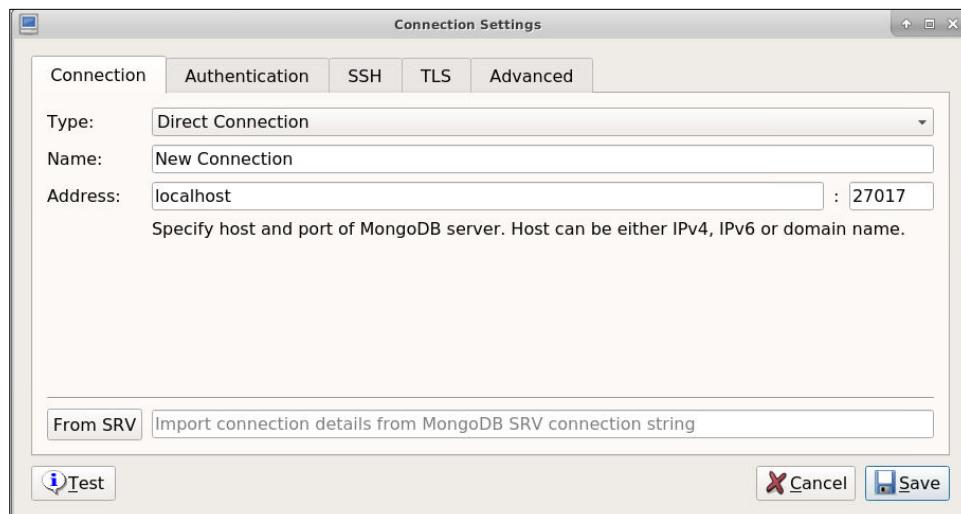
- f. By default, a MongoDB Connections box will appear.



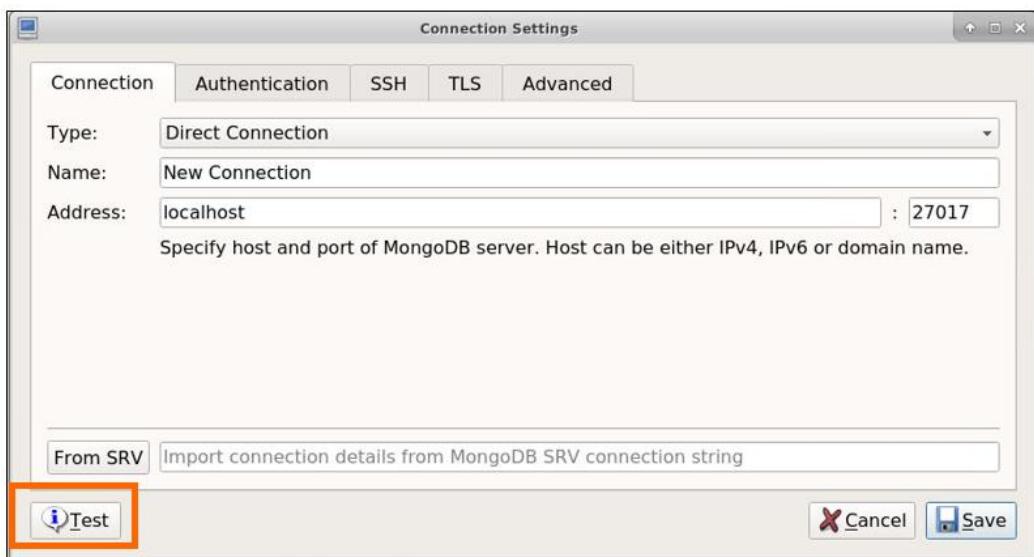
- g. Click on the **Create** link to create a new connection.



- h. In the Connections Setting box, please make sure the following information below is entered into the corresponding fields:
- Name: (Choose a name of your preference)
 - Address: localhost
 - Port 27017



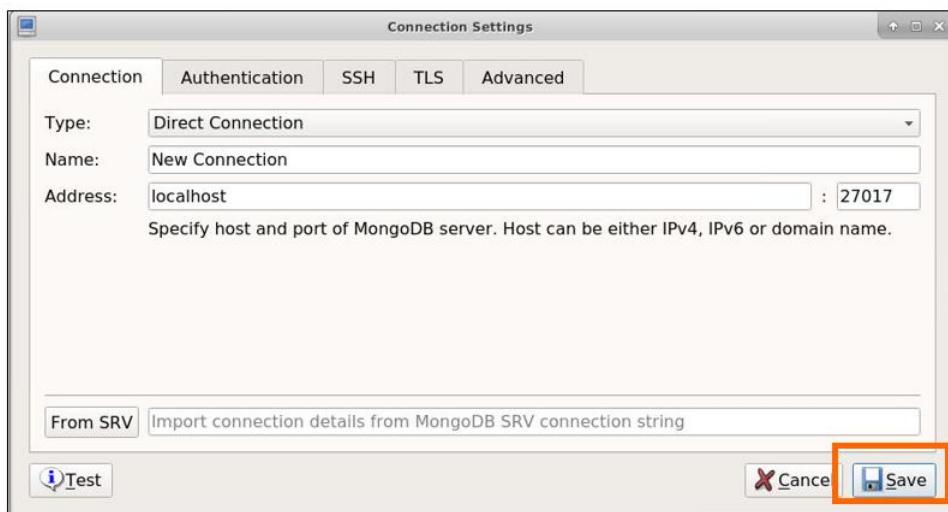
- i. Click the **Test** button located at the bottom left of the box to test the connection.



- j. If the test is successful, you will receive a message which is shown below.⁴

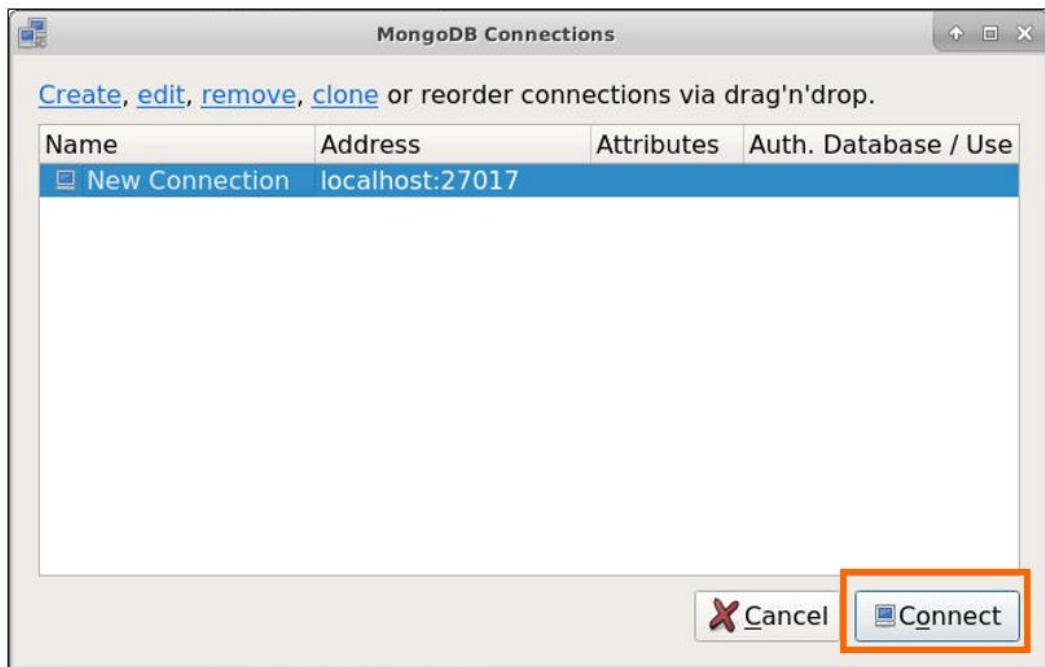


- k. Click on **Save** button to save the settings.

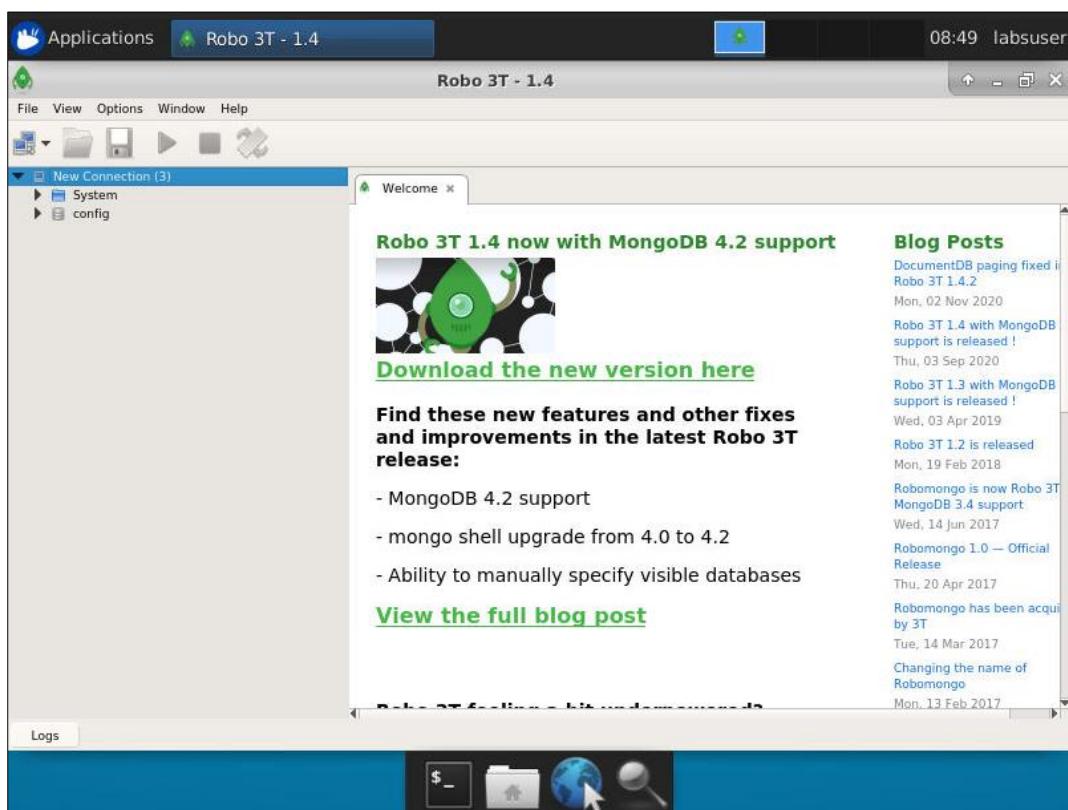


- l. Click on **Connect** button to connect to the database.

⁴ If you have not started MongoDB server, there will be error. For instruction to start server, refer to Step 9a.



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

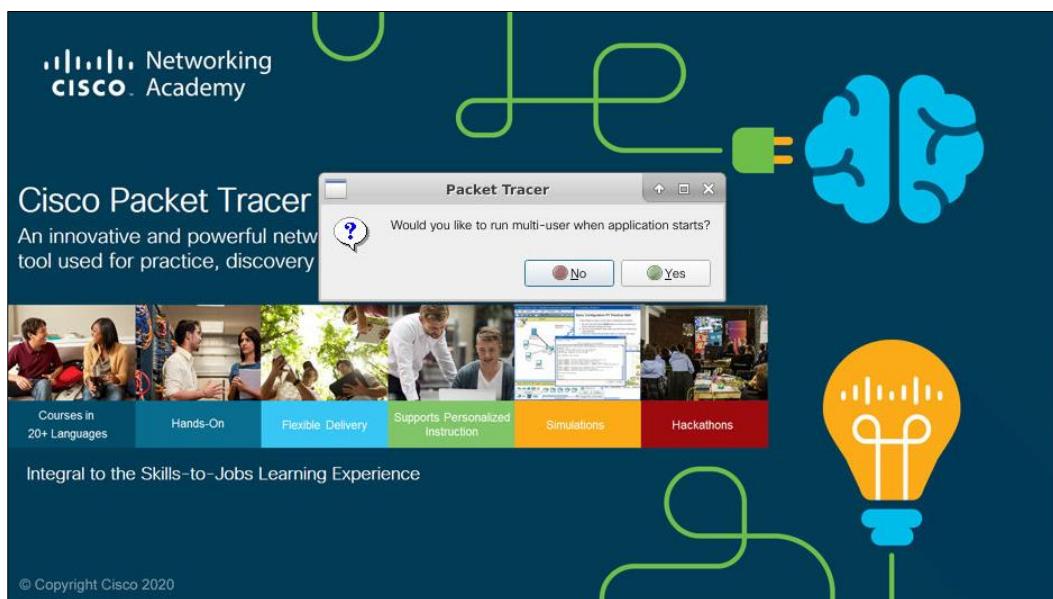


10. CISCO PACKET TRACER (if applicable to your course)

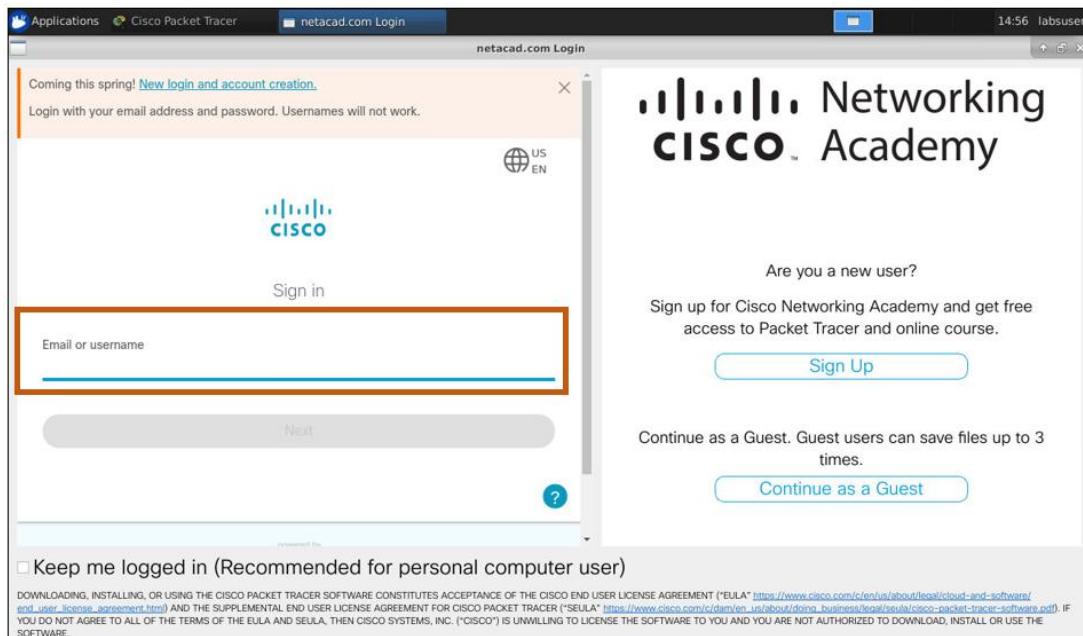
- Click on **Cisco Packet Tracer** shortcut located on the desktop.



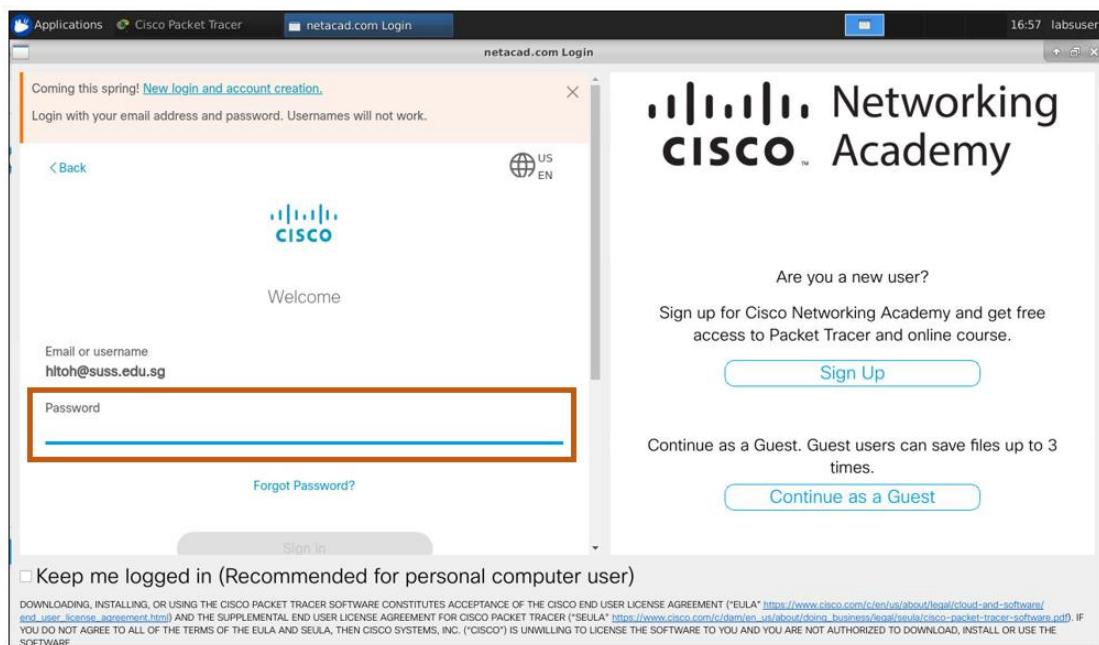
- Click **No** on the Packet Tracer prompt box.



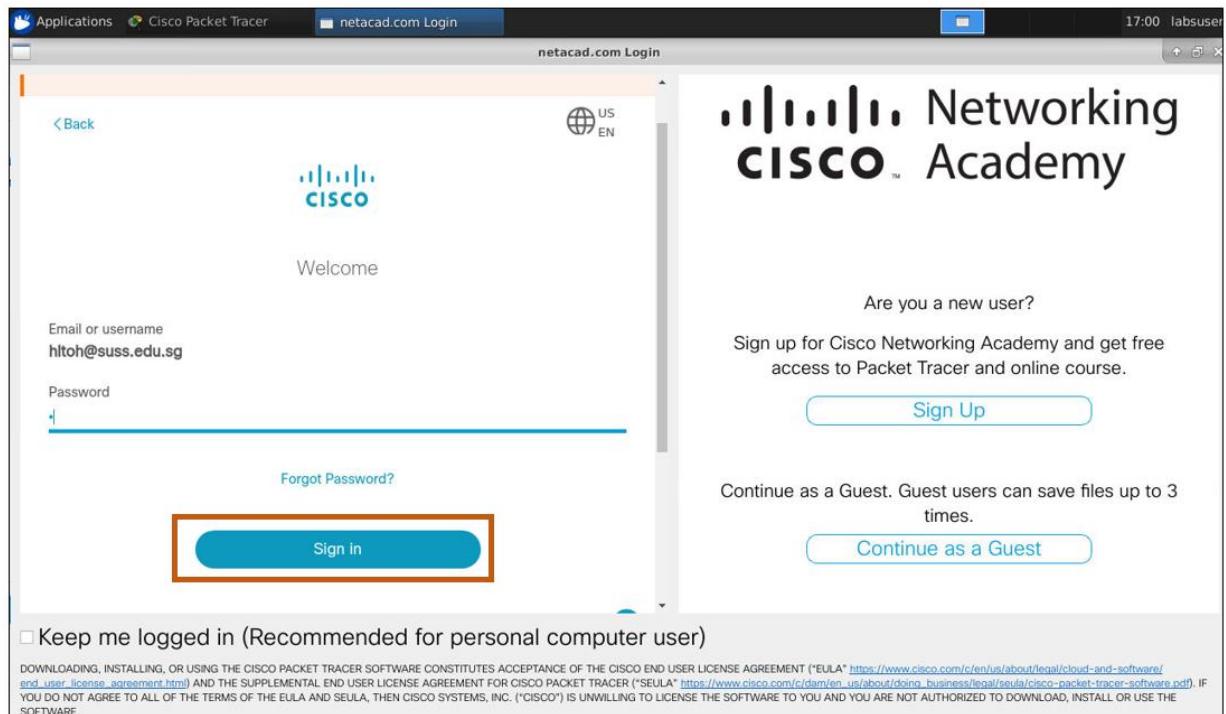
- Login with your Cisco Network Academy credentials. Key in your email first.



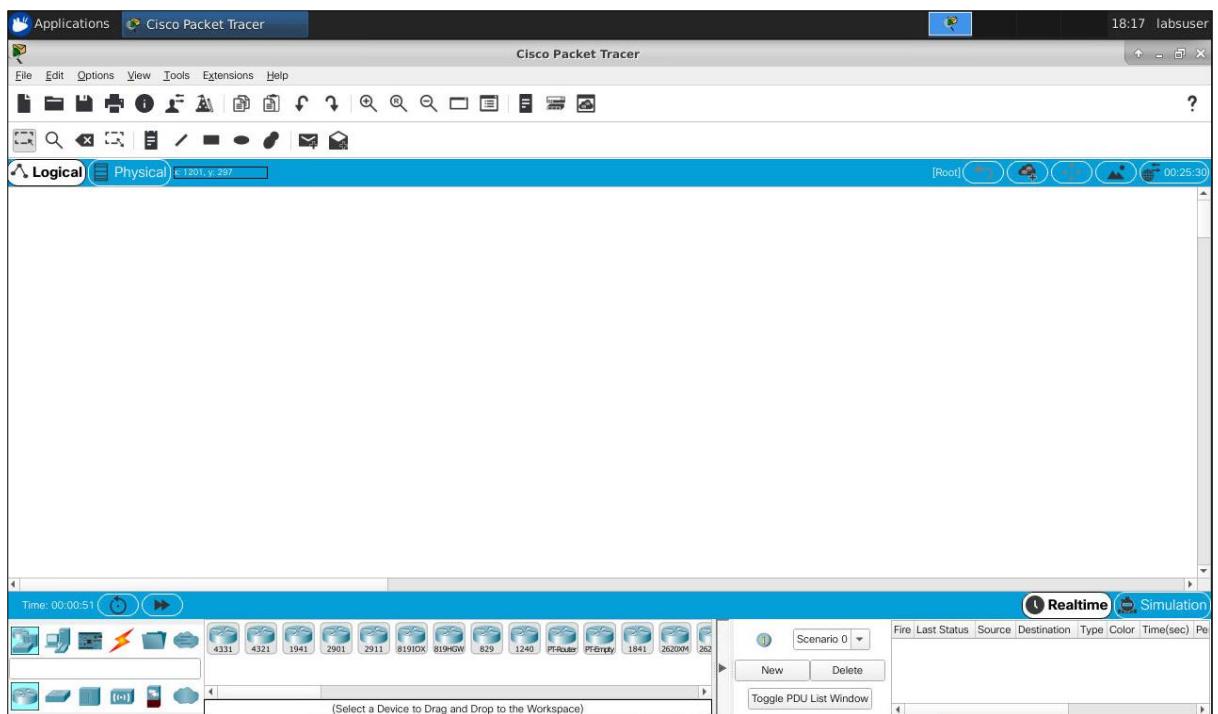
- d) Key in your password.



- e) Click on the Sign in button.

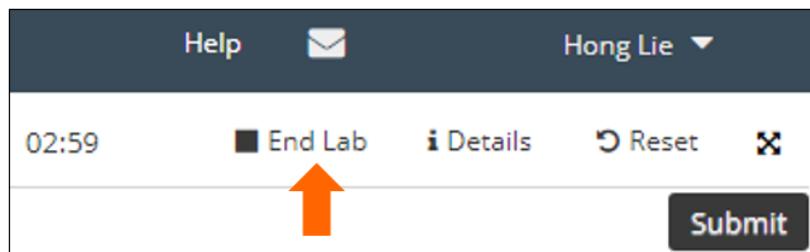


- f) The application displayed will be the same as the screenshot below.



11. END LAB SESSION

Navigate to WorkSpace Terminal and click on **End Lab** link to end your lab session as shown in the screenshot below.⁵

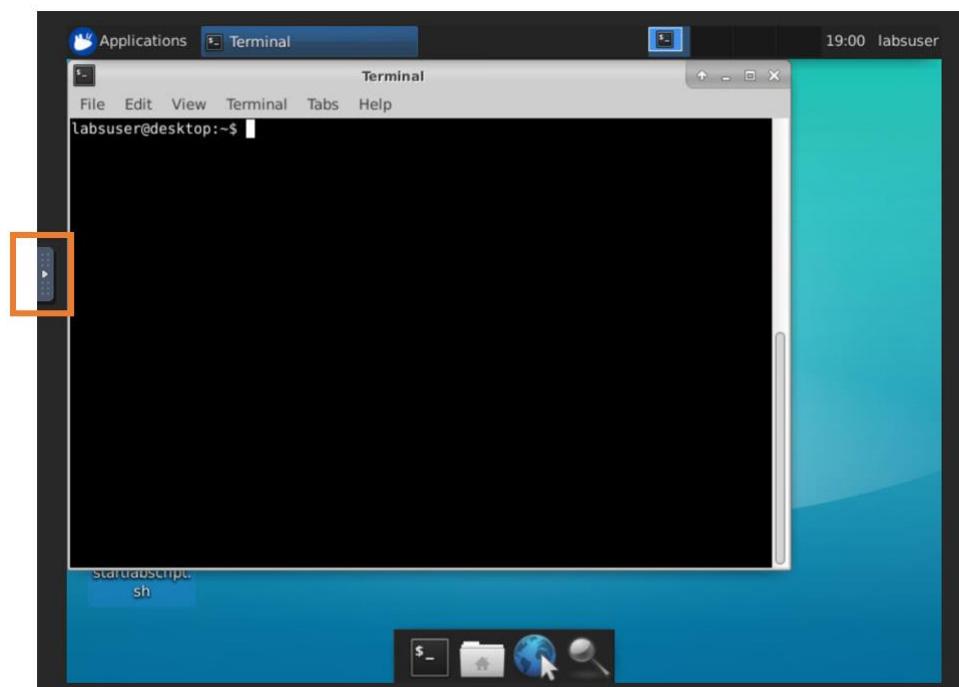


12. COPY/PASTE TEXT FROM LOCAL DESKTOP TO VIRTUAL DESKTOP

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

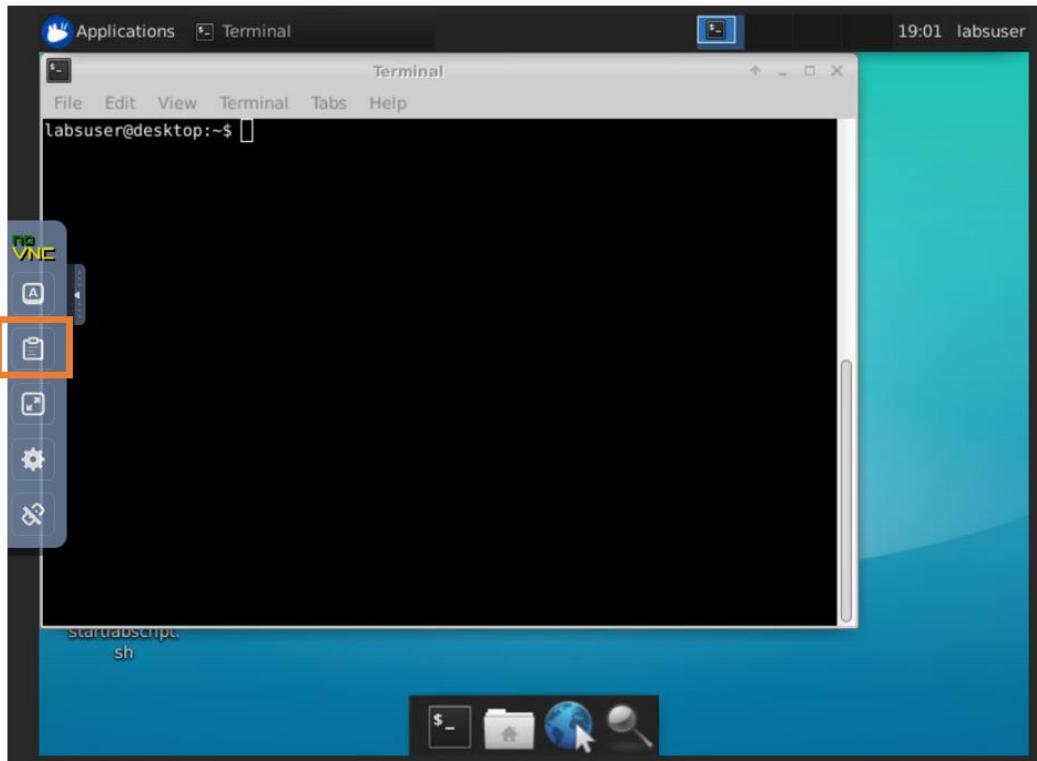


- Navigate to your virtual desktop and click the bar with an arrow to toggle the noVNC control panel.

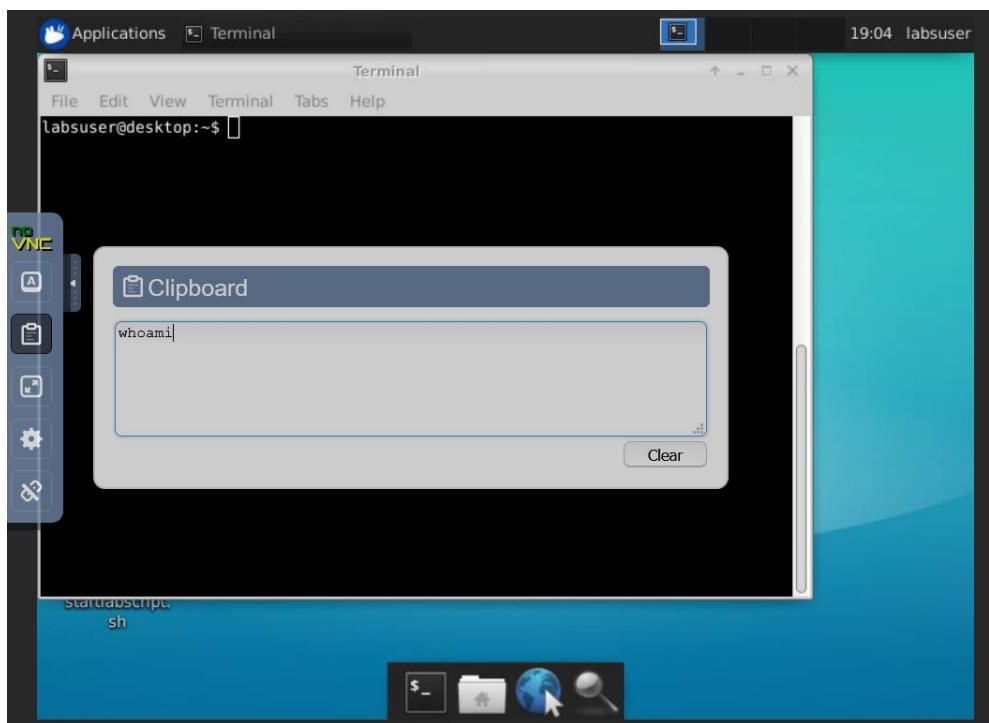


⁵ Do remember to save your work first before ending the lab session.

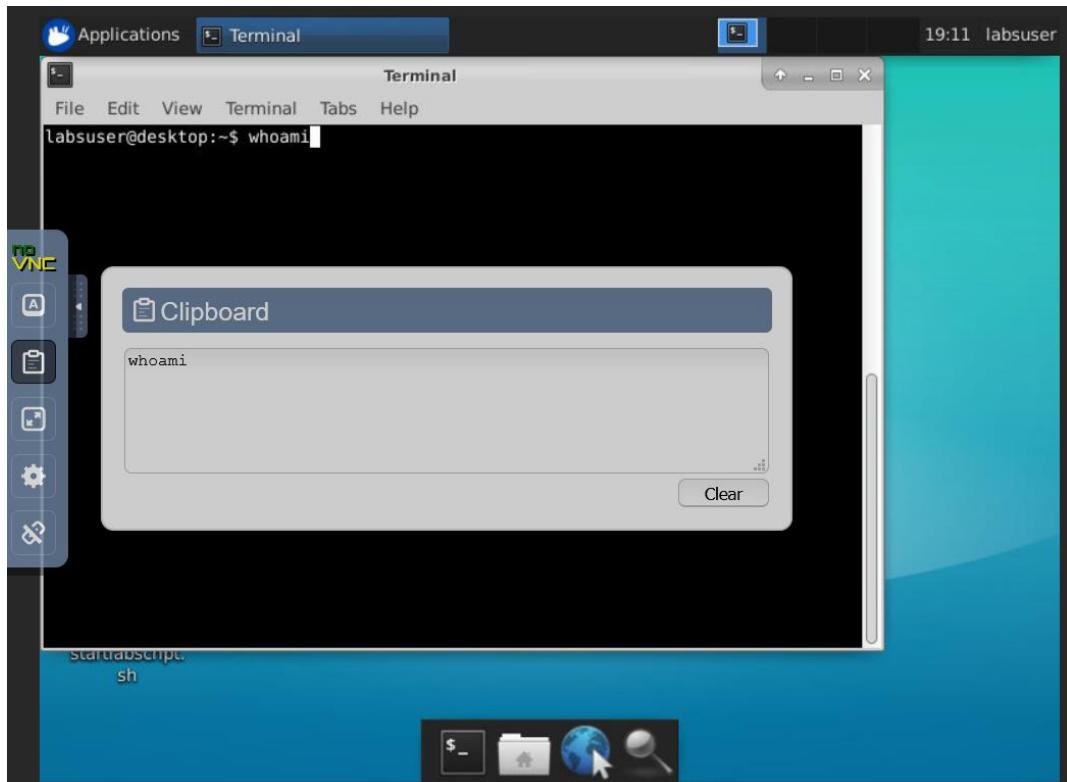
- c. Click the **Clipboard** icon on the noVNC control panel.



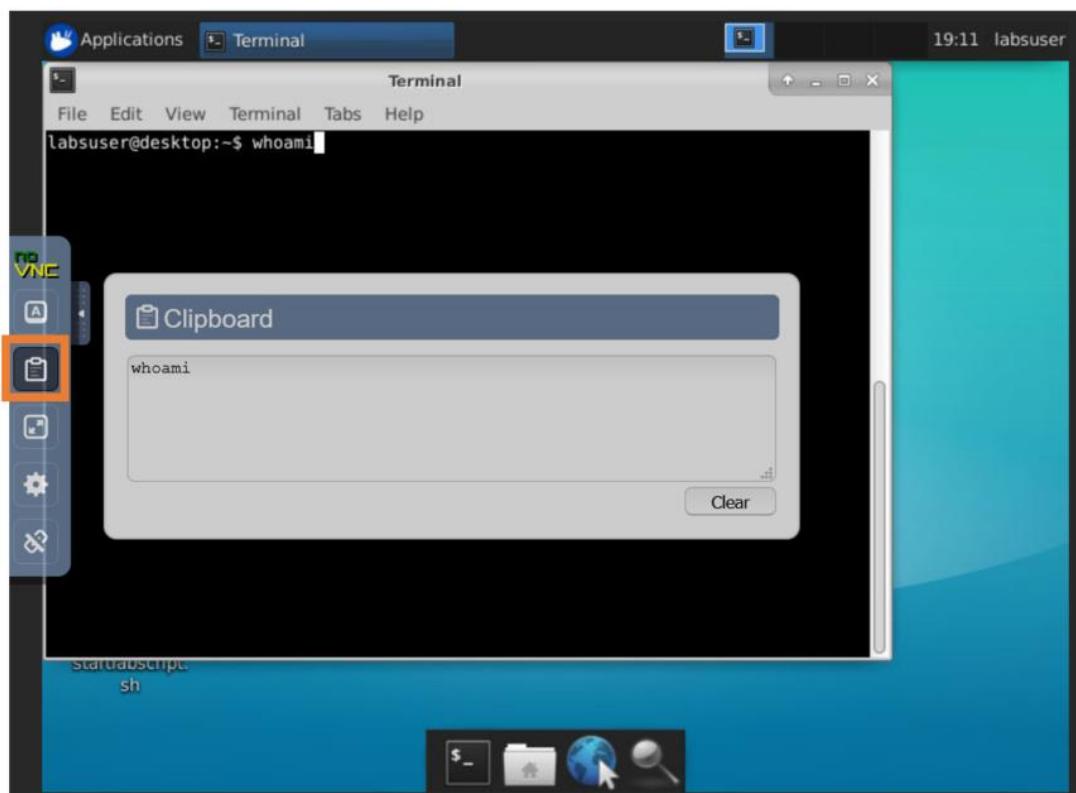
- d. Paste the text to be copied on the Clipboard.



- 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.

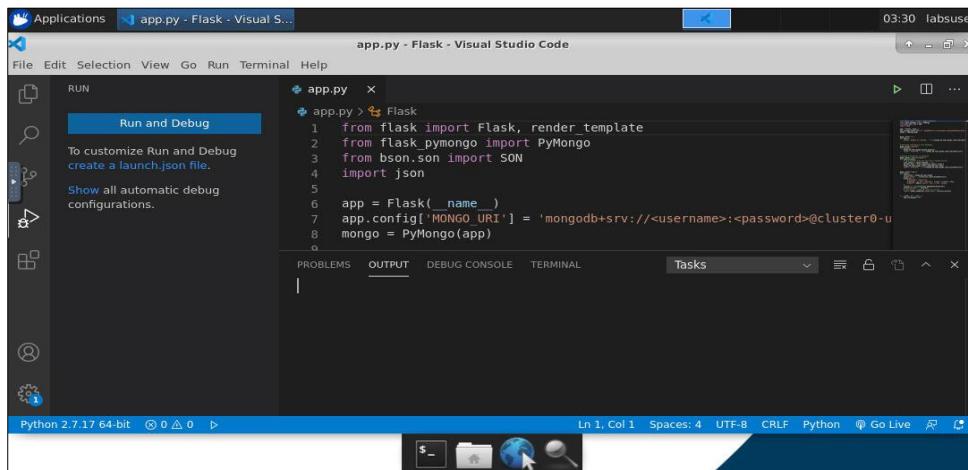


- f. Click the **Clipboard** icon on the noVNC control panel to close the Clipboard.



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

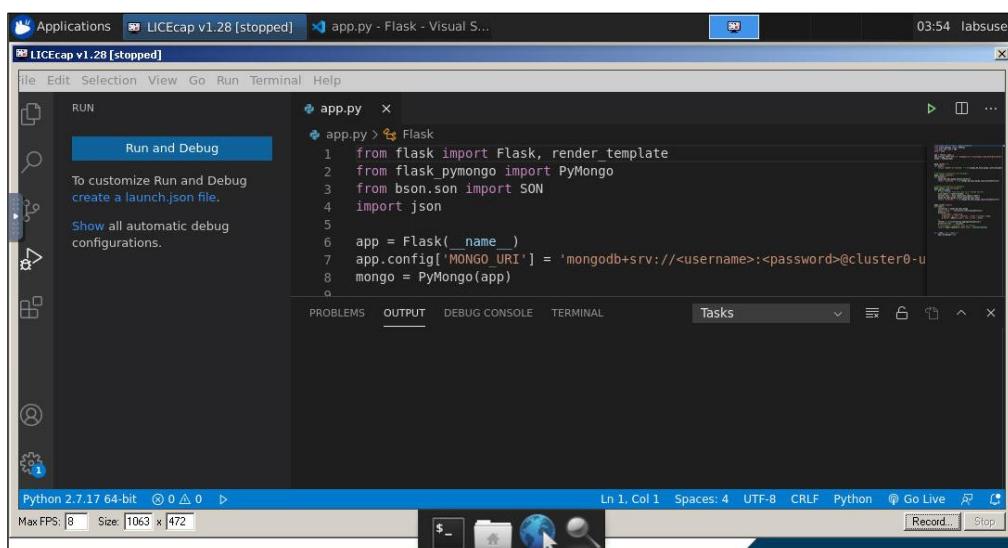
- Open the program that needs to be recorded.



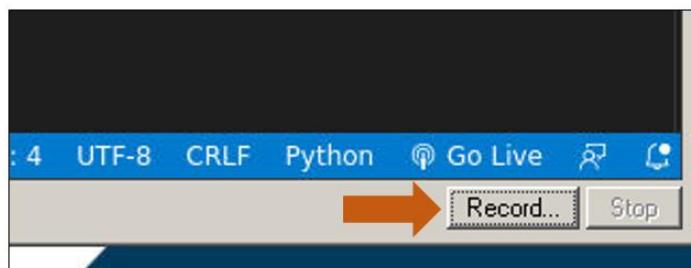
- Navigate to desktop and click on **LICEcap** shortcut.



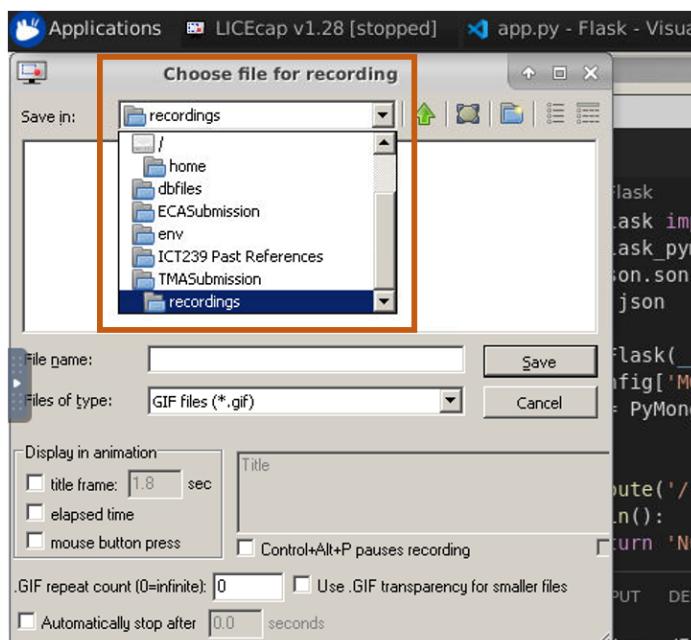
- Position the LICEcap frame to cover the entire area of screen that needs to be recorded.



- d. Click on **Record** button to start recording.



- e. Save this file under the **recordings⁶** folder.

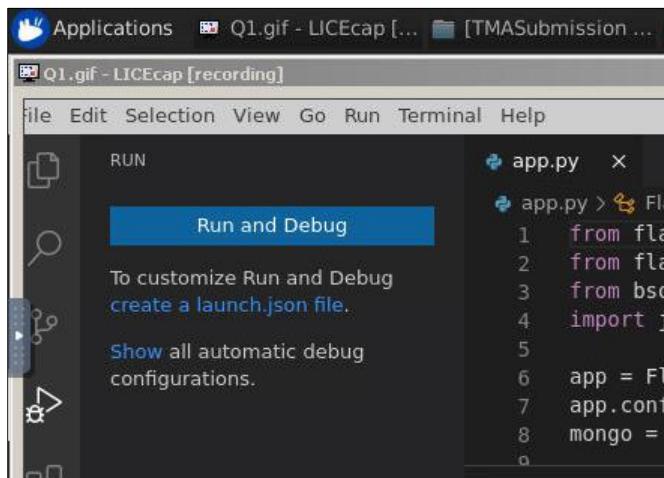


- f. Enter a file name and then click on **Save** button. Please keep the format of file as GIF type.

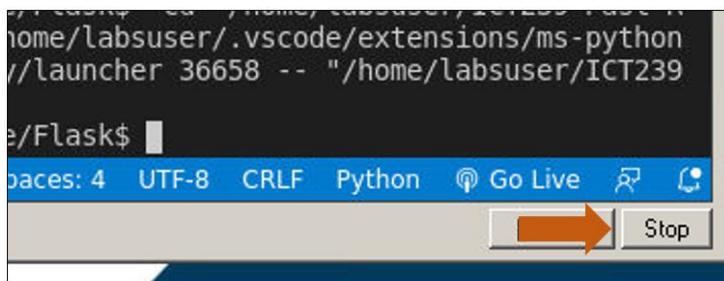


- g. Start running the program.

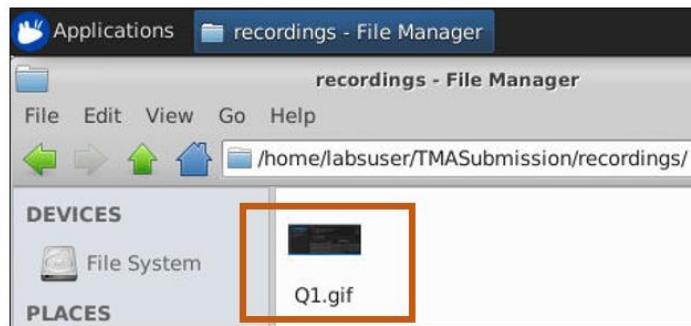
⁶ If you do not see this folder, please create it manually.



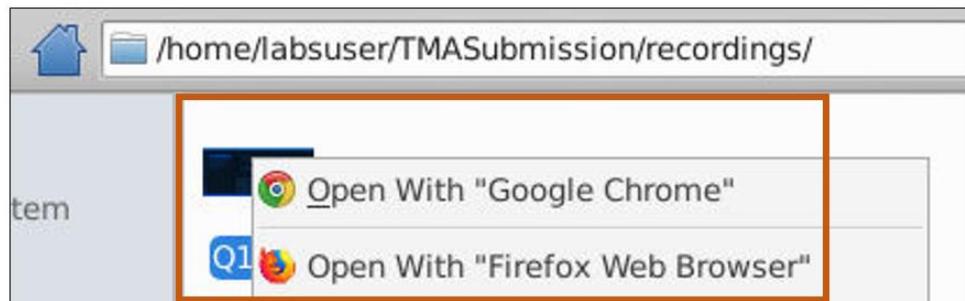
- h. Once the program has completed running, click on **Stop** button.



- i. Navigate to the folder where the file is saved.



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



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

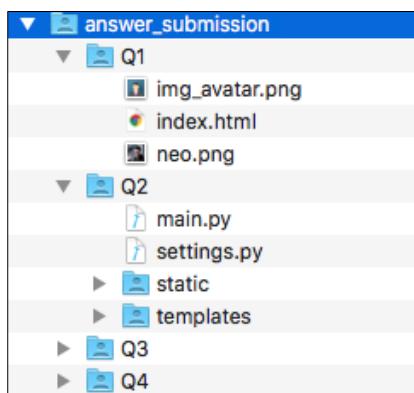
Once you have completed developing your assignment, please ensure that all final version of files are deposited correctly in the respective submission folders as shown in the Table A below. Grader will be accessing these folders to grade your submitted work.

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

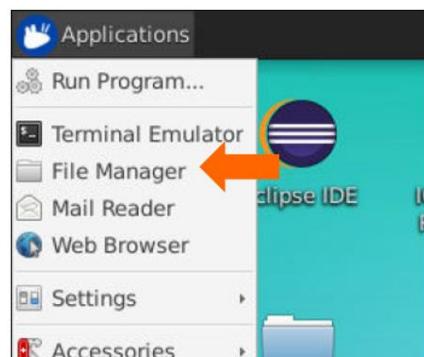
Note: Please note that the Zip File Name is **case sensitive**. Do follow the naming convention as shown in the table above.

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

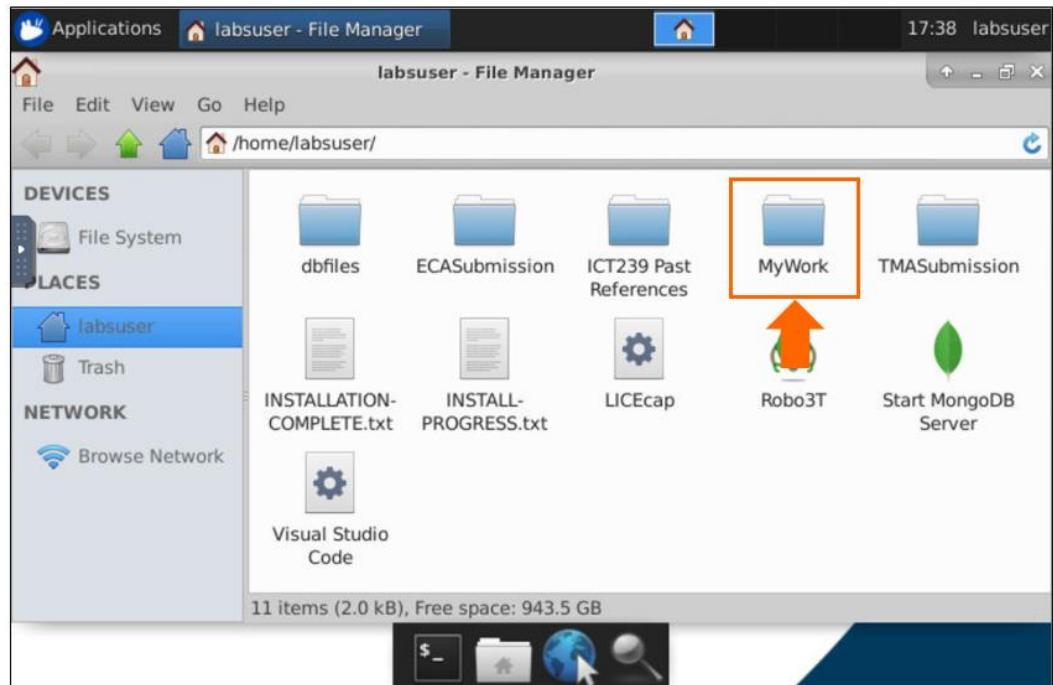


Note: If you are taking ICT233 and ICT239 course, you should (1) remove the python environment directory (2) retain the requirements.txt file in the main submission folder. This requirements.txt will contain the list of python libraries used for your solution and can be used to repopulate the libraries when the submission is done for further development.

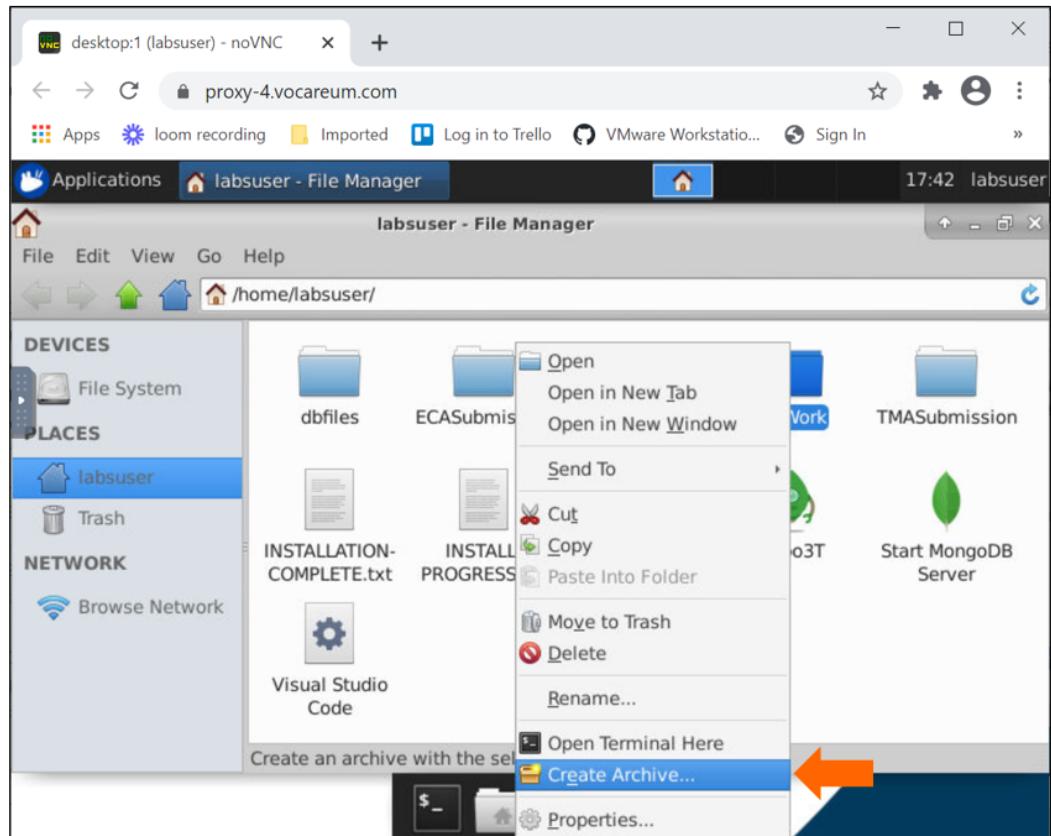
- Zip up your final version of submission with Archive tool. It can be achieved by the following steps.
 - Click to open **File Manager** from Applications Menu.



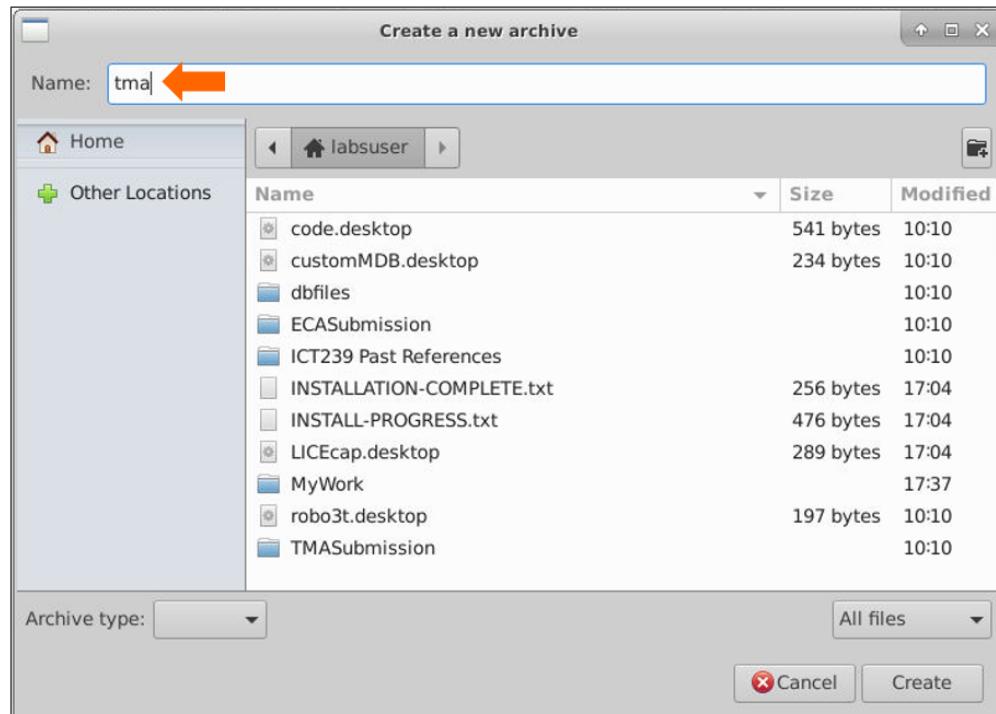
- ii. Navigate to the folder where your final version of files are stored.



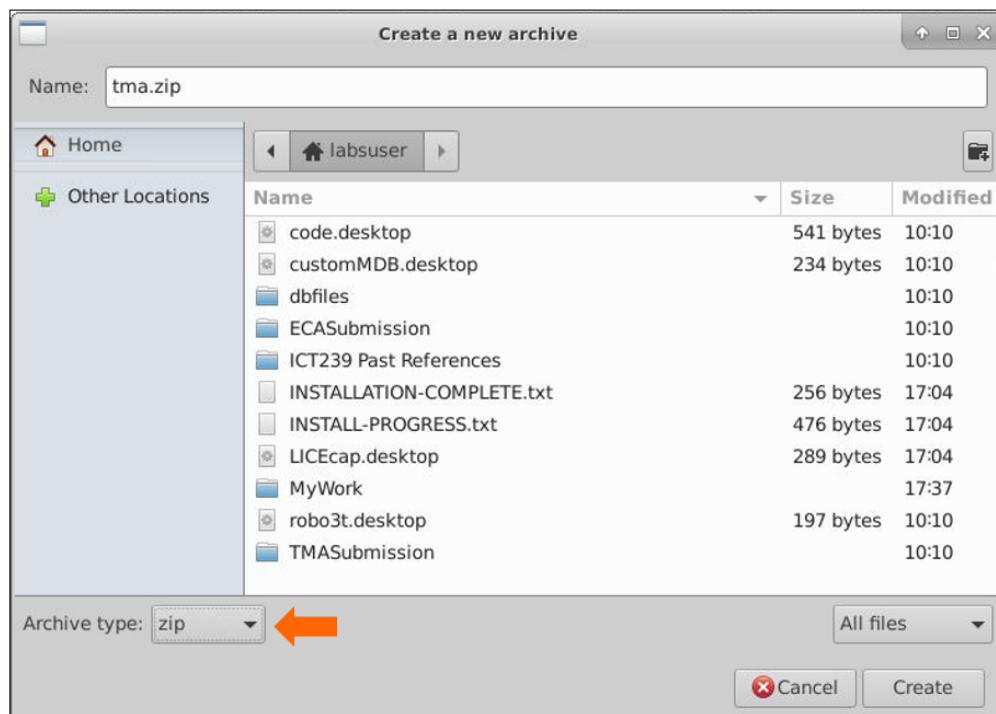
- iii. Right-click that particular folder and click **Create Archive** to open tool.



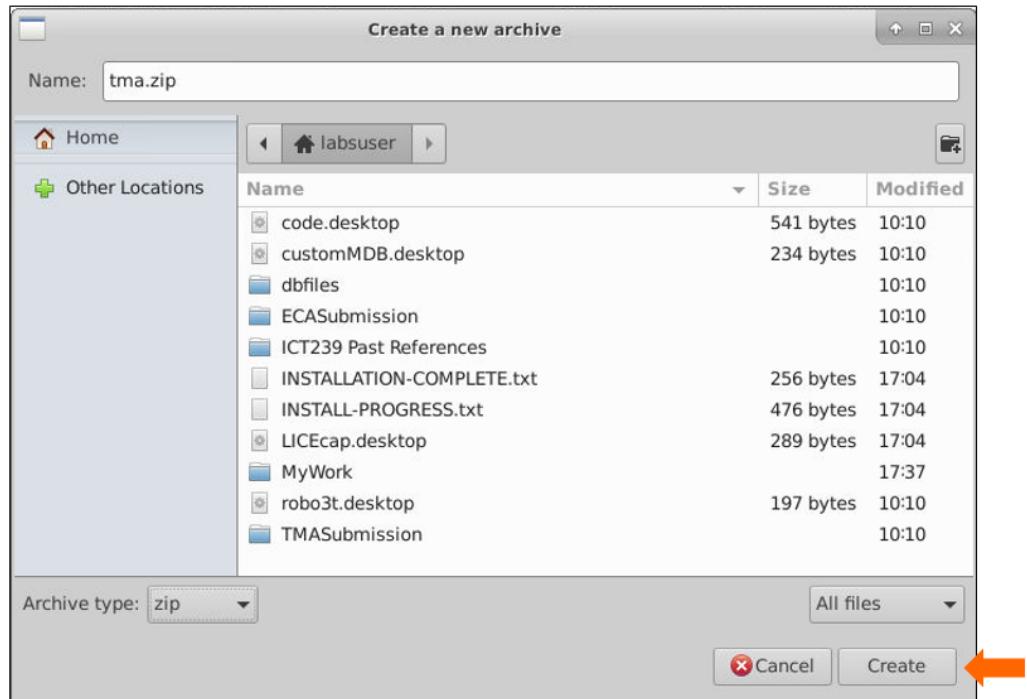
- iv. With reference from the above Table A, enter the name of zip file in the Name field. Please note that the naming is case sensitive.



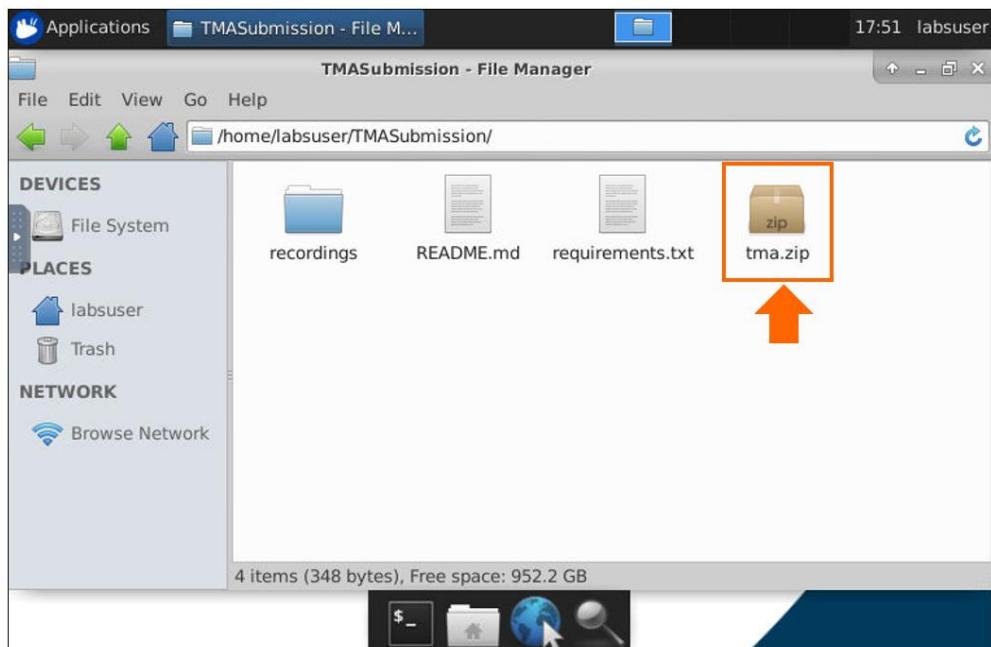
- v. Select **zip** from Archive type menu.



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



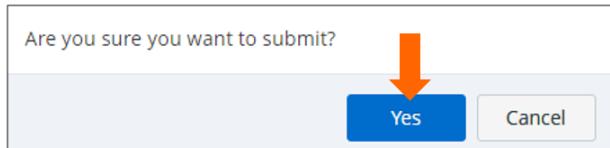
- vii. Copy and paste the zipped file into the submission folder.



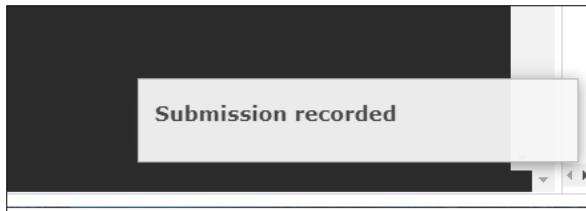
- c. Navigate to WorkSpace Terminal and click **Submit** button to submit your assignment.



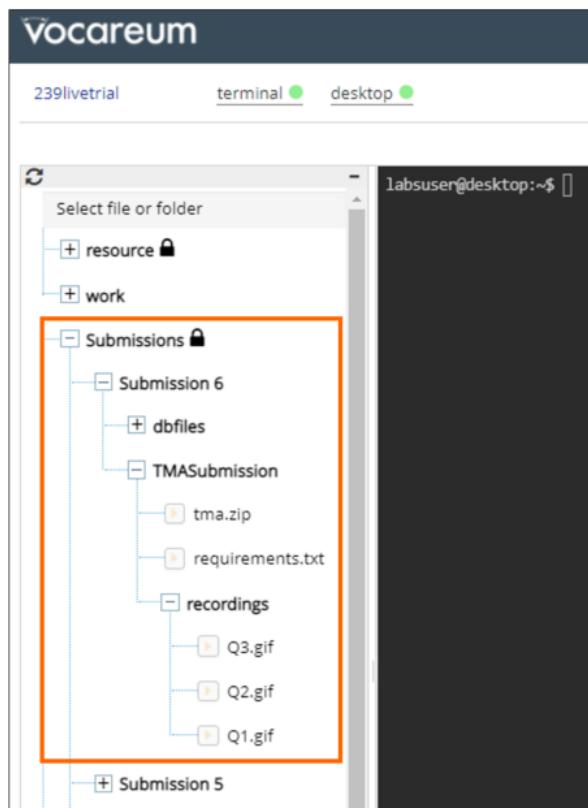
- d. A confirmation message will be prompted. Then, click **Yes** button to confirm submission.



- 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 the report and the zip files on Canvas.

Follow the steps below to submit your report and zip file

- Go to Dashboard and do a print screen of the submission details as shown in sample below.

Details	
Last submitted:	Dec-19-2020 3:19:37 pm +08
Submission count:	1
Due date:	Dec 31 2020 23:59:59 +08

My Work

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 base on your final submission for marking. **Do NOT attempt to submit again after you have submitted your report on Canvas**

- 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

Home

People

Syllabus

Assignments

Grades

SUSS Gradebook

Virtual Class

Collaborations

Report a Problem

Search for Assignment

Upcoming Assignments

TMA01 ←

-TMA.zip

ECA ←

-ECA.zip

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.

The screenshot shows a web-based assignment management system. On the left is a vertical navigation menu with links: Home, People, Syllabus, **Assignments**, Grades, SUSS Gradebook, Virtual Class, Collaborations, and Report a Problem. The 'Assignments' link is highlighted with a vertical bar. The main content area has a header 'ICT239_JAN21_T01 > Assignments'. Below it, there's a search bar labeled 'Search for Assignment'. A section titled 'Upcoming Assignments' is expanded, showing four entries:

Assignment	Due Date	Points
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

Two orange arrows point to the download links for the TMA and ECA assignments: '-TMA.zip' and '-ECA.zip'.

15. 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. Signed in to Vocareum Lab after receiving email notification.	<input type="checkbox"/>	Pg. 3 – 4
2. Accessed to virtual desktop and completed installation.	<input type="checkbox"/>	Pg. 4 – 6
3. Having the following shortcuts created on your virtual desktop:		
○ Applications or libraries that is available to your course (Refer to Annexe)	<input type="checkbox"/>	Pg. 6
○ Folder containing past references	<input type="checkbox"/>	Pg. 6
○ Empty folder to be used for assignment submission:		
▪ TMASubmission	<input type="checkbox"/>	Pg. 6
▪ ECASubmission	<input type="checkbox"/>	Pg. 6
4. Once you have developed your assignment,		
4.1 Created recording for running of program. Place the recording in the submission folder.	<input type="checkbox"/>	Pg. 31 – 33
4.2 Organised and deposited your final version of solution into separate folders for each question.	<input type="checkbox"/>	Pg. 34
4.3 Removed the virtual environment directory in the submission folder which includes all the sub-folder(s).	<input type="checkbox"/>	Pg. 34
4.4 Deposited a copy of requirements.txt file in the submission folder.	<input type="checkbox"/>	Pg. 34
4.5 Zipped up your final version of solution.	<input type="checkbox"/>	Pg. 34 – 37
4.6 Named the zipped file correctly.	<input type="checkbox"/>	Pg. 36
4.7 Placed the zipped file in the submission folder.	<input type="checkbox"/>	Pg. 37
5. Submitted assignment in Vocareum Lab.	<input type="checkbox"/>	Pg. 37 – 38
6. Verified the submitted files are captured by system.	<input type="checkbox"/>	Pg. 38
7. Completed Task List (b).	<input type="checkbox"/>	Pg. 41
8. Submitted assignment in Canvas.	<input type="checkbox"/>	Pg. 39 – 40

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"/>	Pg. 38 – 39
Please indicate that your program can run on Vocareum Lab:	For example: Question 1: Yes Question 2: No Question 3: Yes	<input type="checkbox"/>	Please 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"/>	Pg. 33

16. 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.

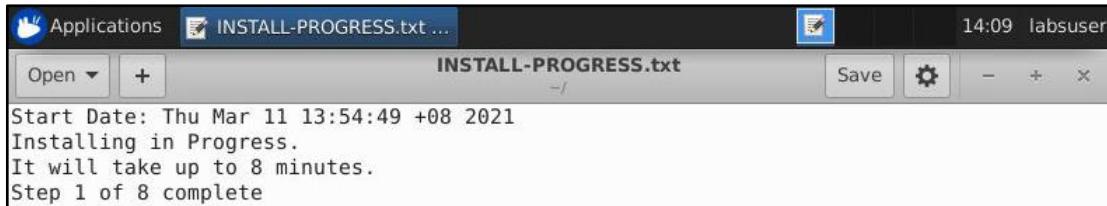
17. IMPORTANT POINTS TO TAKE NOTE (if applicable to your course)

- 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, 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.

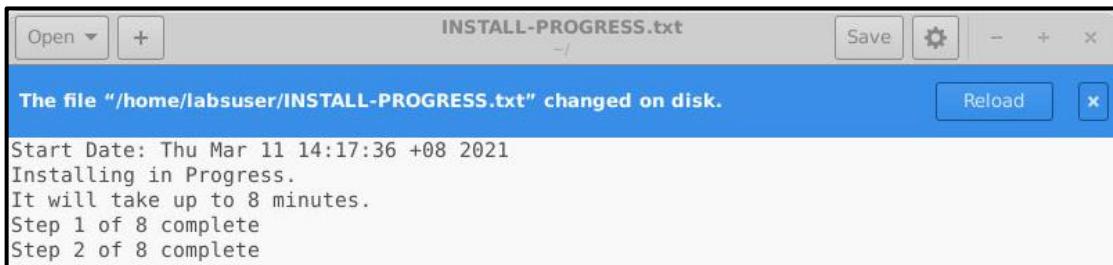
18. APPENDIX A-1 [INSTALLATION PROCESS]

The system will undergo two stages of installation process. To check its progress and completion status, please refer to information below. For subsequent access, this process is no longer required. Hence, you may skip this section.

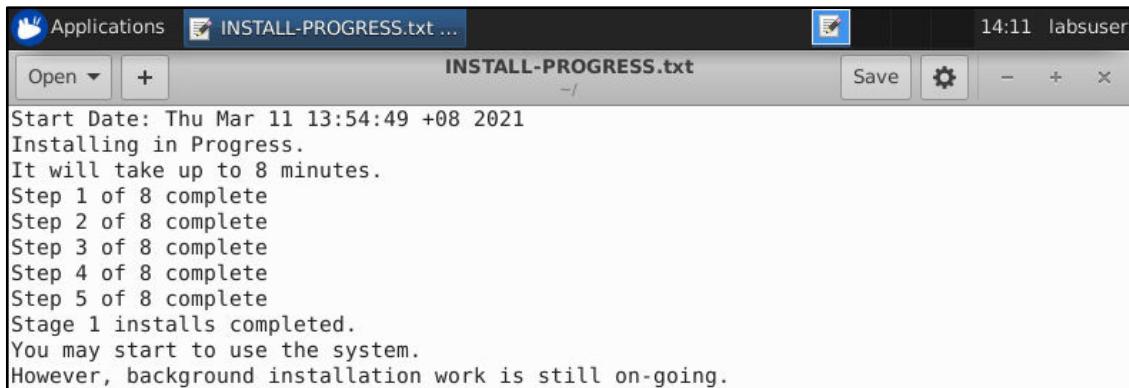
- a. When the lab starts, an INSTALLATION-PROGRESS.txt will be generated on your desktop. To view the progress status, double-click to open the text file with a text editor.
- b. The following message will be shown. Please wait for Stage 1 installation to complete. **Do not** close the text file as it will provide updates about the installation status.



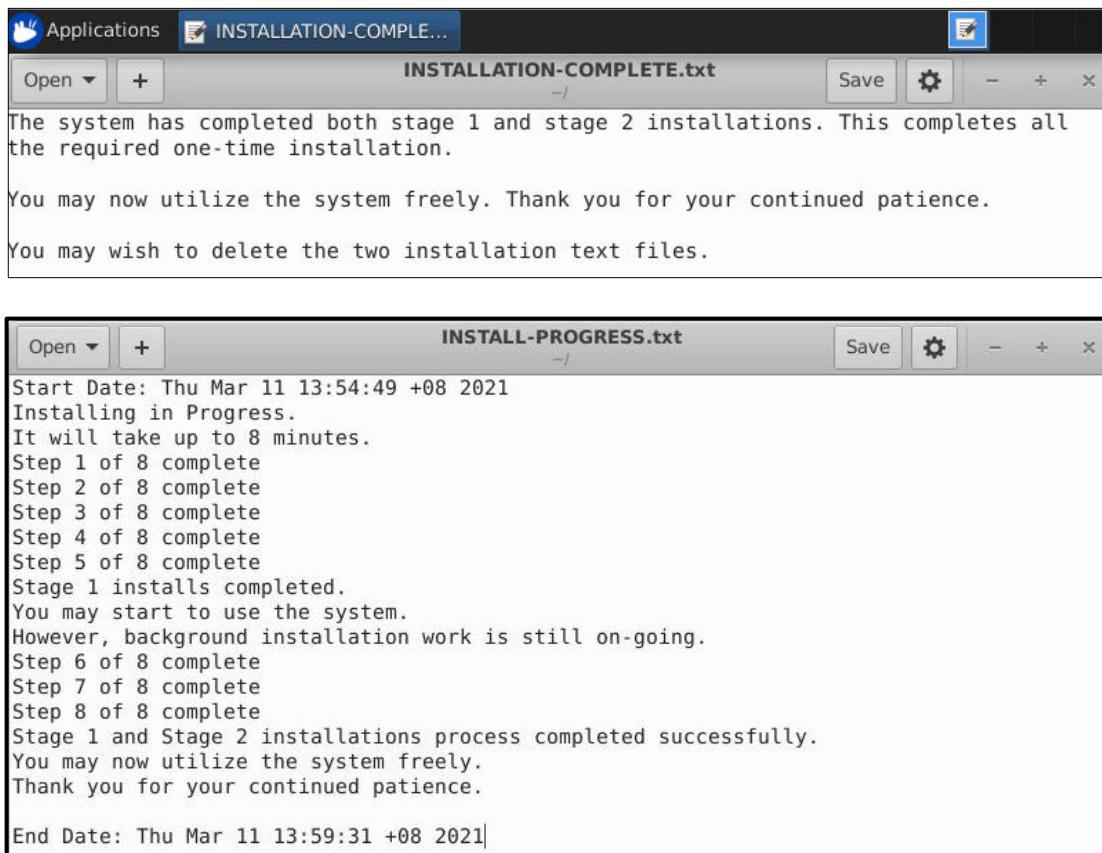
- c. Once Stage 1 installation completes, there will be an update message to the text file. Click on the blue Reload button to refresh the text file.



- d. The text file will be updated with the following message.



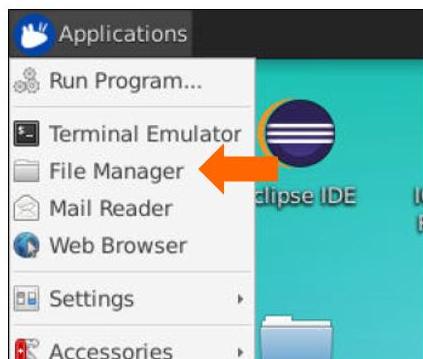
- e. You may start to use the virtual desktop once Stage 1 installation has completed. For courses (ICT233 and ICT239), please note that you may experience sluggishness while stage 2 installation starts to run in the background.
- f. Once both stages of the installation have been completed, an INSTALLATION-COMPLETE.txt will be placed on the virtual desktop. You may double click the text file to view the message updates.



19. APPENDIX A-2 [DOWNLOADING OF FILE]

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

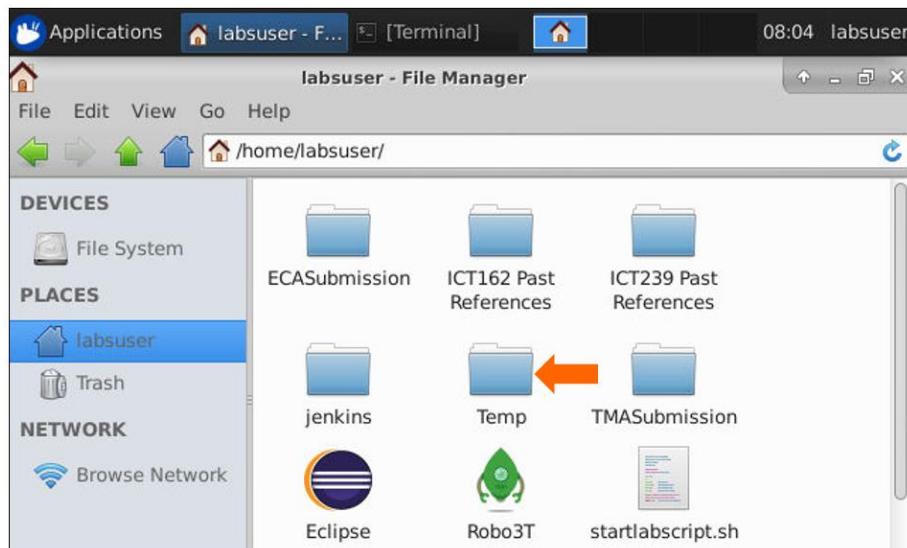
- a. Copy the file(s) that you need.
- b. Click to open **File Manager** from Applications menu.



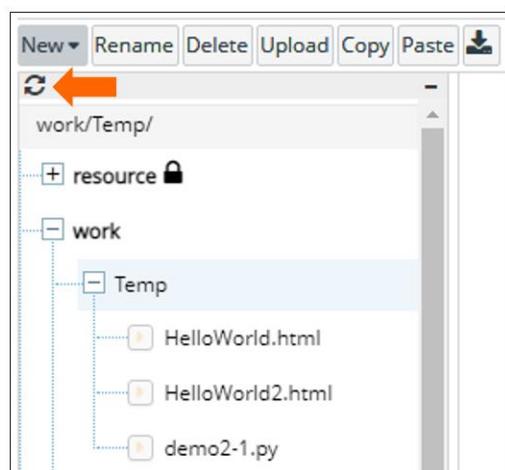
- c. Navigate to the following path in File Manager:
/home/labsuser/



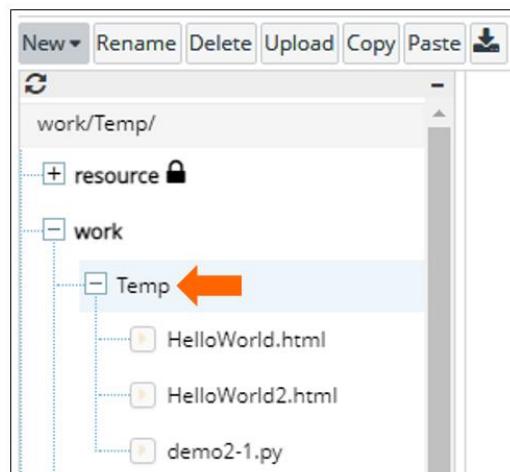
- d. Paste those file(s) into this folder. If there are multiple files, you may wish to create a temporary folder to hold it first.



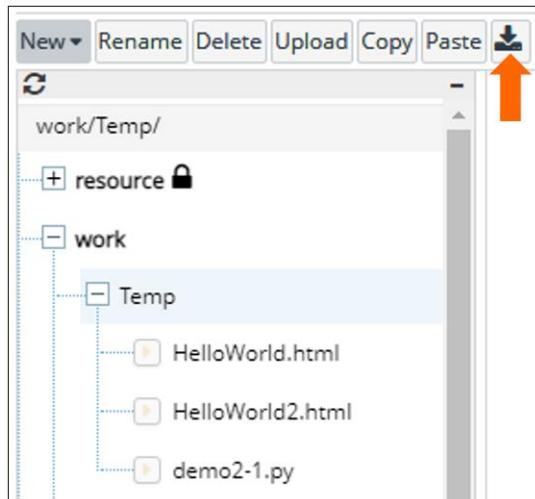
- e. Navigate to WorkSpace Terminal and click on **Reload** icon as pointed to by arrow below. This action will reload the contents of the work folder.



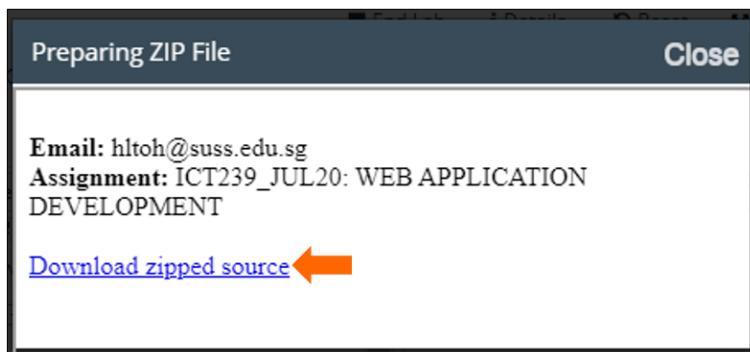
- f. To ensure the file(s) is reloaded correctly, expand work/Temp folder to verify that those file(s) is present.



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



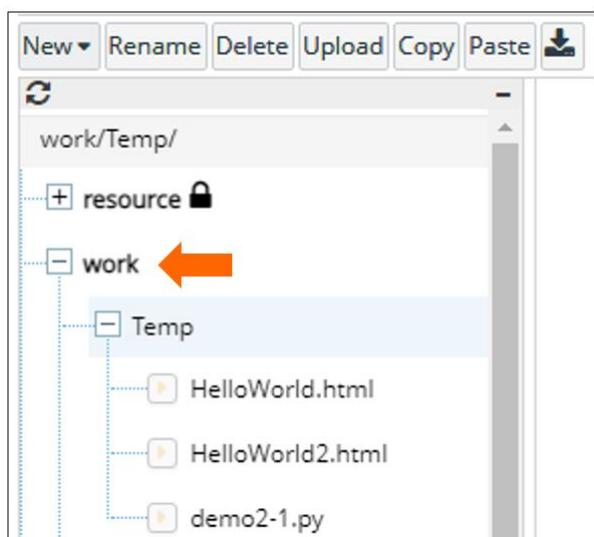
- h. System will compress the selected file into Zip. Click **Download zipped source** link to download and save those file(s) into local computer.



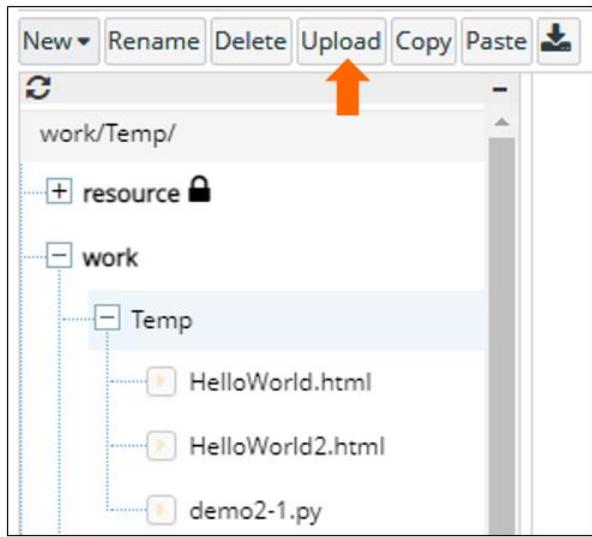
20. APPENDIX A-3 [UPLOADING OF FILE]

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

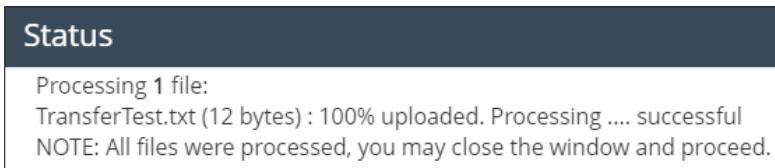
- a. Go to WorkSpace Terminal and select **work** folder.



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



- c. 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

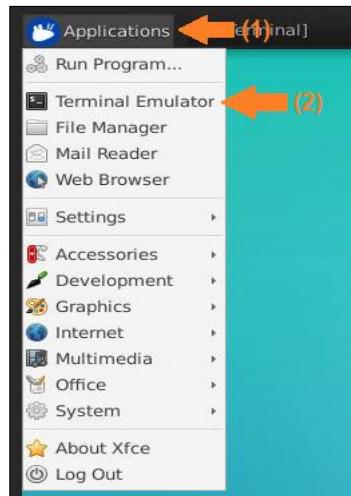
21. APPENDIX A-4 [TROUBLESHOOTING MONGODB CONNECTION]

How to resolve connection error when connecting to MongoDB?

A sample of the error is shown below:



1. Open the (1) Applications menu (at top left corner) and click (2) Terminal Emulator.



2. Enter the following command line into the Terminal Emulator:

 - a. sudo mongod --dbpath /home/labsuser/dbfiles --repair

```

Terminal
File Edit View Terminal Tabs Help
labsuser@desktop:~$ sudo mongod --dbpath /home/labsuser/dbfiles --repair
2021-05-09T15:20:45.029+0000 I CONTROL [main] Automatically disabling TLS 1.0, to force-enable TLS 1.0 specify --sslDisabledProtocols 'none'
2021-05-09T15:20:45.034+0000 W ASIO      [main] No TransportLayer configured during NetworkInterface startup
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] MongoDB starting : pid=1922 port=27017 dbpath=/home/labsuser/dbfiles 64-bit host=desktop
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] db version v4.2.8
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] git version: 43d25964249164d76d5e04dd6cf38f611le21f5f
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] OpenSSL version: OpenSSL 1.1.1 11 Sep 2018
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] allocator: tcmalloc
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] modules: none
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] build environment:
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten]   distmod: ubuntu1804
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten]   distarch: x86_64
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten]   target arch: x86_64
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] 12288 MB of memory available to the process out of 63630 MB total system memory
2021-05-09T15:20:45.034+0000 I CONTROL [initandlisten] options: { repair: true, storage: { dbPath: "/home/labsuser/dbfiles" } }
2021-05-09T15:20:45.039+0000 W STORAGE [initandlisten] Detected unclean shutdown - /home/labsuser/dbfiles/mongod.lock is not empty.
2021-05-09T15:20:45.056+0000 I STORAGE [initandlisten] Detected data files in /home/labsuser/dbfiles created by the 'wiredTiger' storage engine, so setting the active storage engine to 'wiredTiger'.
2021-05-09T15:20:45.056+0000 W STORAGE [initandlisten] Recovering data from the last clean checkpoint.
2021-05-09T15:20:48.087+0000 I -          [initandlisten] Stopping further Flow Control ticket acquisitions.
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] Deregistering all the collections
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] Timestamp monitor shutting down
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] WiredTigerKVEngine shutting down
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] Shutting down session sweeper thread
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] Finished shutting down session sweeper thread
2021-05-09T15:20:48.087+0000 I STORAGE [initandlisten] Shutting down journal flusher thread
2021-05-09T15:20:48.188+0000 I STORAGE [initandlisten] Finished shutting down journal flusher thread
2021-05-09T15:20:48.188+0000 I STORAGE [initandlisten] Shutting down checkpoint thread
2021-05-09T15:20:48.188+0000 I STORAGE [initandlisten] Finished shutting down checkpoint thread
2021-05-09T15:20:48.858+0000 I STORAGE [initandlisten] shutdown: removing fs lock...
2021-05-09T15:20:48.862+0000 I CONTROL [initandlisten] now exiting
2021-05-09T15:20:48.862+0000 I CONTROL [initandlisten] shutting down with code:0
labsuser@desktop:~$ 

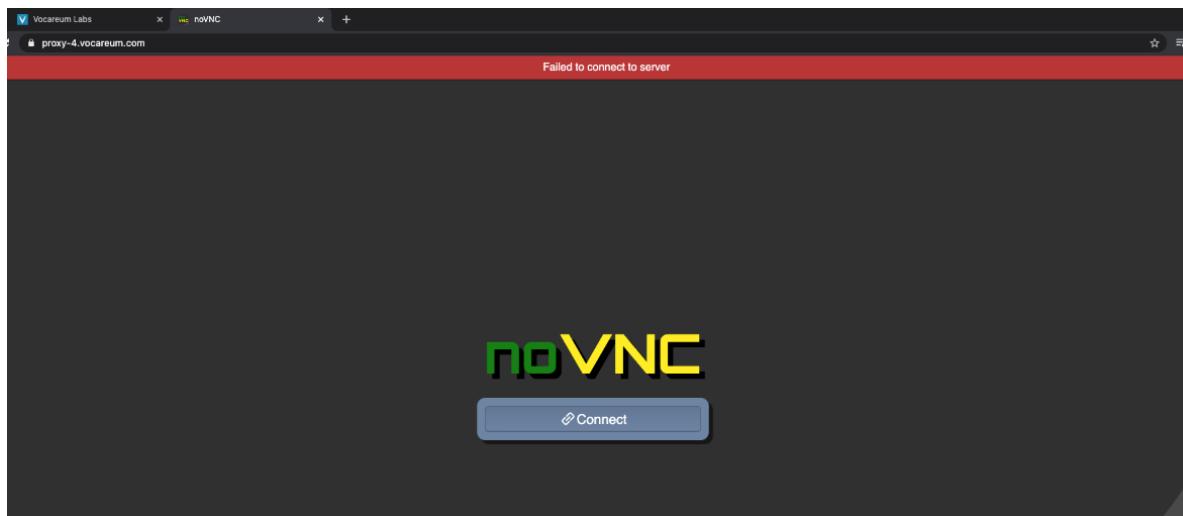
```

3. Please click on the **Start MongoDB Server** icon once on your desktop. (Refer to [Section 9a and 9b](#))
4. Please attempt to launch Robo3T and reconnect to MongoDB. (Refer to [Section 9c onwards](#)).

22. APPENDIX A-5 [RE-CONNECT VIRTUAL DESKTOP]

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

A sample of the error is shown below:



1. Close the browser tab and navigate to Workspace.
2. Repeat Step 2e and 2f under [Section 2](#) to reconnect the virtual desktop.
3. If the same error occurs,
 - a. Repeat the step under [Section 11](#) to end the current lab session.
 - b. Then repeat the steps under [Section 2](#) to start a new lab session.

23. 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.	Eclipse with PyDev
3.	Visual Studio Code
4.	Python3
5.	Python3.8
6.	Virtual Environment (Venv)
7.	Jupyter Notebook
8.	MongoDB
9.	Robo3T
10.	MySQL
11.	DBeaver
12.	PyCharm
13.	Thonny
14.	LICEcap

24. FAQ

Q1. I have not received Vocareum Course Invitation email, how do I sign in?

1. Go to Vocareum Sign In page and click “Forgot password” link.
2. Enter your SUSS MyMail address in Email field and click Send email button.
 - a. A temporary login password will be sent to this email address.
 - b. If system is unable to validate your email address, please contact IT Support immediately.
3. Sign in using the temporary login password, then change to a new password.

Q2. The loading of WorkSpace is taking a long time to load.

Students who are accessing their WorkSpace for the first-time, it will take a longer time to load. Please be advised not to close the web browser and wait until the loading is completed.

---END OF GUIDE---