Hands-on lab: Getting started with an IDE

Estimated Time: 30 minutes

In this lab, you will become familiar with using an Integrated Development Environment (IDE). The IDE that you will be using is called Skills Network Cloud IDE which is based on an open-source project called Theia. This IDE is very similar to the popular Visual Studio (VS) Code IDE. In this lab, you will explore the IDE and use it to create and run a simple Python application. You will create a code file, save it, and edit it to make changes.

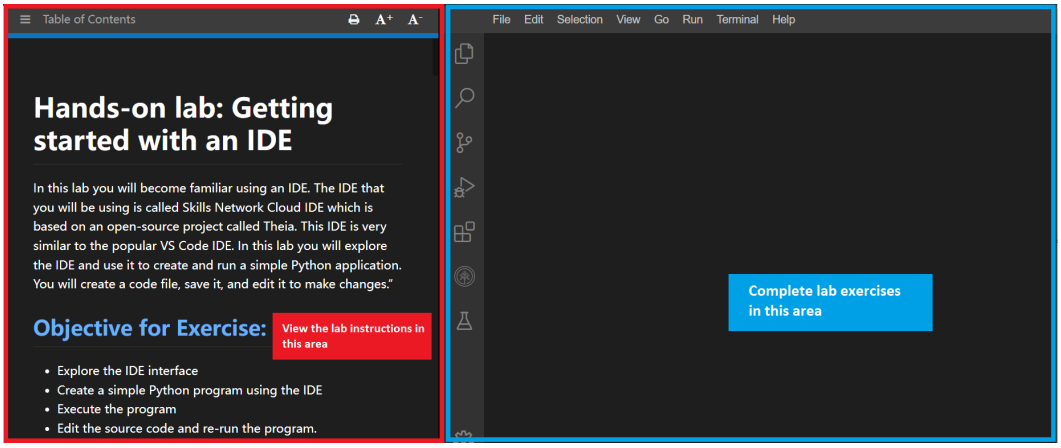
Objectives:

- Explore the IDE interface.
- Create a simple Python program using the IDE.
- Execute the program.
- Edit the source code and re-run the program.

About the lab environment

Two Components of the Skills Network Lab environment:

- The instructions that you will follow to complete this lab are displayed on the left side of the screen.
- The area on the right side of the screen is the actual IDE where you will use the menus, terminals, and tools to develop your code.

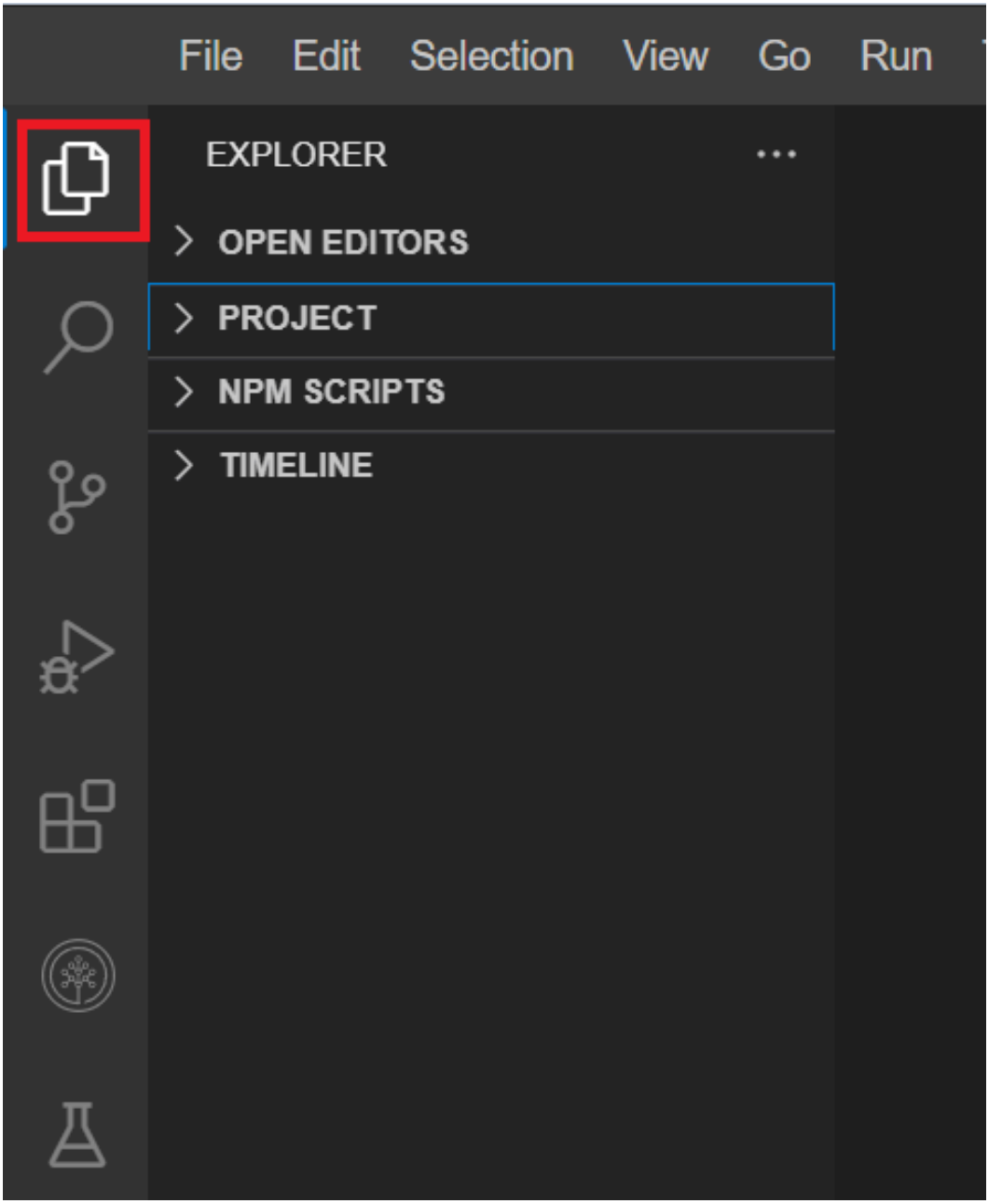


Exercise 1: Explore the IDE interface

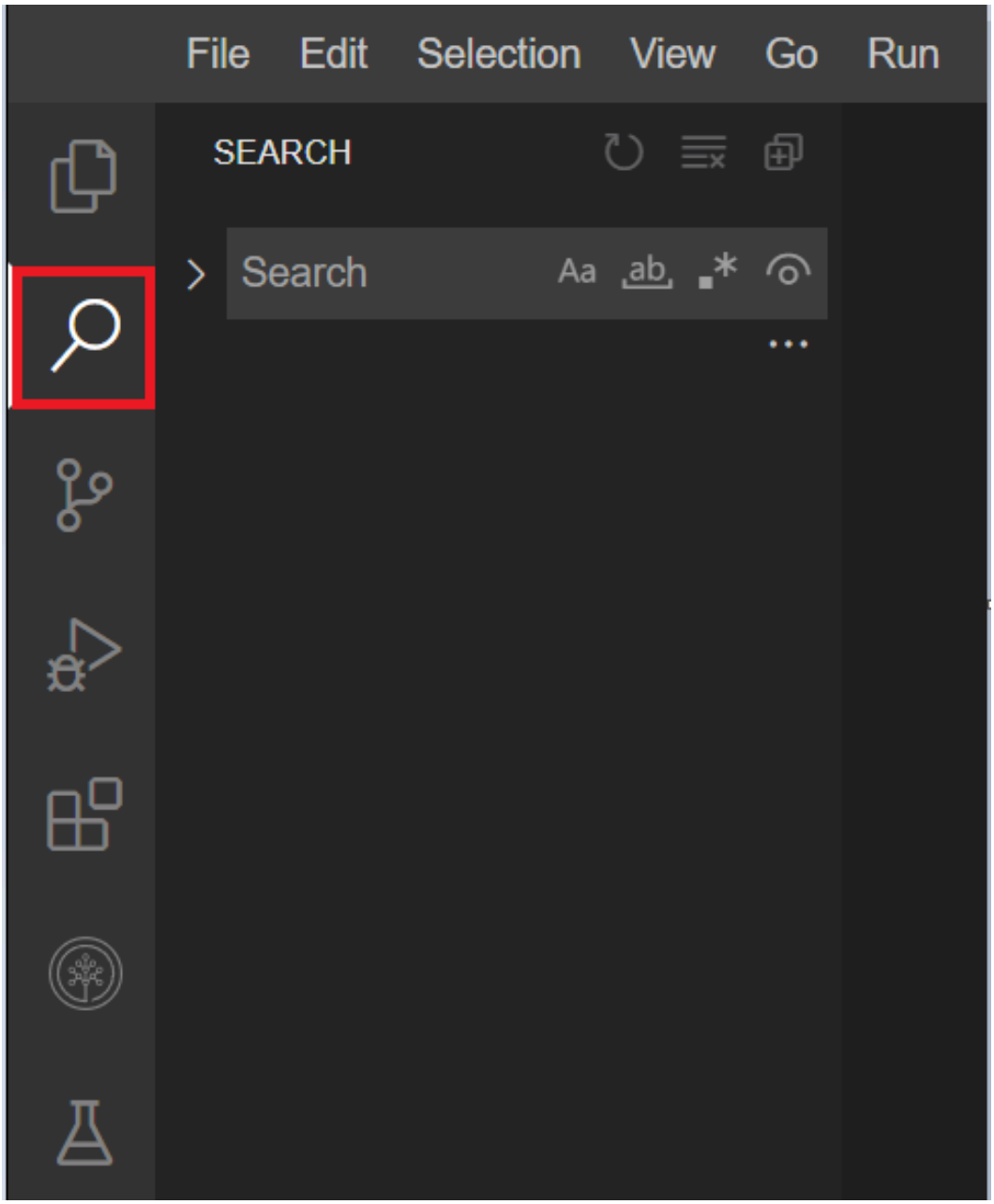
Explore the menus, terminals, and tools

Let us now explore the IDE interface. Please click on each of the icons and menu items highlighted in red boxes in the following screenshots to become familiar with their purpose.

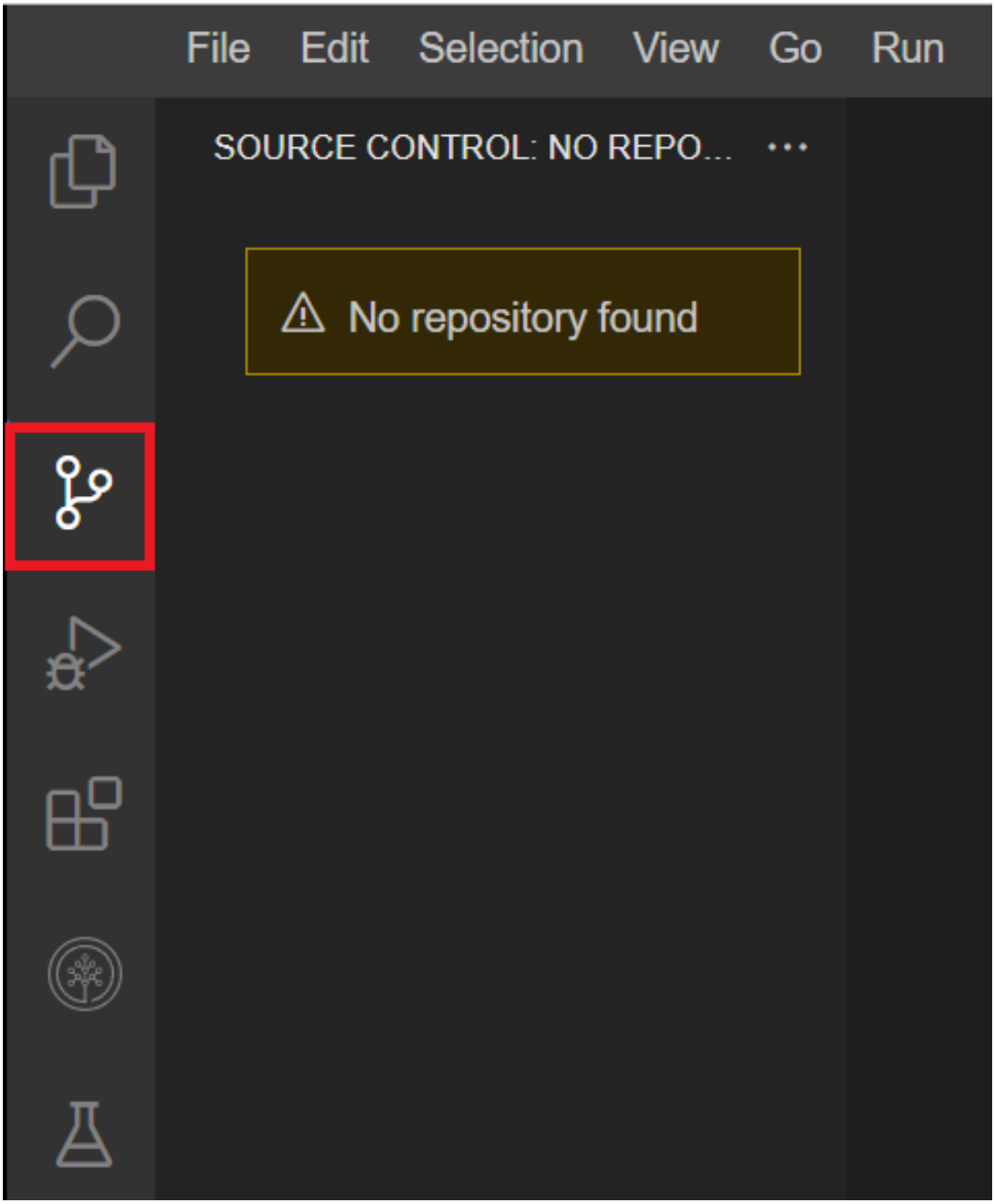
1. In the **Explorer** menu, you will find your folders, files (created or cloned), and pre-requisites installed.



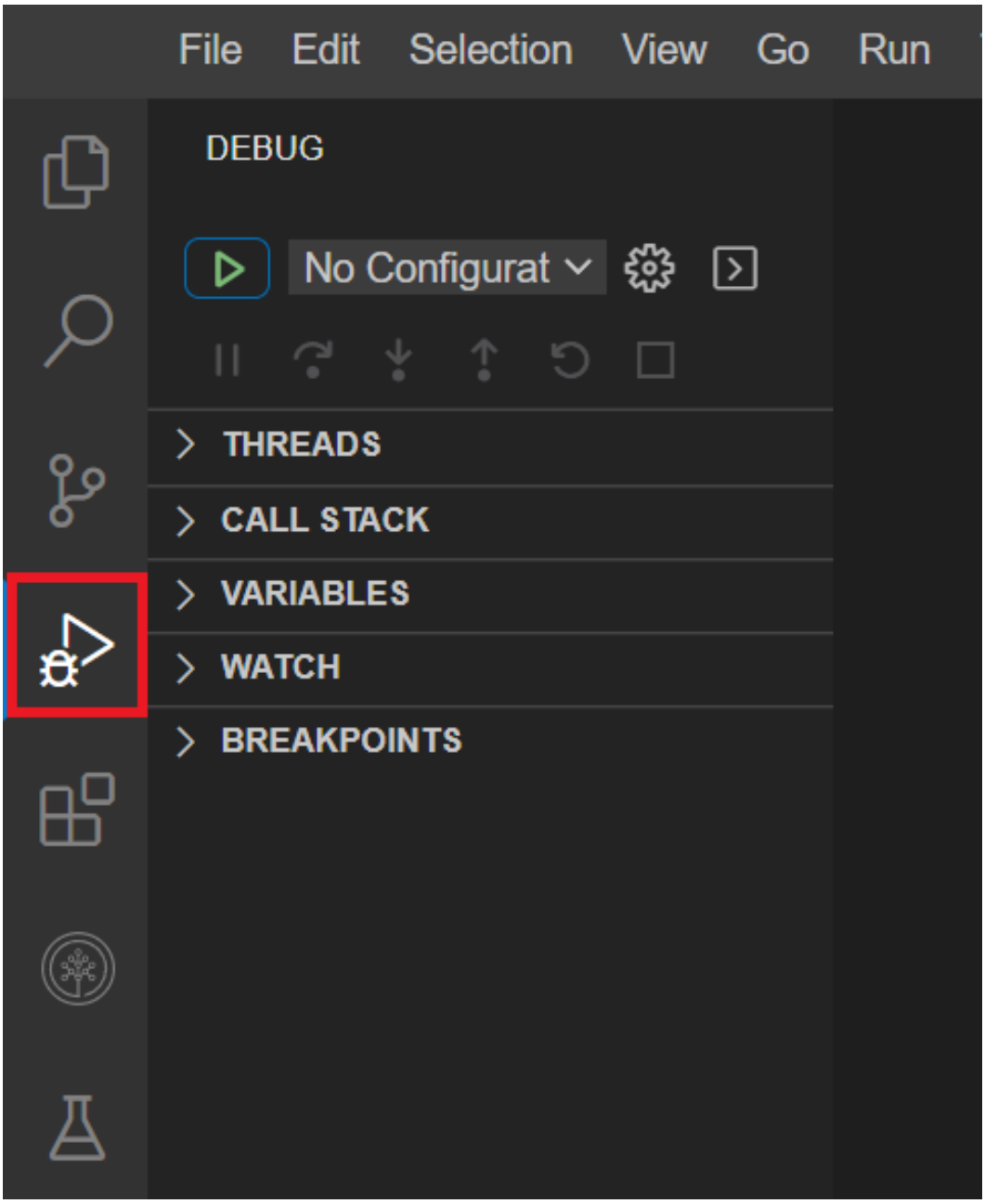
2. In the **Search** menu, you can search for particular folders or files that were created or cloned.



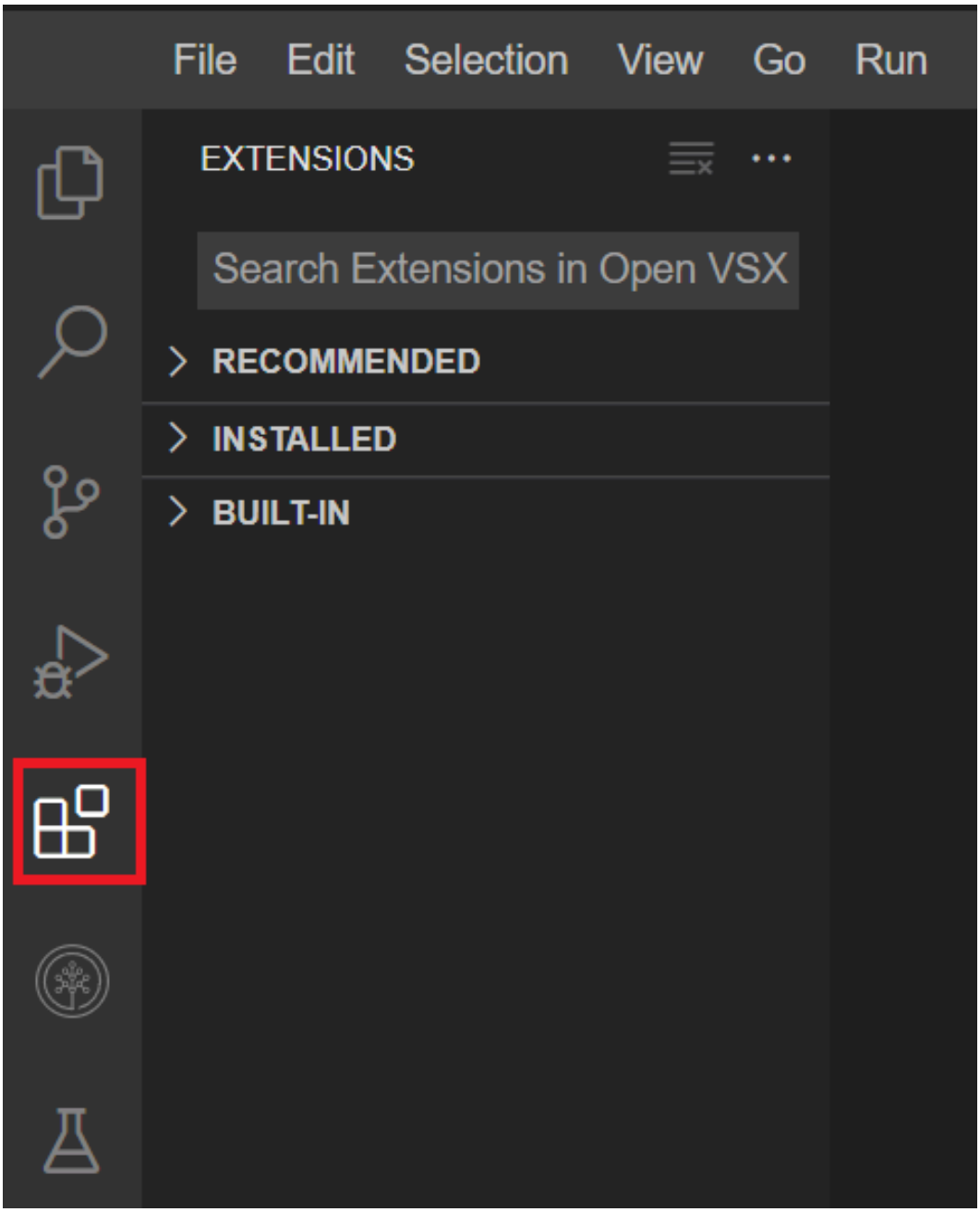
3. In the **Source Control** menu, you will find the cloned repository.



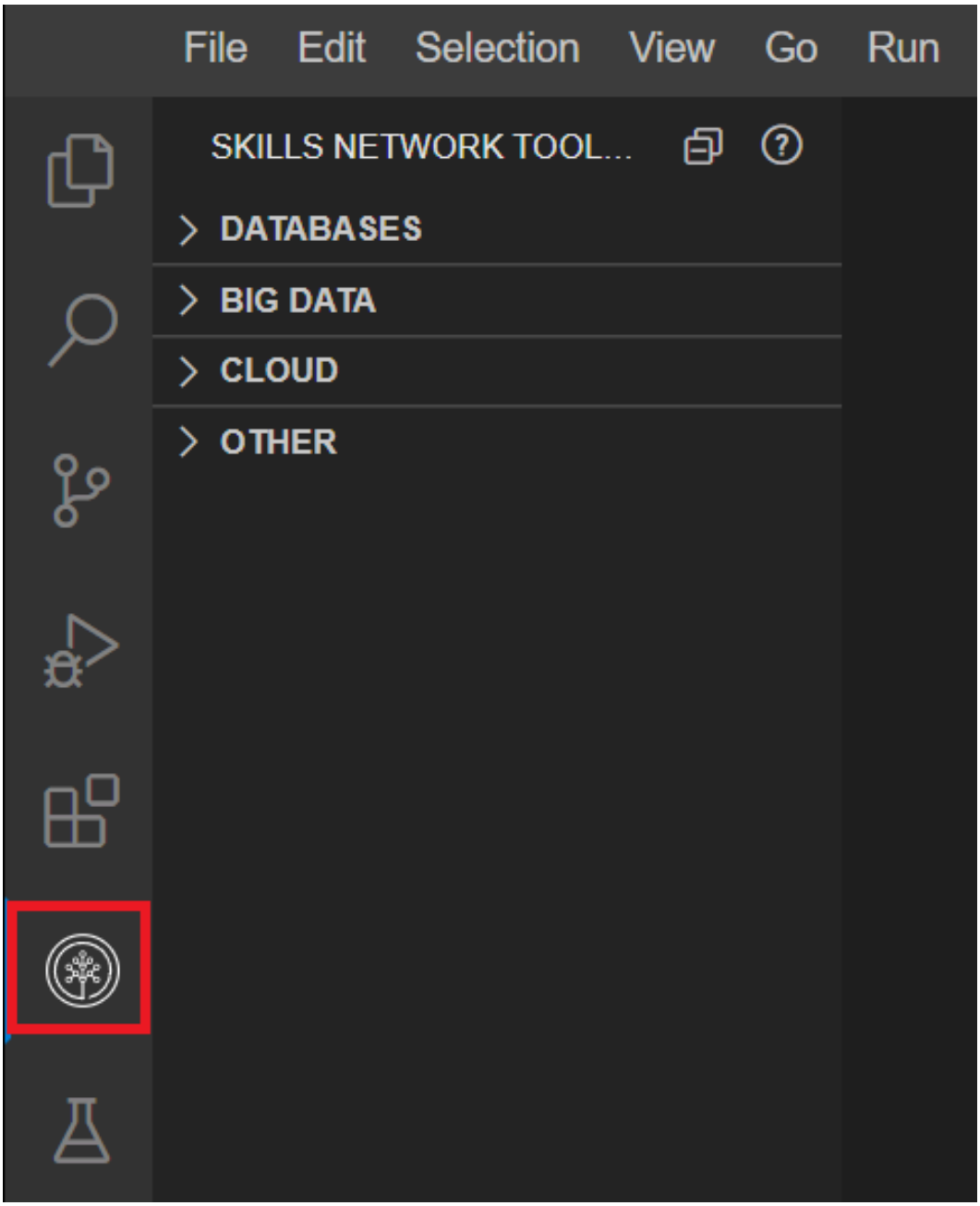
4. In the **Debug** menu, you can debug and troubleshoot your code.



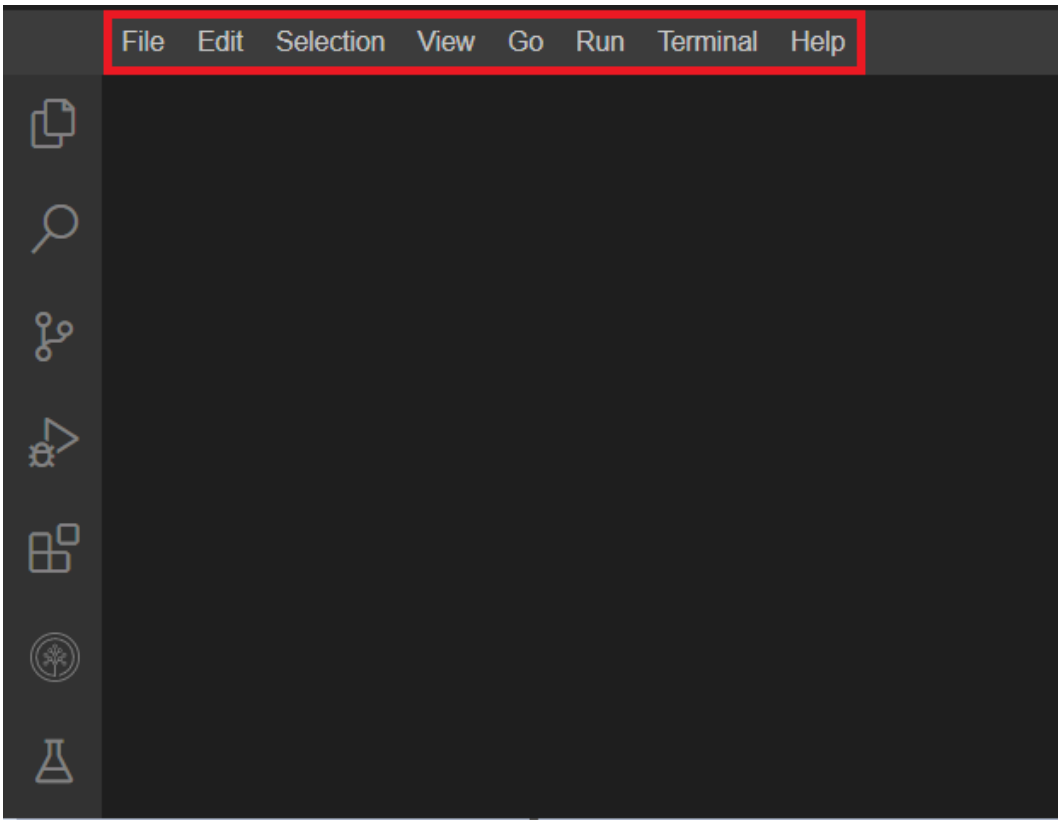
5. In the **Extensions** menu, you can check the recommended, installed, and built-in software already provided as the pre-requisites.



6. In the **Skills Network Toolbox**, you will find options to use database, big data, cloud, and other tools to complete lab exercises in other courses.



7. Explore the menu options at the top of the IDE: File, Edit, Selection, View, Go, Run, Terminal, Help. You will be using some of these menu items in subsequent exercises. A summary of what they are used for is provided below.



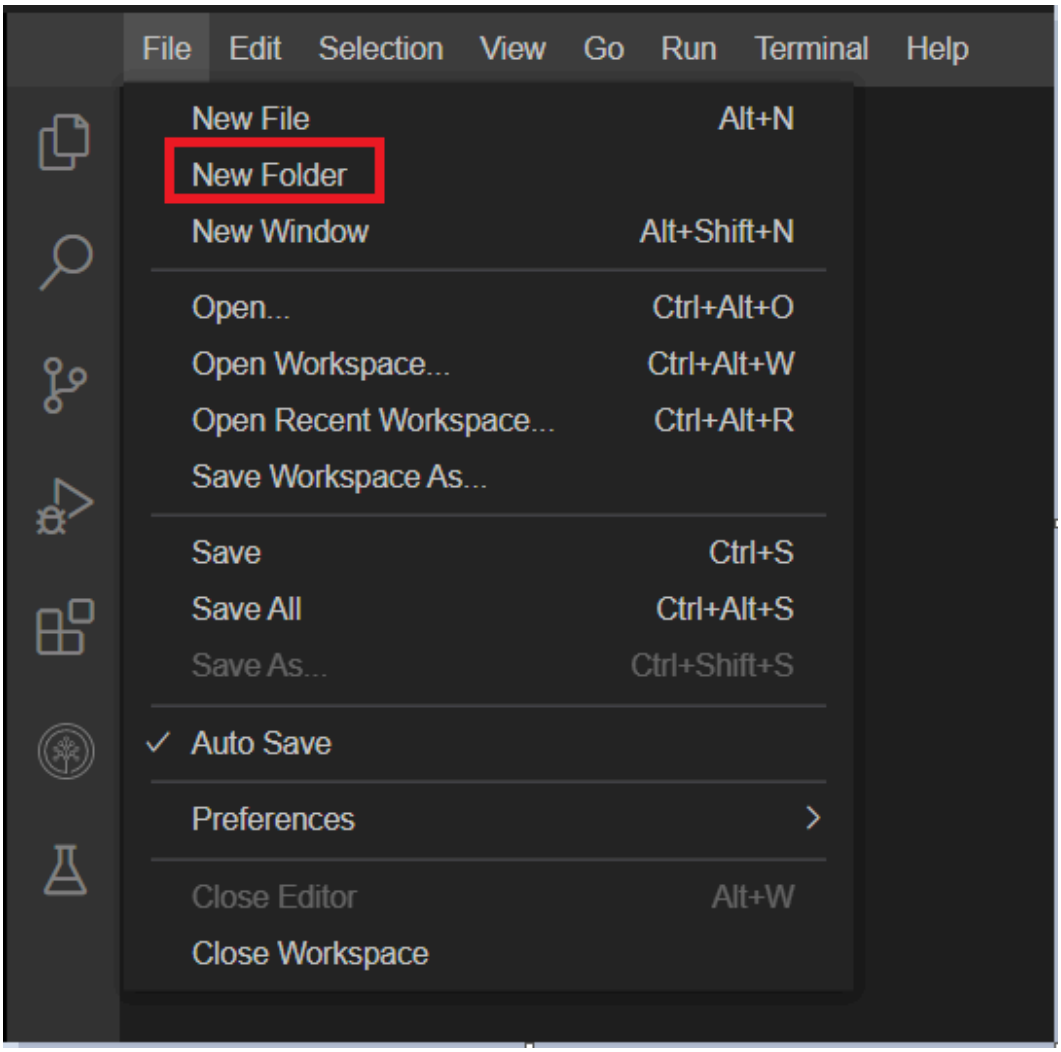
- **File:** This menu is used to create a new file or folder and save the file.
- **Edit:** This menu is used to undo, redo, cut, paste and find the file.
- **Selection:** This menu is used to Select All, Copy line up or down and Move line up or down in the file.
- **View:** This menu is used to view the other menus like explorer, extensions, and search.
- **Go:** This menu is used to Go back, view the last edit location, and go to the files.
- **Run:** This menu is used for debugging and Adding configurations.
- **Terminal:** This menu is used to open the New terminal and run the tasks.
- **Help:** This menu is used to view the list of extensions and get started a file.

Click on each menu and explore them.

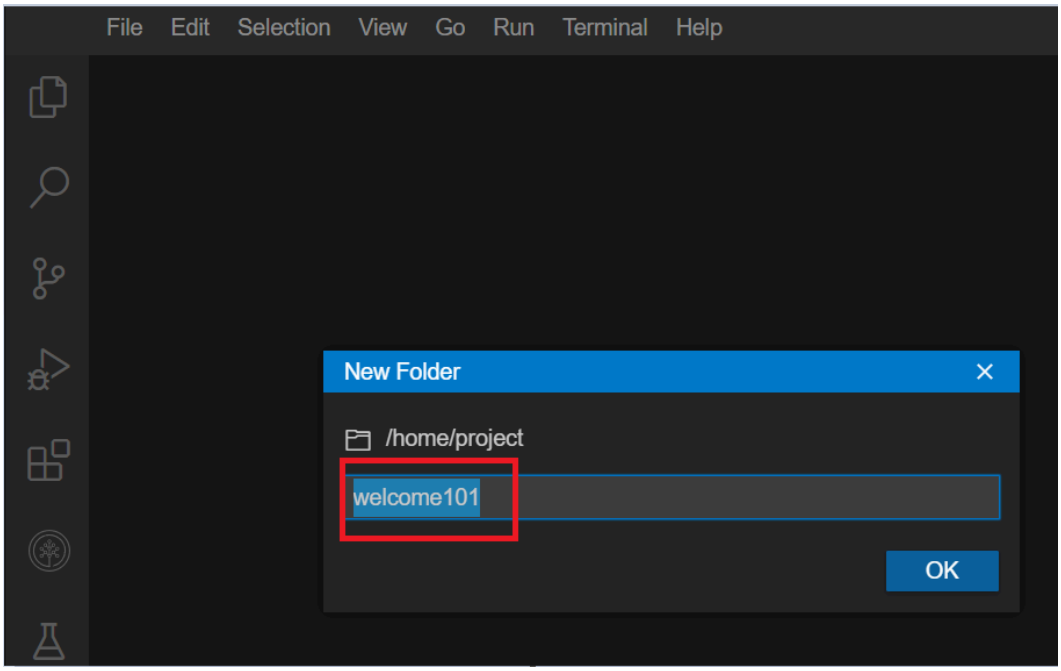
You will learn about folder and file creation and how to use the terminal to run the commands later in this lab.

Exercise 2: Create a simple Python program using the IDE

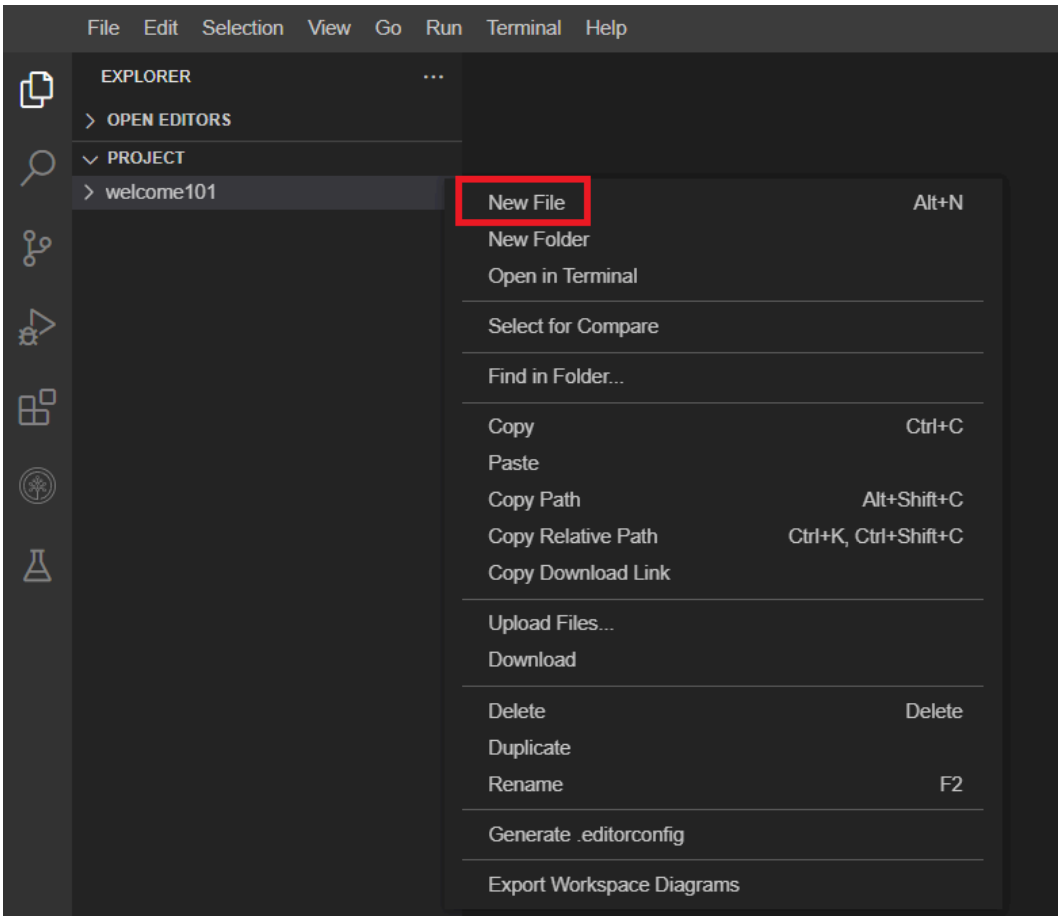
1. On the window to the right, click on the File menu and select **"New Folder"** option, as shown in the image below.



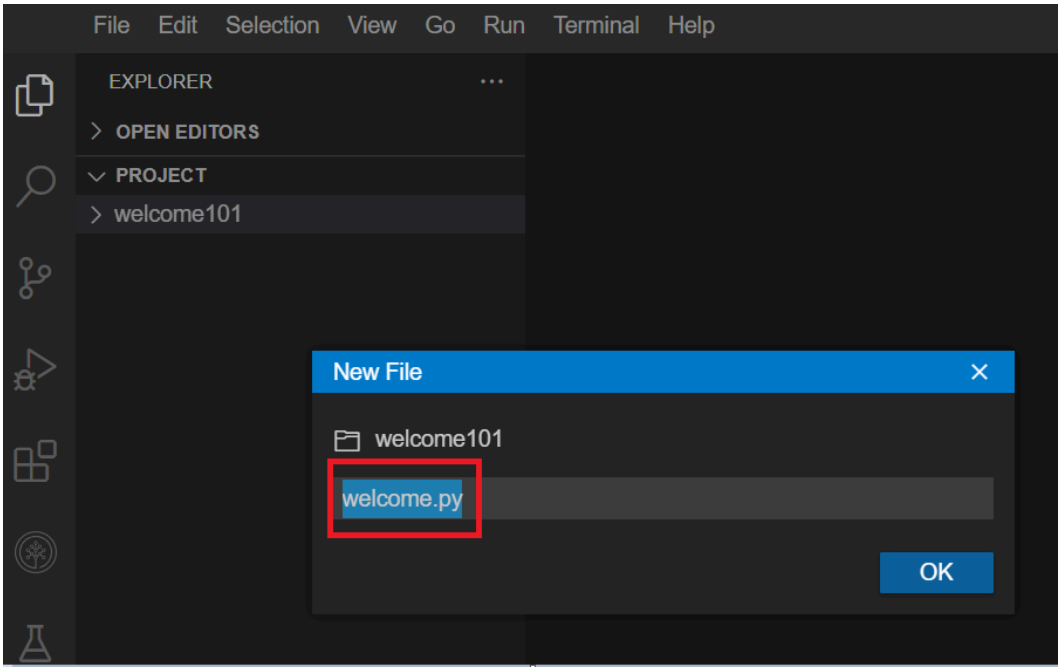
Name the folder **"welcome101"**.



2. Right-click on the folder welcome101 and click on **"New File"**.

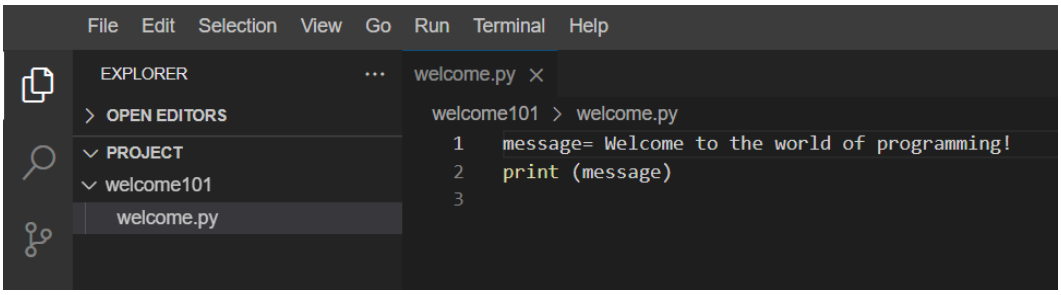


Create a new file and name it **"welcome.py"**.



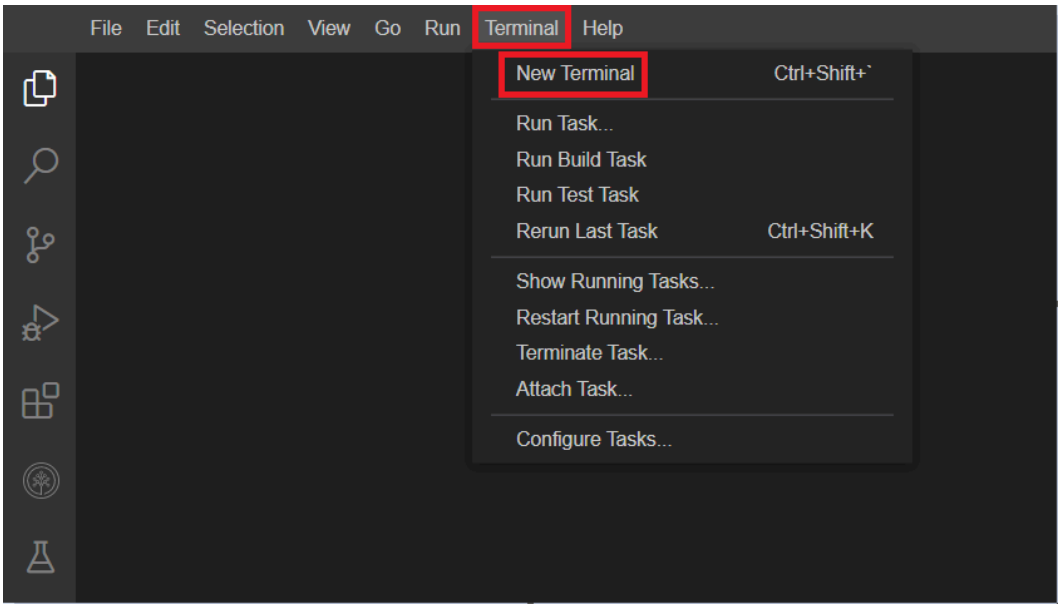
3. Paste the below code to the welcome.py file and save it using Ctrl+S.

```
message = Welcome to the world of programming!
print(message)
```

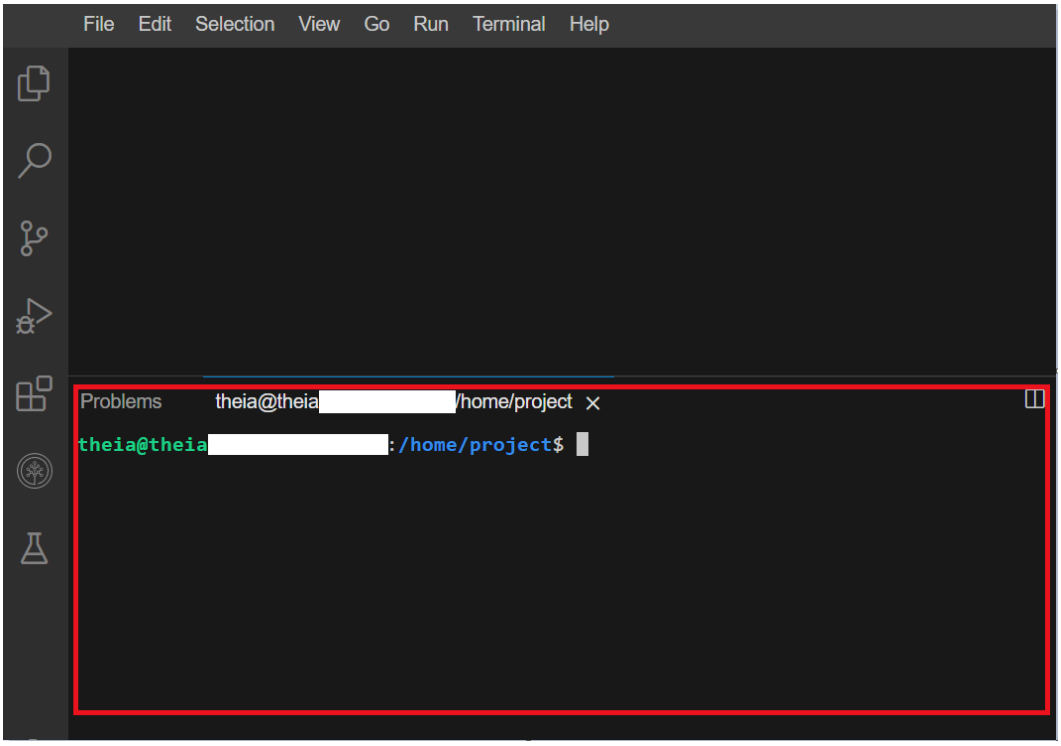


Exercise 3: Execute the program

1. Open a terminal window by using the menu in the editor: Terminal > New Terminal.



In the terminal, you will be running all the commands used to complete the lab.

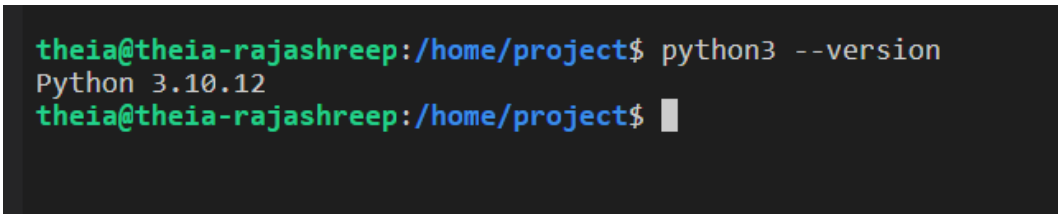


2. Verify that python is installed.

```
python3 --version
```

You should see output similar to this, though the versions may be different:

```
Python 3.10.12
```

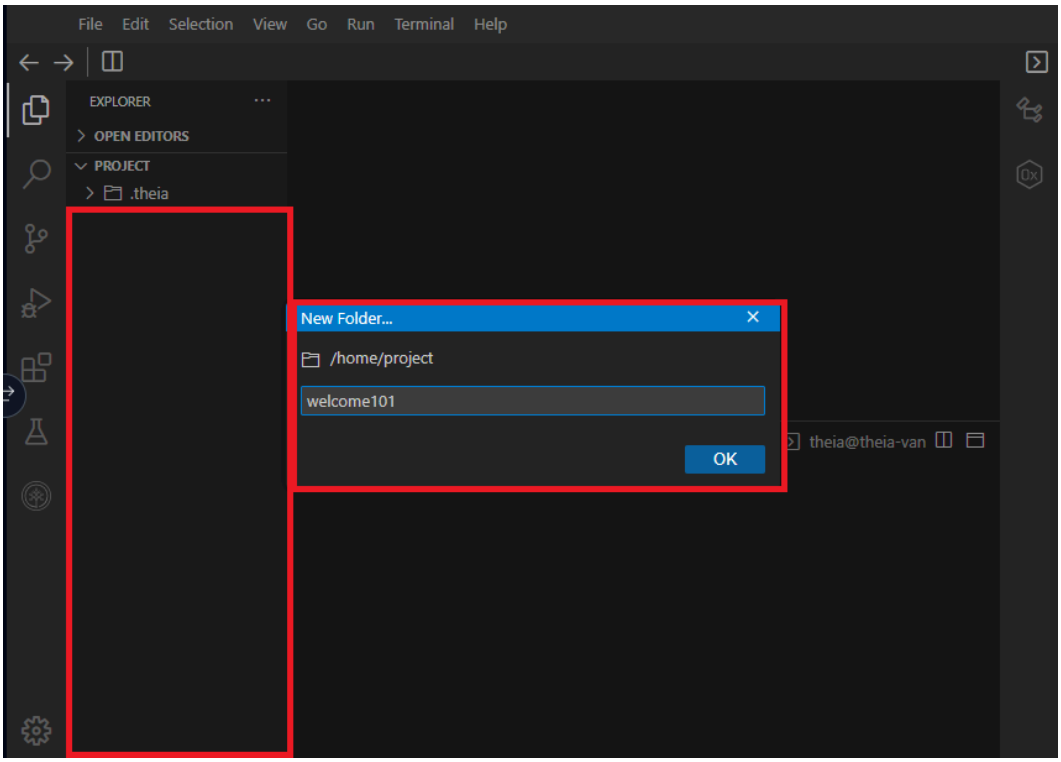


3. Change the directory for this lab by using the command shown below in the terminal.

```
cd welcome101
```

*Note: If you encounter the error **No such file or directory**, please ensure that the welcome101 folder is created in the correct directory.*

To create the folder in correct directory, right-click anywhere on the empty area in Explorer, select **New Folder**, and rename it to **welcome101**. After that, proceed with the rest of the lab instructions.



4. Run the program in the terminal using the below command:

```
python3 welcome.py
```

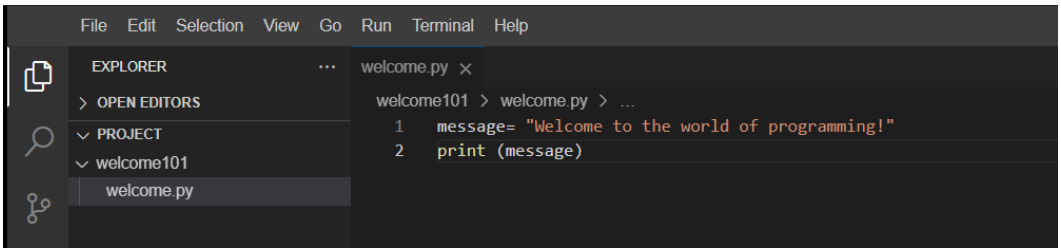
You will get an invalid syntax error because the source code is incorrect.

```
theia@theia-rajashreep:/home/project$ cd welcome101
theia@theia-rajashreep:/home/project/welcome101$ python3 welcome.py
  File "/home/project/welcome101/welcome.py", line 1
    message = Welcome to the world of programming!
                      ^^
SyntaxError: invalid syntax
theia@theia-rajashreep:/home/project/welcome101$
```

Exercise 4: Edit the source code and re-run the program

1. Replace the source code with the code shown below:

```
message= "Welcome to the world of programming!"
print (message)
```

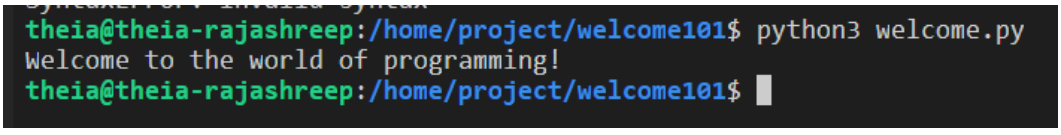


2. Run the program in the terminal using the command below:

```
python3 welcome.py
```

You should see an output similar to this.

```
Welcome to the world of programming!
```



Practice Exercises:

1. “Create a new folder called "software101".

▶ Click here for Hint

2. In it, create a new file called “software.py”.

▶ Click here for Hint

3. Write code to print “software engineering is awesome”.

▶ Click here for Hint
▶ Click here for Solution

4. Run the program.

▶ Click here for Solution

5. Edit the software.py file and make “s” & “e” in “software engineering is awesome” to uppercase.

▶ Click here for Solution

6. Run the update file.

▶ Click here for Solution

Congratulations! You have completed this lab and know how to run python programs in an IDE.

Author:

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