Overview
In this practical session, you will learn how to set up your development environment, create a GitHub repository, clone it to your local machine using VSCode, write a simple Python program, commit your changes, and push them to GitHub.

Pre-requisites:

1. Github account
2. Git for Windows https://git-scm.com/download/win
3. VSCode
4. Python

Introduction
Git: A distributed Version Control System (VCS), which means it is a useful tool for easily tracking changes to your code, collaborating, and sharing. With Git you can track the changes you make to your project so you always have a record of what you've worked on and can easily revert back to an older version if need be. It also makes working with others easier—groups of people can work together on the same project and merge their changes into one final source

GitHub: A way to use the same power of Git all online with an easy-to-use interface. It's used across the software world and beyond to collaborate and maintain the history of projects.

Understanding the GitHub flow:
The GitHub flow is a lightweight workflow that allows you to experiment and collaborate on your projects easily, without the risk of losing your previous work.

Repositories:
A repository is where your project work happens--think of it as your project folder. It contains all of your project's files and revision history. You can work within a repository alone or invite others to collaborate with you on those files.

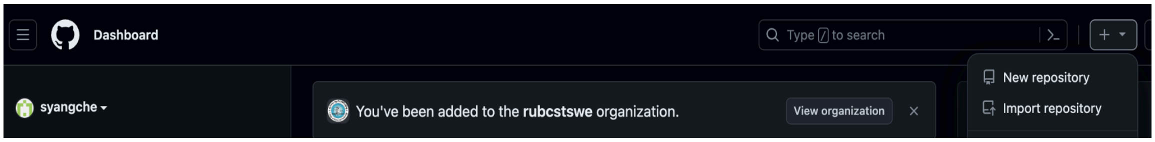
Cloning:
When a repository is created with GitHub, it's stored remotely in the cloud. You can clone a repository to create a local copy on your computer and then use Git to sync the two. This makes it easier to fix issues, add or remove files, and push larger commits.

Instructions:

1. **Creating Your First GitHub Repository**

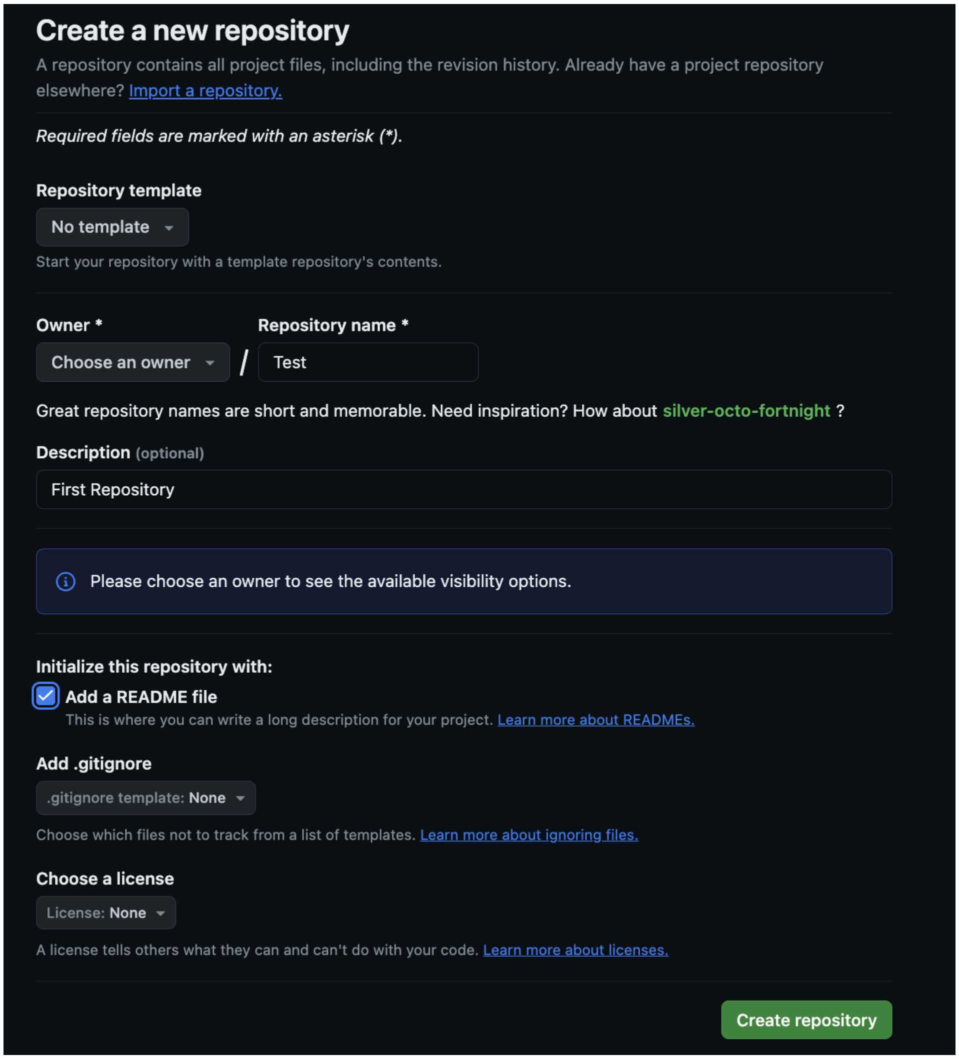
a. Log into GitHub:
    - Open your web browser and navigate to https://github.com/
    - Log in with your GitHub credentials.

b. Create a New Repository:
    - Click on the "+" icon in the top-right corner and select "New repository".



You've been added to the **rubcstswe** organization.

- Fill in the repository name and add a description if desired.
- Choose whether the repository will be public or private.
- Click on "Create repository".



Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? Import a repository.

Required fields are marked with an asterisk (*).

Repository template

No template

Start your repository with a template repository's contents.

Owner * Choose an owner / **Repository name *** Test

Great repository names are short and memorable. Need inspiration? How about silver-octo-fortnight ?

Description (optional)

First Repository

Please choose an owner to see the available visibility options.

Initialize this repository with:

☑ **Add a README file**

This is where you can write a long description for your project. Learn more about READMEs.

Add .gitignore

.gitignore template: **None**

Choose which files not to track from a list of templates. Learn more about ignoring files.

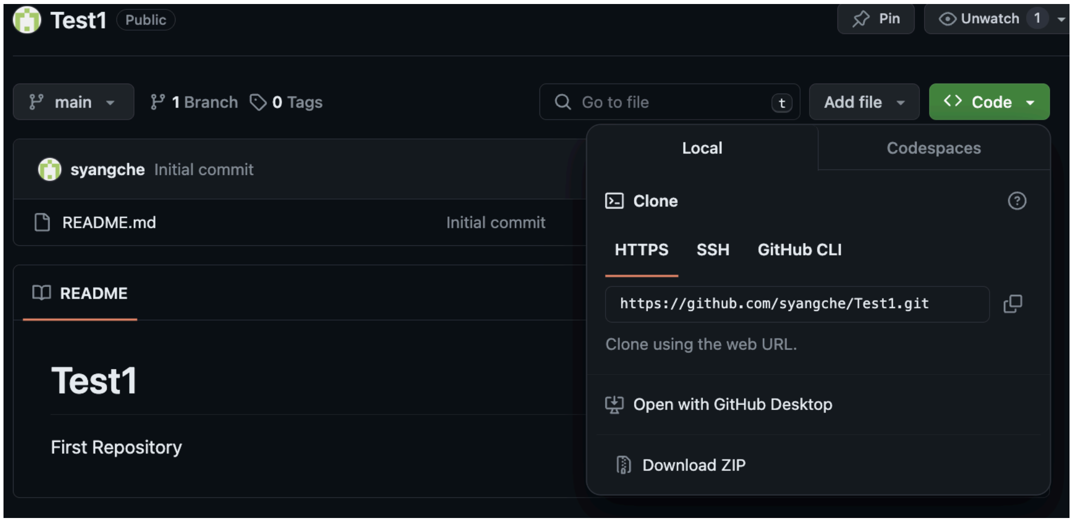
Choose a license

License: **None**

A license tells others what they can and can't do with your code. Learn more about licenses.

c. Copy the Repository Path:

- Once the repository is created, copy the HTTPS path provided on the repository page.



```
https://github.com/syangche/Test1.git
```

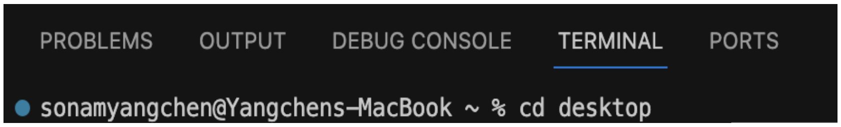
2. Cloning the Repository in VSCode

a. Open VSCode:

- Launch Visual Studio Code from your desktop or Start menu.
- Open Terminal in VSCode

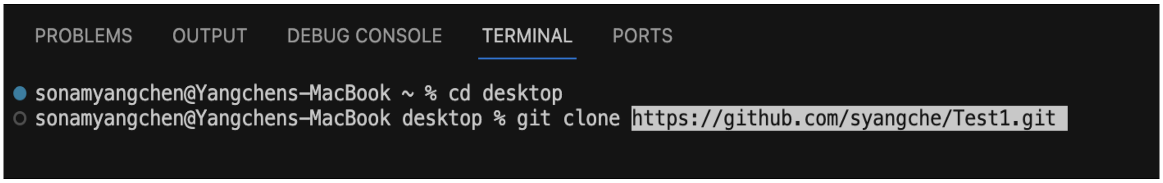
b. Clone the Repository:

- In the terminal, navigate to the directory where you want to clone the repository. In here, it is navigating to “desktop” folder.
-



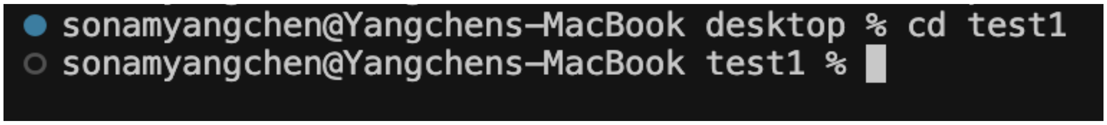
```
sonamyangchen@Yangchens-MacBook ~ % cd desktop
```

- Use the git clone command followed by the repository URL you copied earlier.



```
sonamyangchen@Yangchens-MacBook ~ % cd desktop
sonamyangchen@Yangchens-MacBook desktop % git clone https://github.com/syangche/Test1.git
```

- Once the cloning process is complete, verify that the repository has been cloned successfully. Then get into the folder that you have cloned, for an example in this case it's Test1.

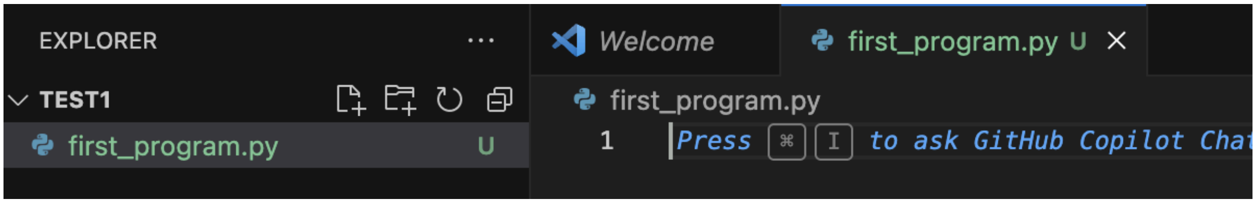


```
sonamyangchen@Yangchens-MacBook desktop % cd test1
sonamyangchen@Yangchens-MacBook test1 %
```

3. Writing a Simple Python Program

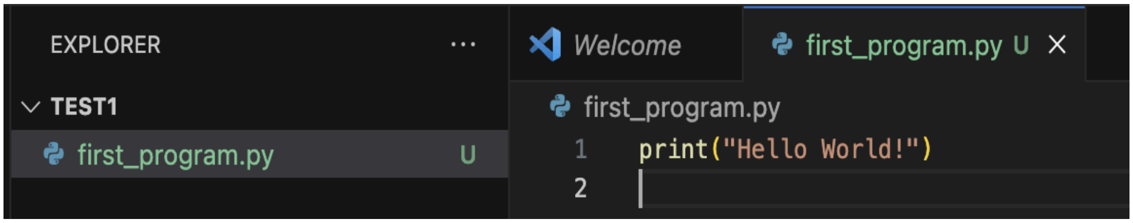
a. Create a New Python File:

- In VSCode, click on the "Explorer" icon in the sidebar.
- Right-click on the cloned repository folder and select "New File".
- Name the file first_program.py.



```
Press ⌘ I to ask GitHub Copilot Cha
```

b. Write Python Code:
- In the first_program.py file, write a simple Python program, such as:

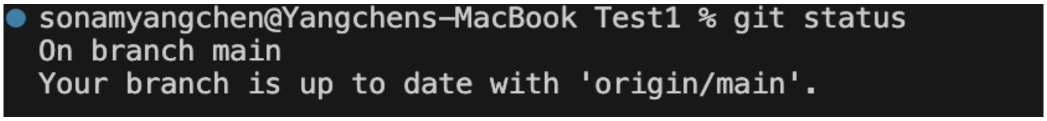


```python
print("Hello World!")

```

- Save the File and run it.

4. Adding, Committing, Checking Status, and Pushing Changes to GitHub

a. Check Status:
- In the terminal, navigate to the cloned repository directory if you're not already there.
- Use the `git status` command to check the status of the repository.
- Verify that the simple_program.py file is listed as a modified file.



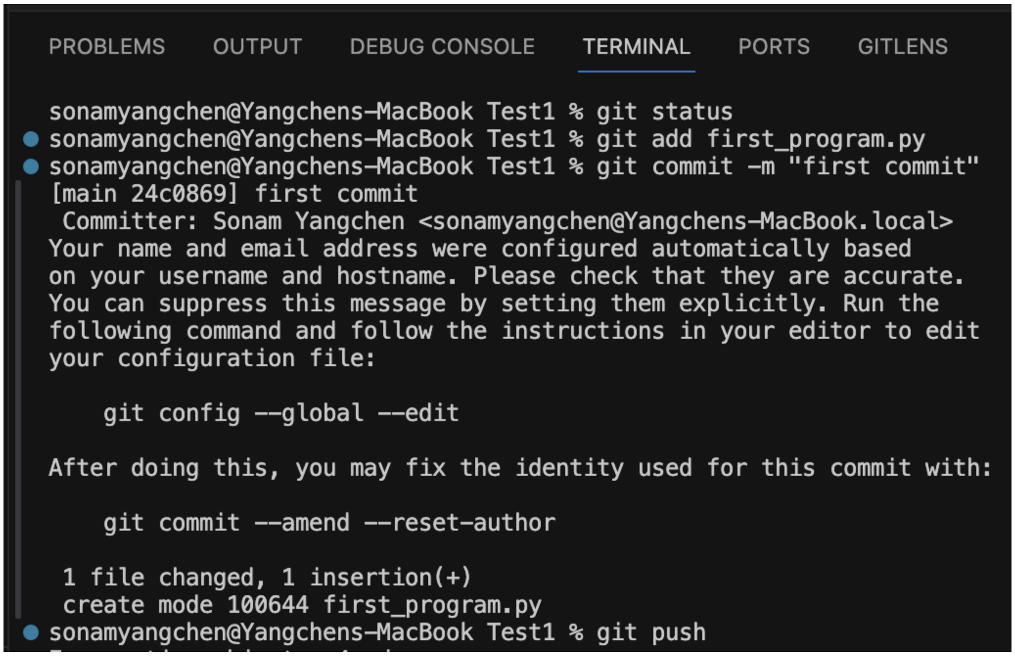
```
sonamyangchen@Yangchens-MacBook Test1 % git status
On branch main
Your branch is up to date with 'origin/main'.
```

b. Stage Changes:
- Stage the changes by using the following command:
  `git add simple_program.py`

c. Commit Changes:
- Make sure that you have added email in git bash first. To do that, run the following command.
  ```
  git config --global user.email "Add_Your_Email_Here"
  Eg: git config -global user.email
  “syangche.cst@rub.edu.bt”
  ```

- Commit the staged changes with a commit message using the following command.
  `git commit -m "First commit"`

d. Push Changes to GitHub:
- Push the committed changes to GitHub using the following command:
  `git push`

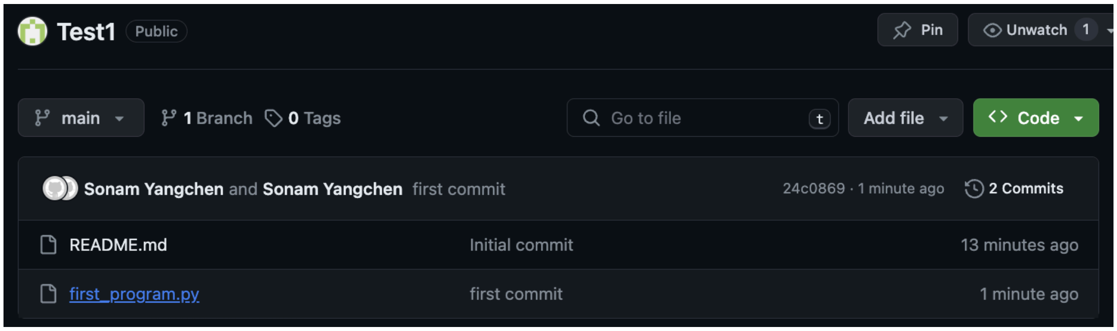


```
sonamyangchen@Yangchens-MacBook Test1 % git status
sonamyangchen@Yangchens-MacBook Test1 % git add first_program.py
sonamyangchen@Yangchens-MacBook Test1 % git commit -m "first commit"
[main 24c0869] first commit
 Committer: Sonam Yangchen <sonamyangchen@Yangchens-MacBook.local>
Your name and email address were configured automatically based
on your username and hostname. Please check that they are accurate.
You can suppress this message by setting them explicitly. Run the
following command and follow the instructions in your editor to edit
your configuration file:

    git config --global --edit

After doing this, you may fix the identity used for this commit with:

    git commit --amend --reset-author

 1 file changed, 1 insertion(+)
 create mode 100644 first_program.py
sonamyangchen@Yangchens-MacBook Test1 % git push
```

5. Viewing changes on GitHub

a. Refresh GitHub Repository Page:

- Go back to your GitHub repository page in the web browser.
- Refresh the page to see the changes reflected in the repository.



Sonam Yangchen and Sonam Yangchen first commit 24c0869 · 1 minute ago 2 Commits

README.md	Initial commit	13 minutes ago
first_program.py	first commit	1 minute ago