# Installing VSCode and Connecting it with Anaconda*

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## Contents



*Many thanks to Alejandro Sanchez Becerra for his help with the tutorials.

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# 1 Introduction

This tutorial will guide students new to computer programming through the process of installing Visual Studio Code (VSCode) and connecting it with Anaconda. We will cover each step in detail to ensure a smooth setup process. If you have any questions or encounter issues during the installation, please feel free to ask for help from me (danilo.freire@emory.edu) or the QTM151 teaching assistants.

# 2 Why VSCode?

VSCode is a popular, free code editor developed by Microsoft. According to the 2023 Stack Overflow Developer Survey, VSCode is the most preferred integrated development environment (IDE) among developers. Here are some reasons to choose VSCode for Python development:

- Extensive Features and Extensions: VSCode offers several built-in features such as syntax highlighting, IntelliSense, and debugging. It also features hundreds of extensions that can increase its functionality, such as GitHub Copilot.
- Cross-Platform Compatibility: VSCode is available for Windows, macOS, and Linux, so you can use it regardless of your operating system.
- Active Community and Support: The active community around VS Code means continuous updates and many community-driven extensions now and in the future.
- Integration with Git and Other Tools: VSCode seamlessly integrates with version control systems like Git (as Microsoft owns GitHub), making it easier to manage your code repositories and collaborate with others.

With that said, let us start the installation process.

# 3 Download and Install VSCode

- Please visit the official Visual Studio Code website: https://code.visualstudio.com/.

- Click on the “Download” button for your operating system (Windows, macOS, or Linux).

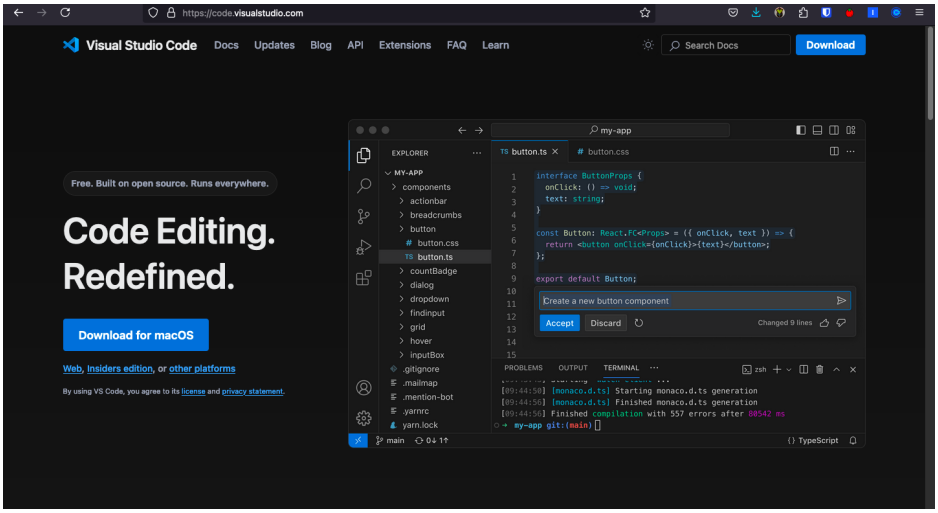


Figure 1: VSCode Website

## 3.1 For Windows Users

- Run the “VSCodeUserSetup-{version}.exe” file.

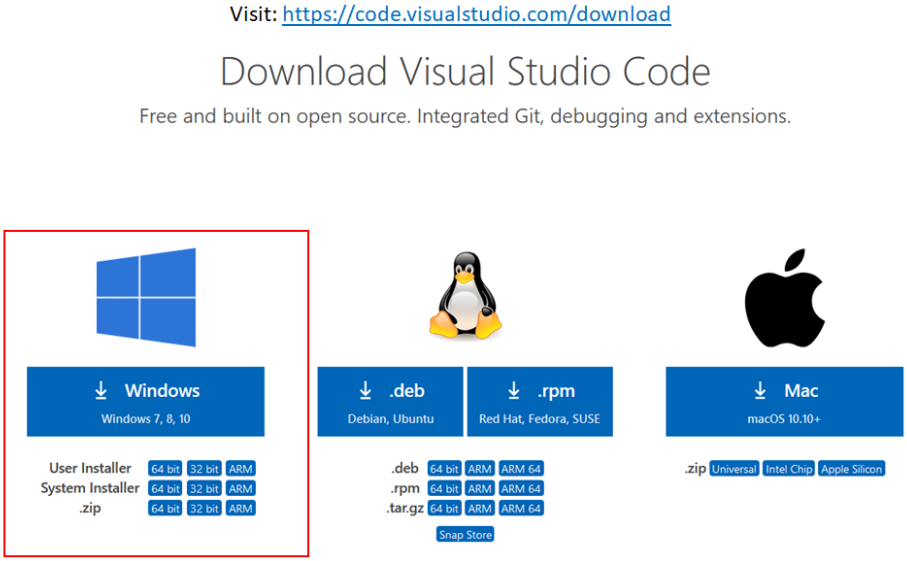


Figure 2: Windows Installation

- Accept the license agreement and click “Next”.

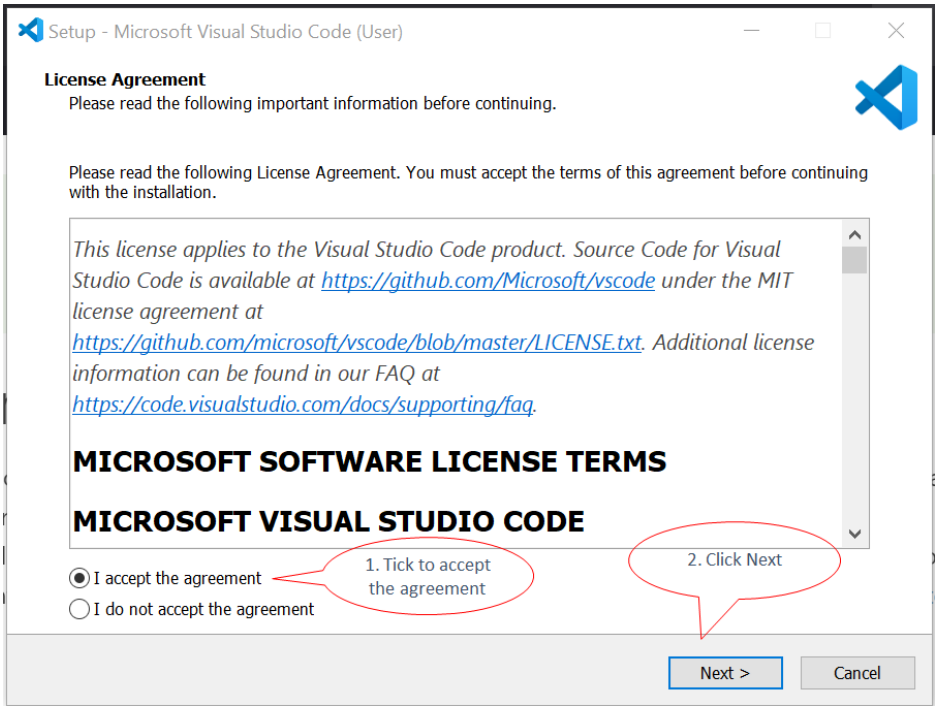


Figure 3: License Agreement

- Choose the installation location (default is recommended) and click “Next”.

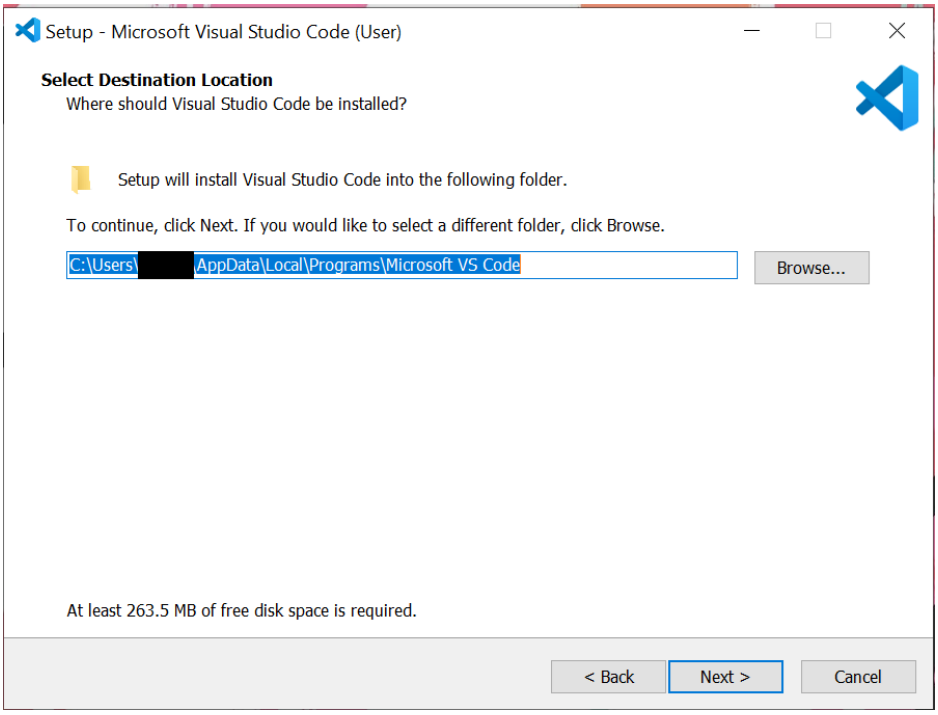


Figure 4: Installation Location

- Select additional tasks if desired (e.g., adding “Open with Code” action) and click “Next”.

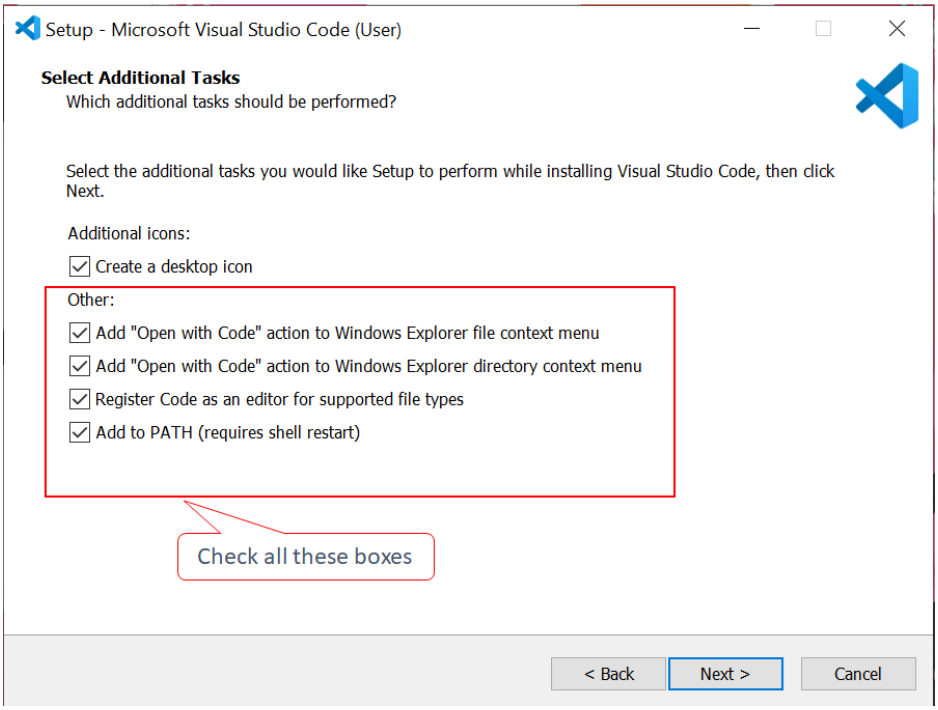


Figure 5: Additional Tasks

- Click “Install” to begin the installation process.

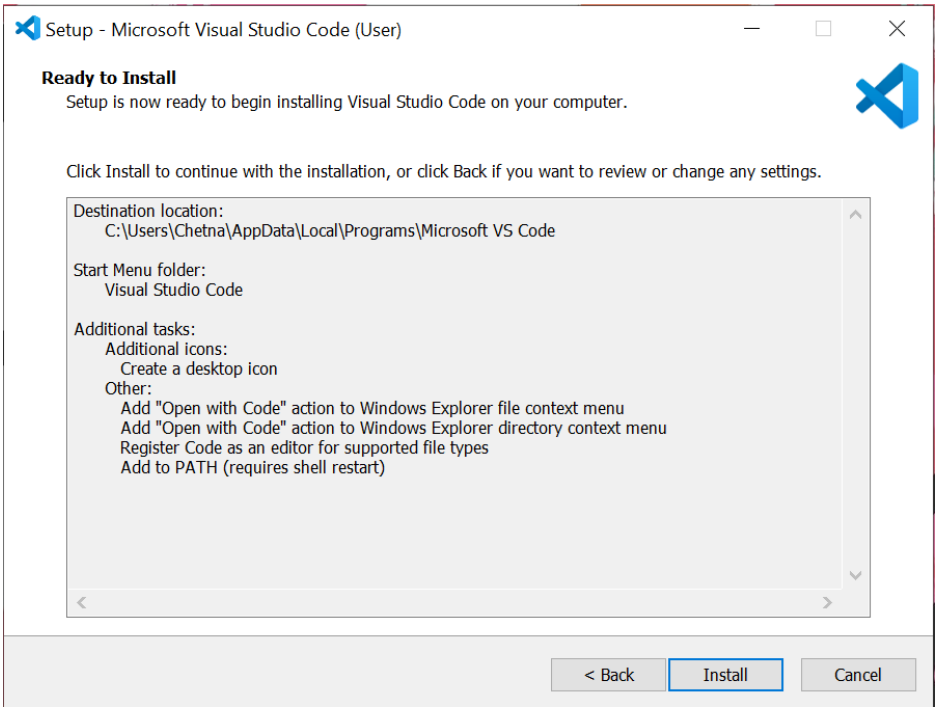


Figure 6: Installation Progress

## 3.2 For macOS Users

- Open the downloaded .zip file and drag the VS Code application to the Applications folder.


Figure 7: Unzip file


Figure 8: Drag to Applications folder

## 3.3 For Linux Users

- Follow the distribution-specific instructions provided on the VSCode website.

## 3.4 VSCode for the Web and GitHub Codespaces

Microsoft has just released **VSCode for the Web**, a web-based version of the editor that runs in the browser. You can access it at `https://vscode.dev/`. However, the web version does not have all the features of the desktop version, such as access to a terminal to run Python code.

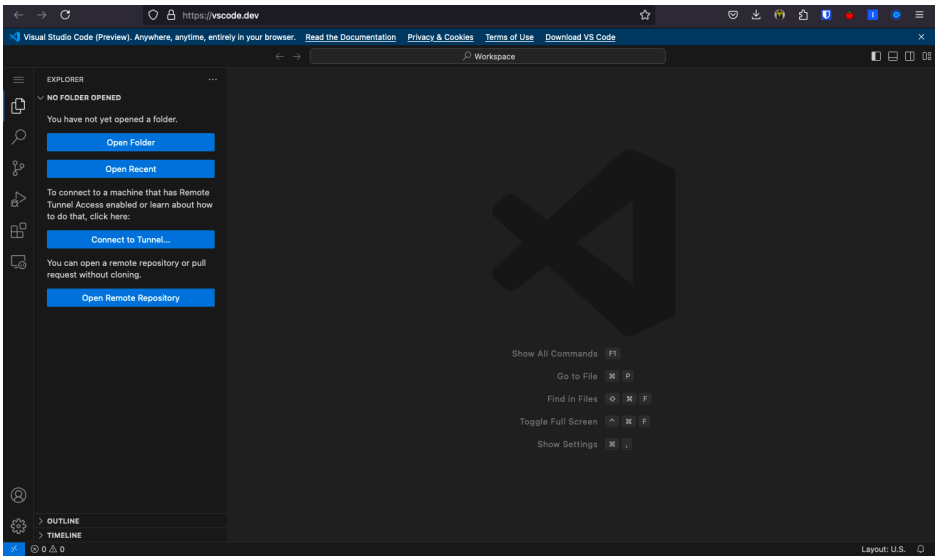


Figure 9: VSCode for the Web

You can also check GitHub Codespaces, which allows you to run VS Code in the cloud and access it from any device. Individual users get 60 hours of free usage per month.

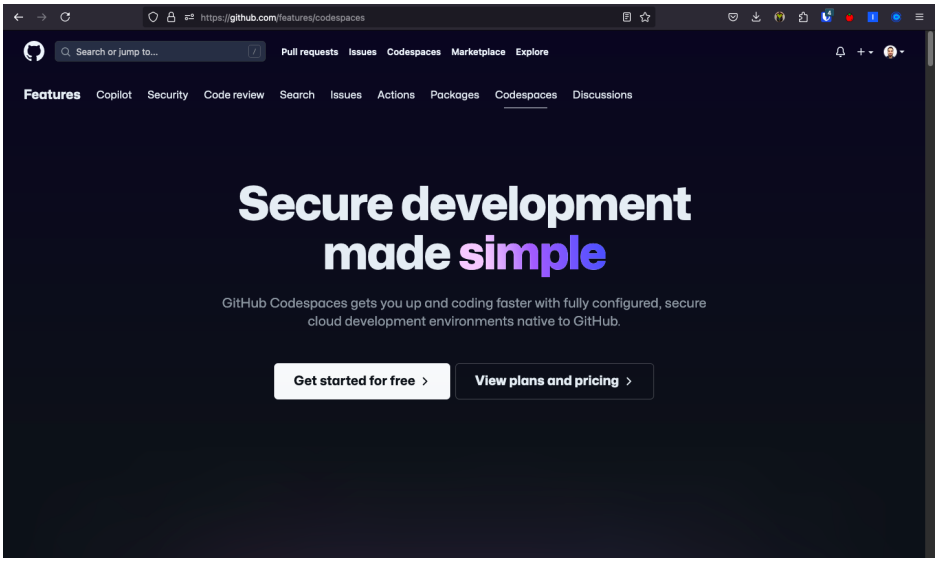


Figure 10: GitHub Codespaces

### 3.5 Launch VSCode

- After installation, launch VSCode.
- You should see the welcome screen with options to start a new project or open existing files.

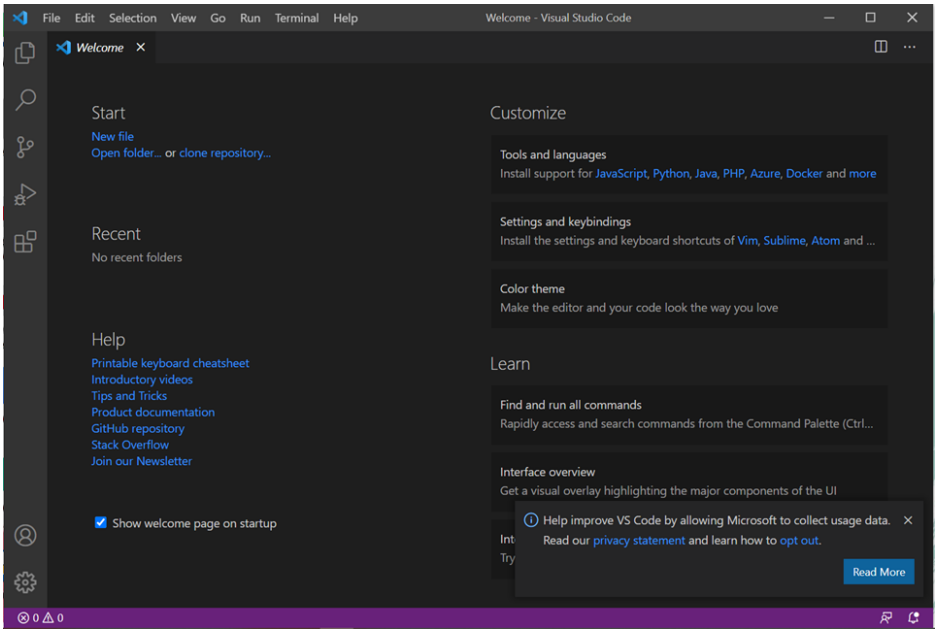


Figure 11: VS Code Welcome Screen

### 3.6 Getting Started

Microsoft has published a series of introductory videos to help you get started with VSCode. You can also read the official documentation for more detailed information.

## 4 Installing Anaconda

Anaconda is a distribution of Python that includes many popular packages for data science and scientific computing. It also provides a convenient way to manage different Python environments.

### 4.1 Download Anaconda

- Visit the Anaconda website: `https://www.anaconda.com/products/distribution`. You can skip the registration if you prefer.

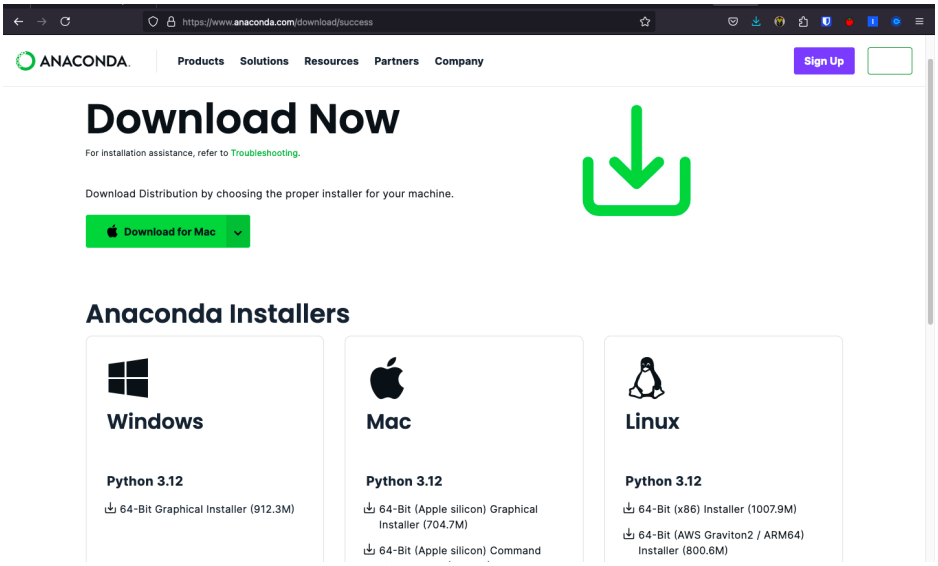


Figure 12: Anaconda Website

- Click on the “Download” button for your operating system.

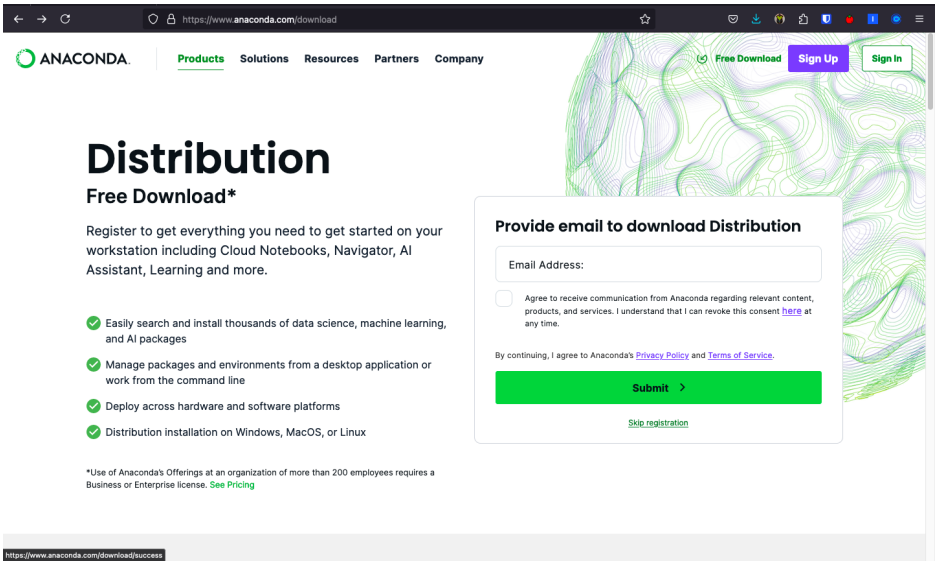


Figure 13: Download Anaconda

## 4.2 For Windows Users

- Choose “Just Me” for the installation type (recommended).

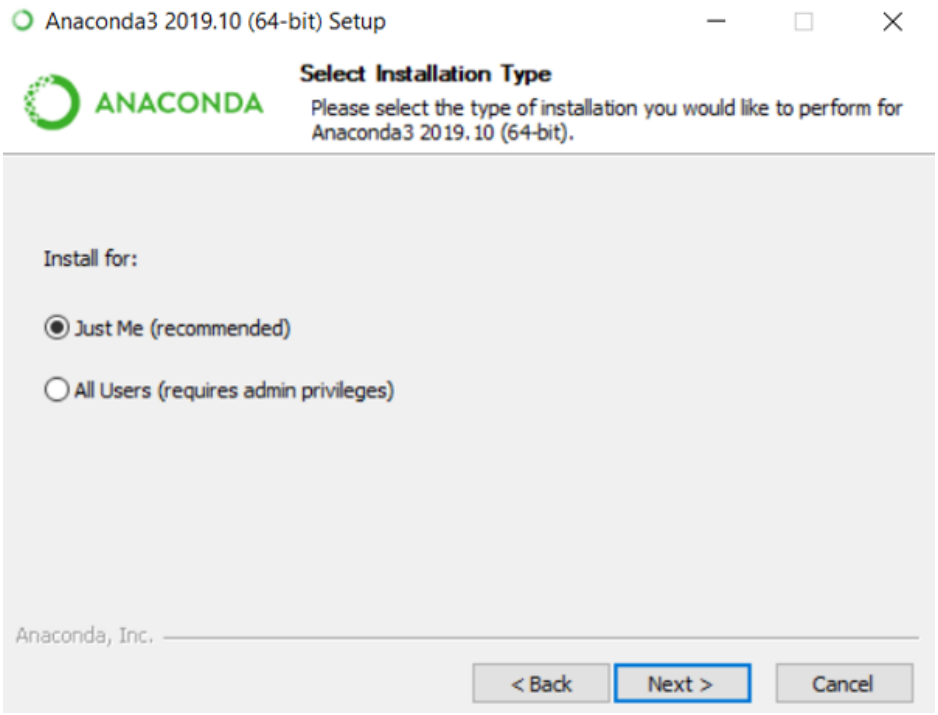


Figure 14: Anaconda Installation

- Select the installation location (default is fine).

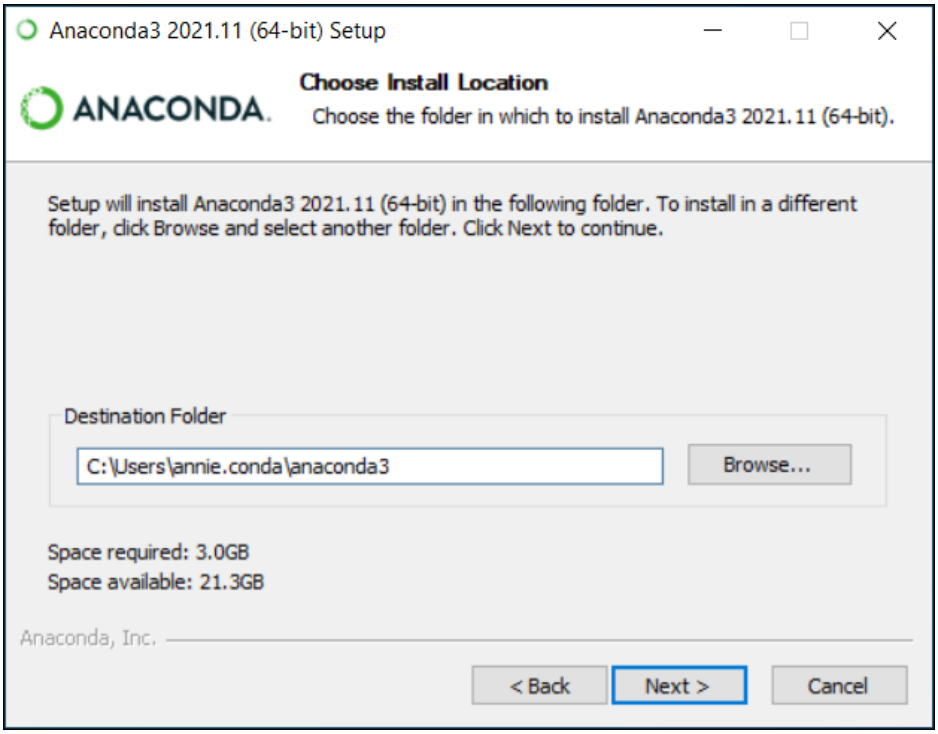


Figure 15: Anaconda Installation

- In the “Advanced Options” section, check “Add Anaconda to my PATH environment variable” and “Register Anaconda as my default Python”.

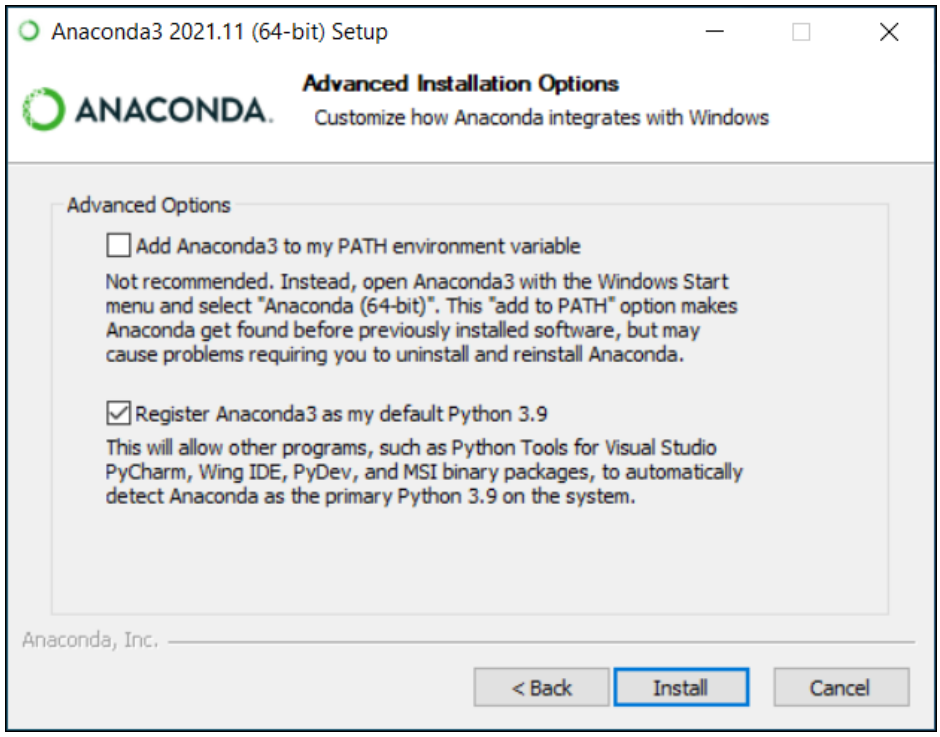


Figure 16: Advanced Options

## 4.3 For macOS Users

- Open the downloaded .pkg file and follow the installation instructions. You can install Anaconda for all users.

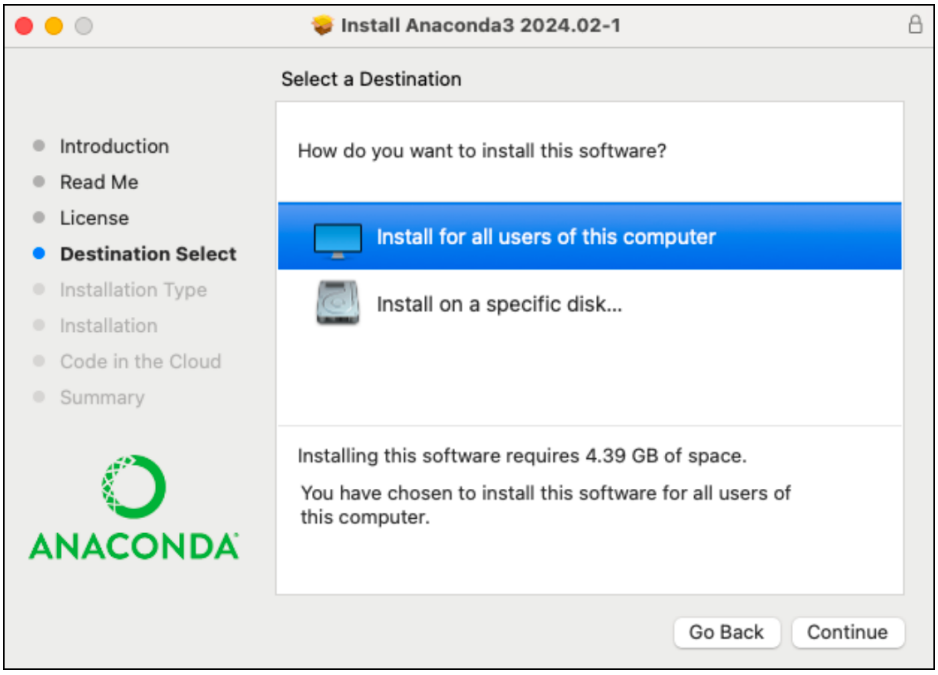


Figure 17: Anaconda Installation

- Follow the on-screen instructions, accepting the default options.

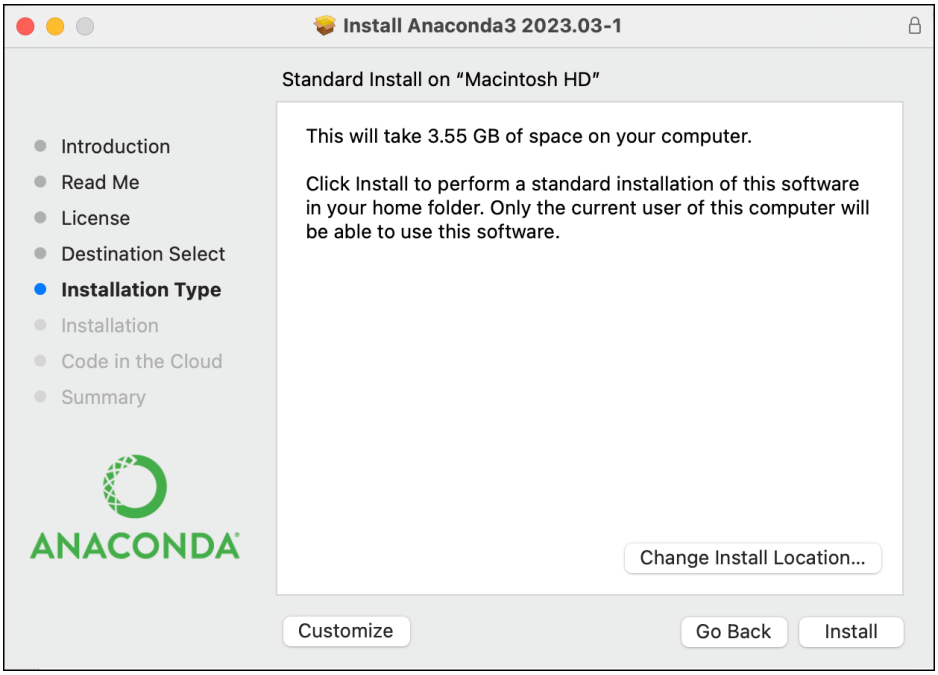


Figure 18: Anaconda Installation

## 4.4 For Linux Users

- Please follow the distribution-specific instructions provided on the Anaconda website.

## 4.5 Verify Anaconda Installation

- Open a new terminal or command prompt.
- Type `conda --version` and press Enter. You should see the Conda version number.
- Type `python --version` and press Enter. You should see the Python version installed by Anaconda.

# 5 Connecting VS Code with Anaconda

Now that both VS Code and Anaconda are installed, we will connect them to use Anaconda's Python distribution within VSCode.

## 5.1 Install the Python and Jupyer Extensions in VSCode:

- Open VSCode and click on the Extensions view icon on the left sidebar (it looks like four squares). Search for "Python" in the search bar.


Figure 19: Python Extension in VSCode

- Find the official Python extension by Microsoft and click "Install".
- Please also install the Jupyter extension for VSCode to work with Jupyter notebooks.

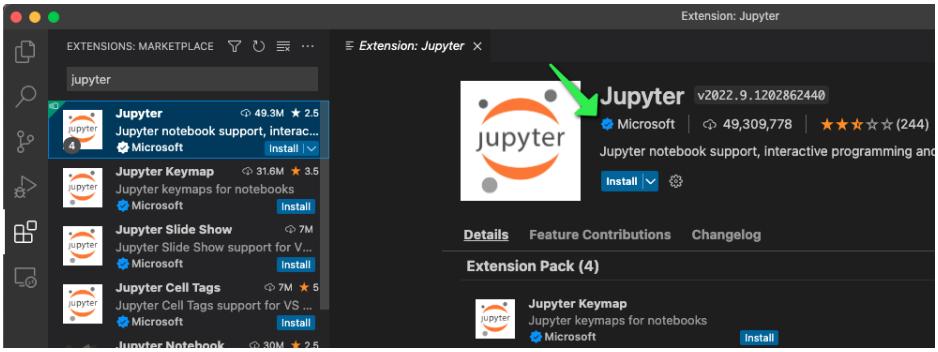


Figure 20: Jupyter Extension in VSCode

## 5.2 Select the Anaconda Python Interpreter:

- Create a Python file in VS Code. Click on the "New File" button in the top left corner and save it with a `.py` extension.

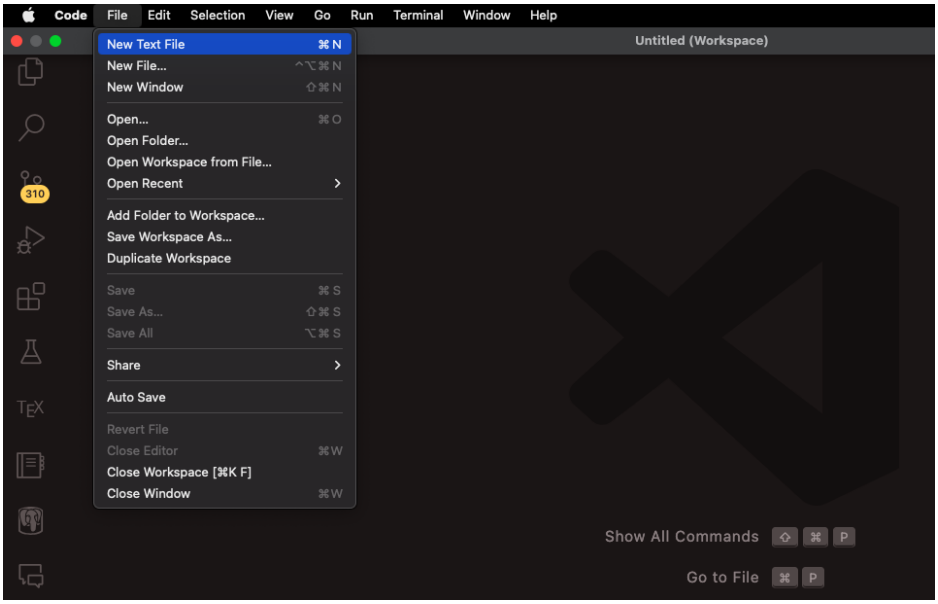


Figure 21: New Python File in VSCode

- Include the following code in the file:

```
import sys
print(sys.version)
print(sys.executable)
```

- Save the file again. Here I saved it as `testing-anaconda.py`.


Figure 22: Save Python File in VSCode

- Press `Ctrl+Shift+P` (Windows/Linux) or `Cmd+Shift+P` (macOS) to open the Command Palette.

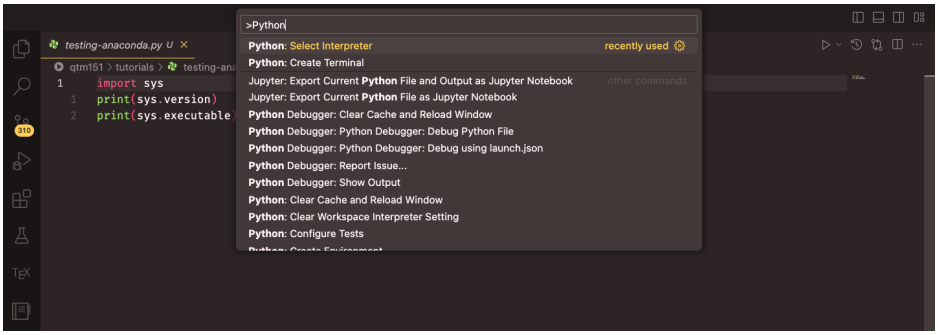


Figure 23: Command Palette in VSCode

- Type “Python: Select Interpreter” and select it from the list.

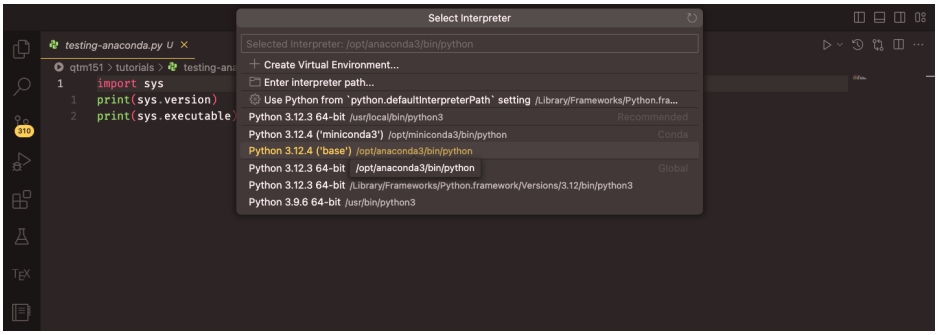


Figure 24: Select Python Interpreter

- Choose the Anaconda Python interpreter from the list. It should be labelled something like “Python 3.x.x (‘base’: conda)”.

## 5.3 Verify the Connection:

- Please click on the “Run” button at the top right corner of the editor to execute the code in your .py file. Select “Run Current File in Dedicated Terminal”

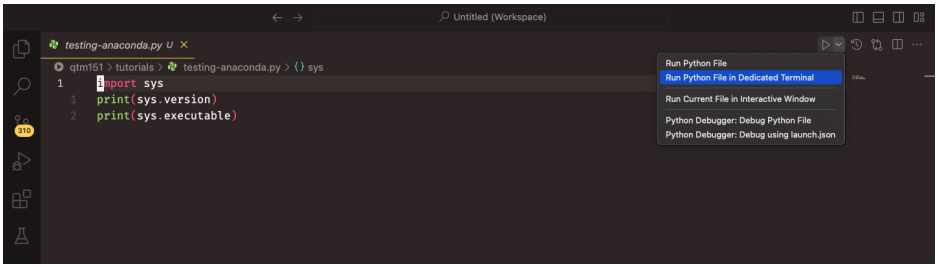


Figure 25: Run Python File in VSCode

- The output should show the Anaconda Python version and its location.

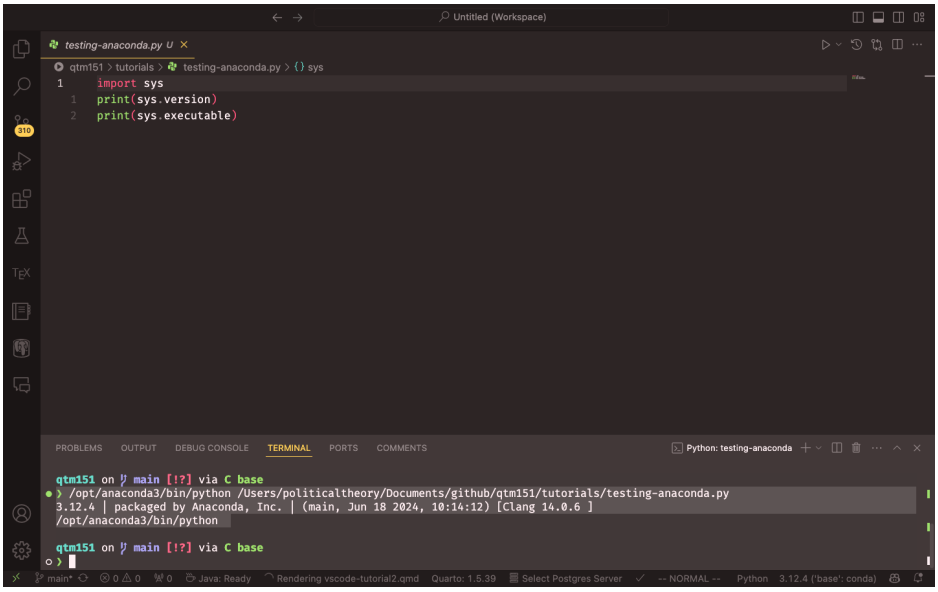


Figure 26: Python Output in VSCode

# 6 Additional VSCode Settings for Python Development

These suggested settings will help you work more efficiently with Python in VSCode.

## 6.1 Enable Auto Save:

- Go to File > Auto Save to automatically save your work.

### 6.2 Configure Python Formatting:

- Press `Ctrl+Shift+P` (Windows/Linux) or `Cmd+Shift+P` (macOS).
- Type "Preferences: Open Settings (JSON)" and select it.
- Add the following settings:

```
{
    "python.formatting.provider": "autopep8",
    "editor.formatOnSave": true,
    "python.linting.enabled": true,
    "python.linting.pylintEnabled": true
}
```

### 6.3 Install Useful Python Extensions:

- Python Snippets 3.
- Python Docstring Generator.
- Python Test Explorer for Visual Studio Code.
- Python Indent.
- GitHub Copilot and GitHub Copilot Chat (optional). Please sign up for a free educational license at `https://github.com/education/students`.

## 7 Conclusion

You have now successfully installed Visual Studio Code and connected it with Anaconda. Remember to create and activate appropriate Conda environments for different projects to manage dependencies effectively.

For further information and advanced usage, refer to the following resources:

- VSCode Python Tutorial: `https://code.visualstudio.com/docs/python/python-tutorial`

- Anaconda Documentation: https://docs.anaconda.com/
- VSCode Documentation: https://code.visualstudio.com/docs

Happy coding!