1 Main Points

- Git/GitHub
- Markdown
- Python classes

2 Installation Requirements:

- Python (latest version most likely)
- Git
- GitHub desktop (recommended)
- Text editor
    - SublimeText (recommended)
    - Notepad++ (also good)

3 Git/GitHub

Before doing our assignments/writing code, we need to have all necessary files.

Git allows us to communicate with a service that houses our files and code, like GitHub

Credit: https://www.softwaretestingmaterial.com/git-vs-github/

Major steps:

- Clone
  - Download version of online codebase to your computer
- Commit
  - "Record" your changes and prepare to merge with online codebase
- Push
  - Your changes "recorded" in your commit are merged into the online codebase
- Pull
  - You update your local codebase to the most recently online codebase

3 very common ways to use Git:

1. Command line
2. GUI tools
3. IDE

Say we have our repo:

https://github.com/IDS6145-Fall2022/Assignment-1

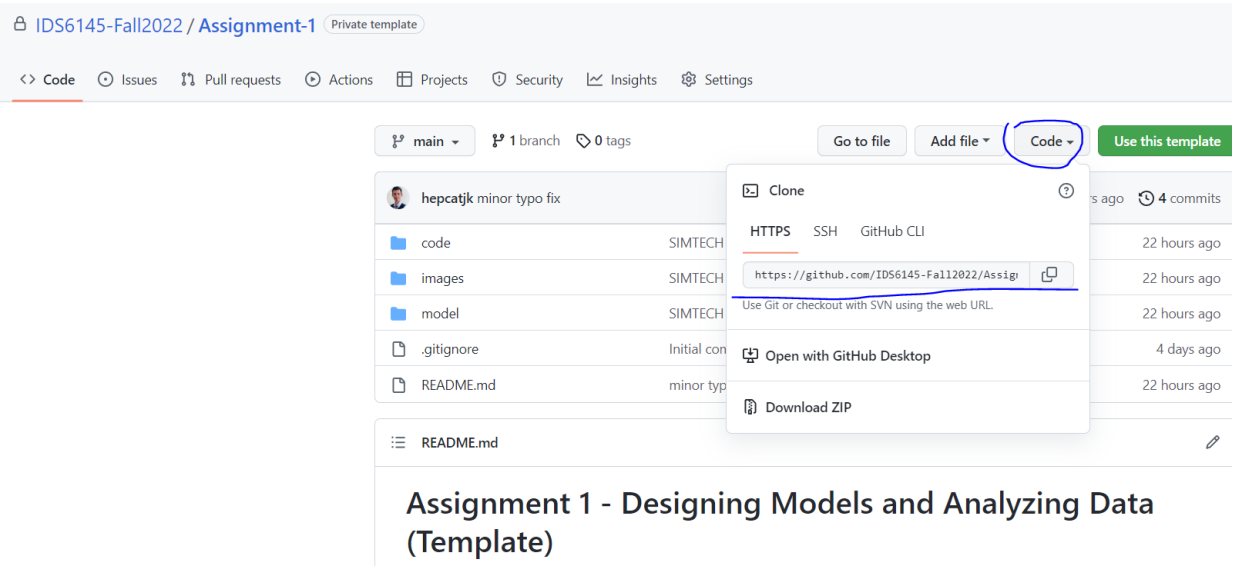
3.1 COMMAND LINE

Steps:

1. Navigate command line to an empty directory

```
pushd D:\Test
```

2. Find GitHub repo URL



3. 'Clone' that repo. Basically, this copies it from the cloud to your empty directory

```
git clone https://github.com/IDS6145-Fall2022/Assignment-1.git
```

4. Make your changes to the code/files on your local machine
5. Navigate command line to the new folder that was created

```
cd Assignment-1
```

6. 'Commit' your changes to prepare them to be pushed to the GitHub cloud

```
git commit -am "Message about your changes"
```

7. 'Push' your changes to the cloud, ensuring that your changes are now available for all to later 'Pull' from

```
git push https://github.com/IDS6145-Fall2022/Assignment-1.git
```

3.2 GUI Tools

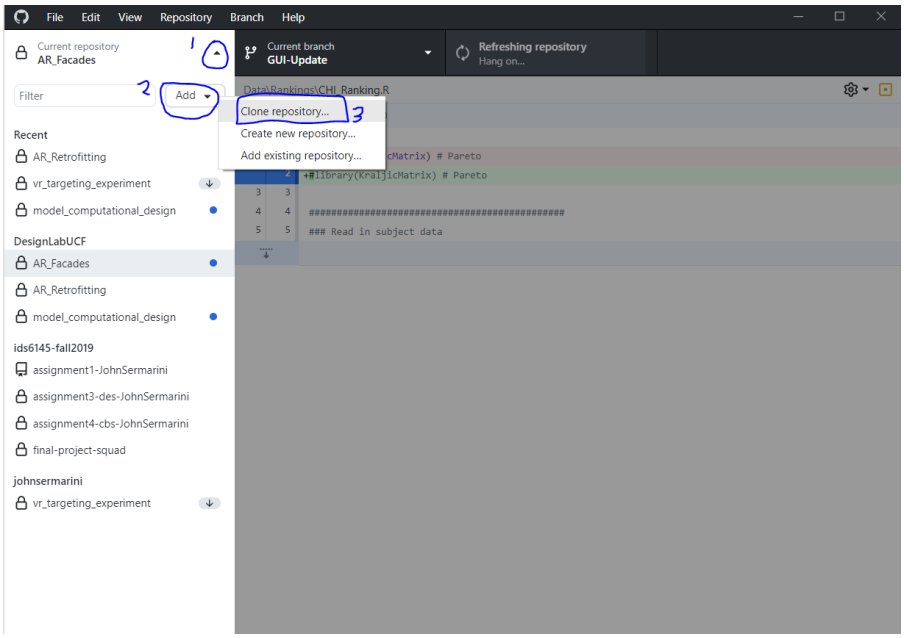
Examples:

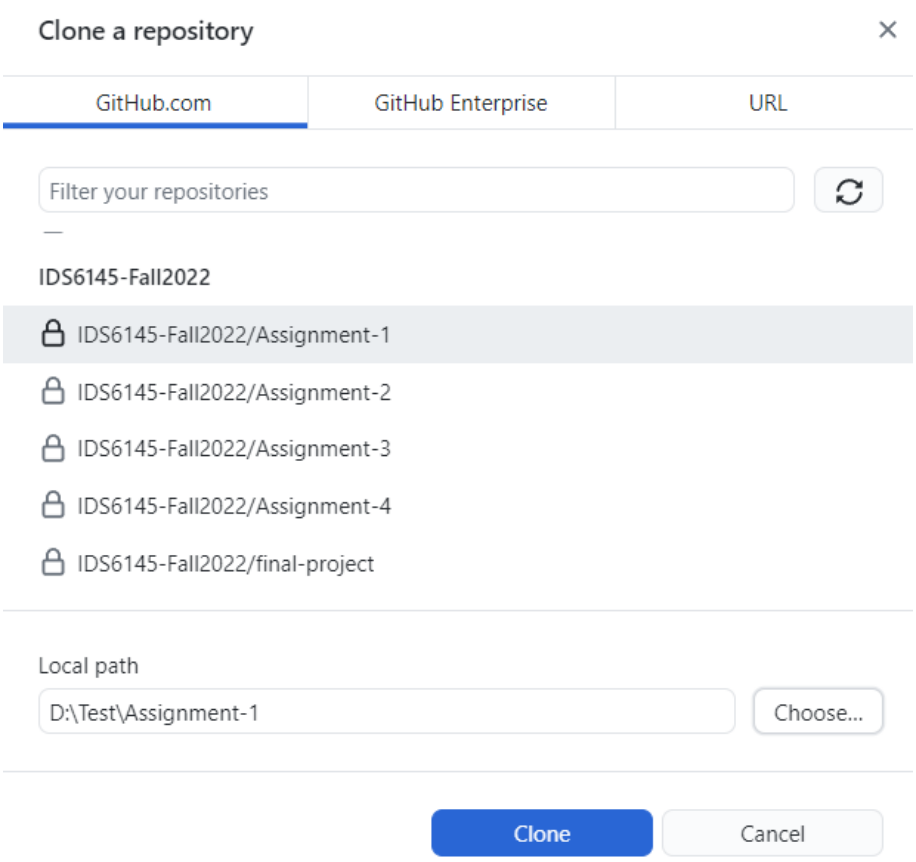
- GitHub Desktop
- GitKracken
- TortoiseGit

I recommend **GitHub Desktop**. Very simple and easy, least “code-y” of all of them. Very versatile for extended to future projects

https://desktop.github.com/

1. ‘Clone’ that repo. Basically, this copies it from the cloud to your empty directory





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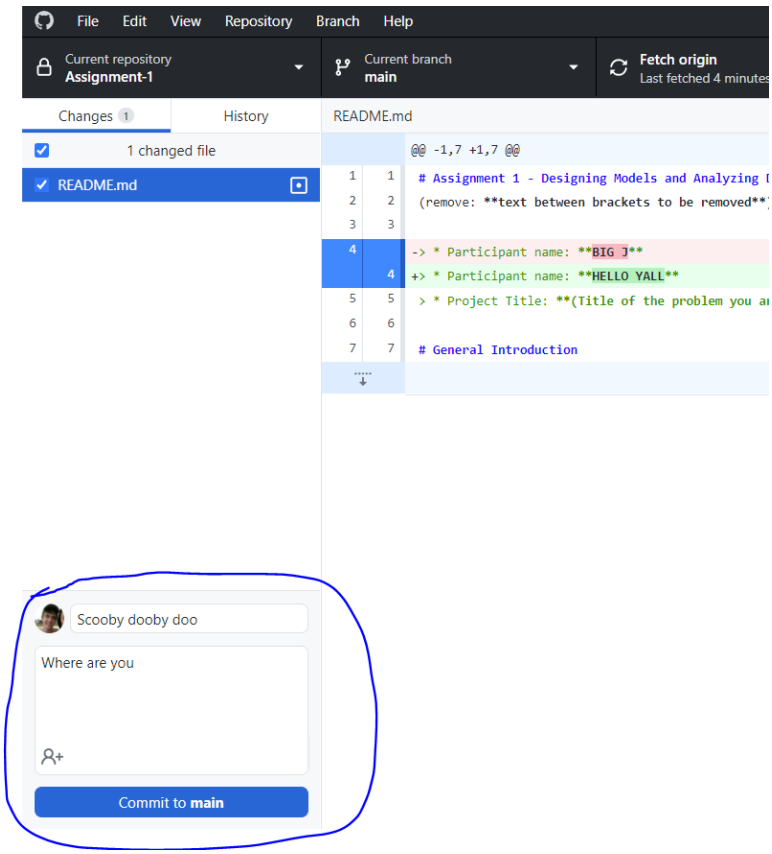
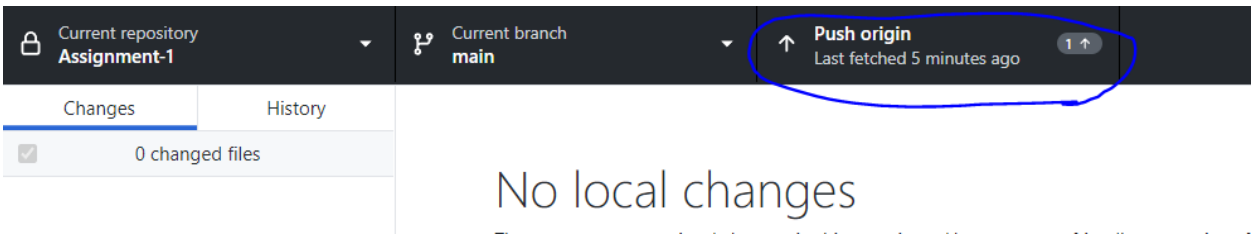


4. 'Push' your changes to the cloud, ensuring that your changes are now available for all to later 'Pull' from

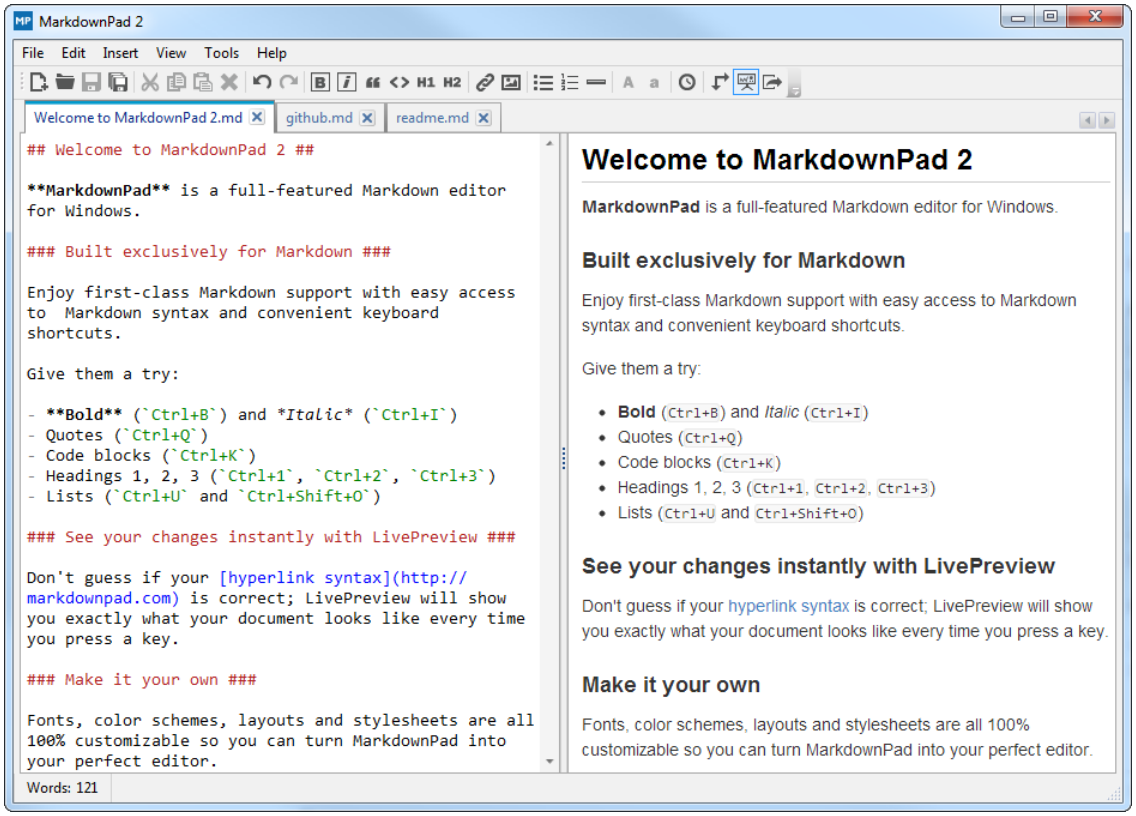


3.3 IDE

Don't do this. Too editor specific. Not general enough. Clunky.

4 MARKDOWN

Somewhere between Word Processing software and a text editor. Very common in GitHub repos. It's like HTML and making your MySpace page again, but for coding README's. How fun! Caps sensitive.



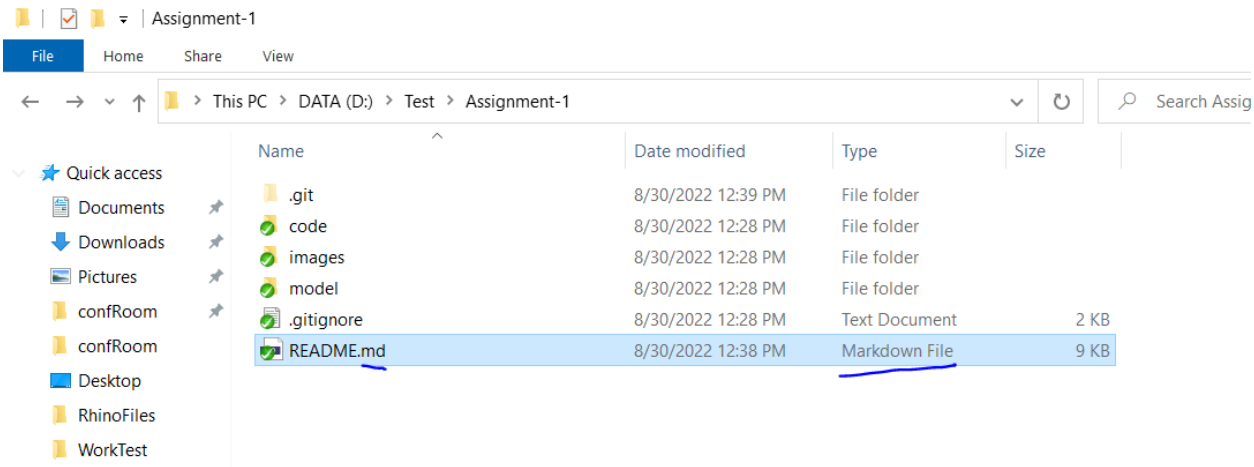
Suggestions:

http://pad.haroopress.com/

Style guide:

https://www.markdownguide.org/basic-syntax/

Example:



5 PYTHON

5.1 CHOOSING YOUR TOOLS:

1. Command line and text editor
2. IDE

5.1.1 Command Line and Text Editor

Write your code in a text editor as raw text in a file

Run that file using python in command line

Common Text Editors:

SublimeText (recommended)

Notepad++

Atom

1. Create script and save it. File extension must be .py
2. In command line, navigate to the script's directory.
3. Run script using the command below:

```
python ScriptName.py
```

4. Bask in your success

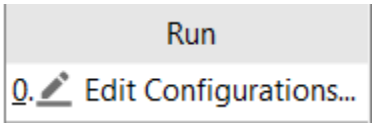
5.1.2 IDE

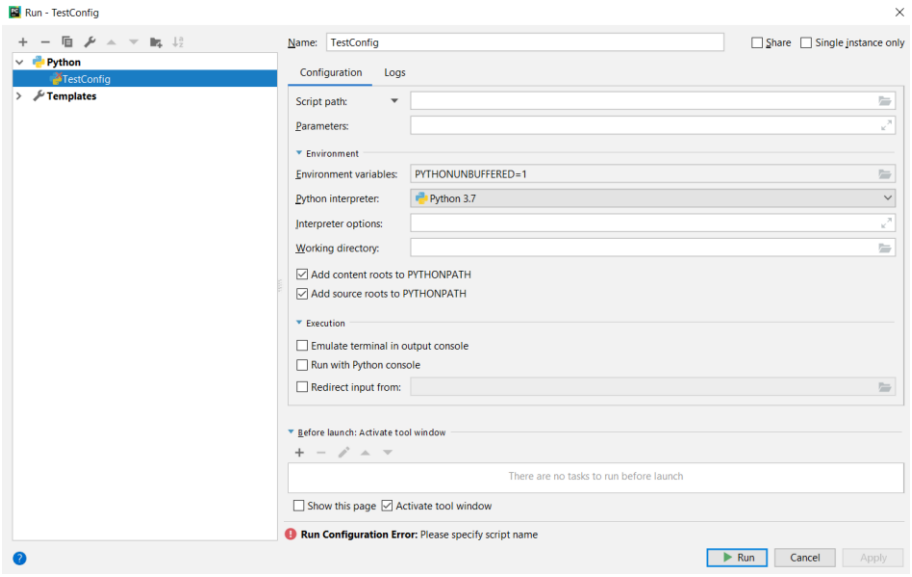
Open your code in the IDE and run it

Common Python IDE's:

PyCharm

1. Open your script file in PyCharm
2. Select Run > Run… (for first time) or Run > Run 'Config'Name (for sequential times)
3. If necessary, make a config file. Default settings should be ok, but you will need to give it a name. This is the info (AKA what version of Python to use, what libraries to use, etc.) needed to actually run





4. Bask in your success

5.2 PIP-ING LIBRARIES

Python's beauty is in its simplicity and modularity

Very plug-in friendly and community oriented

Pip is an incredibly useful built-in tool for installing code libraries created by others. It looks for online libraries posted to the **Python Package Index** (very GitHub-esque 😉) and automatically installs them and tells your local Python where to look for them.

Example: **Matplotlib** (https://matplotlib.org/)

5.2.1 Command Line and Text Editor

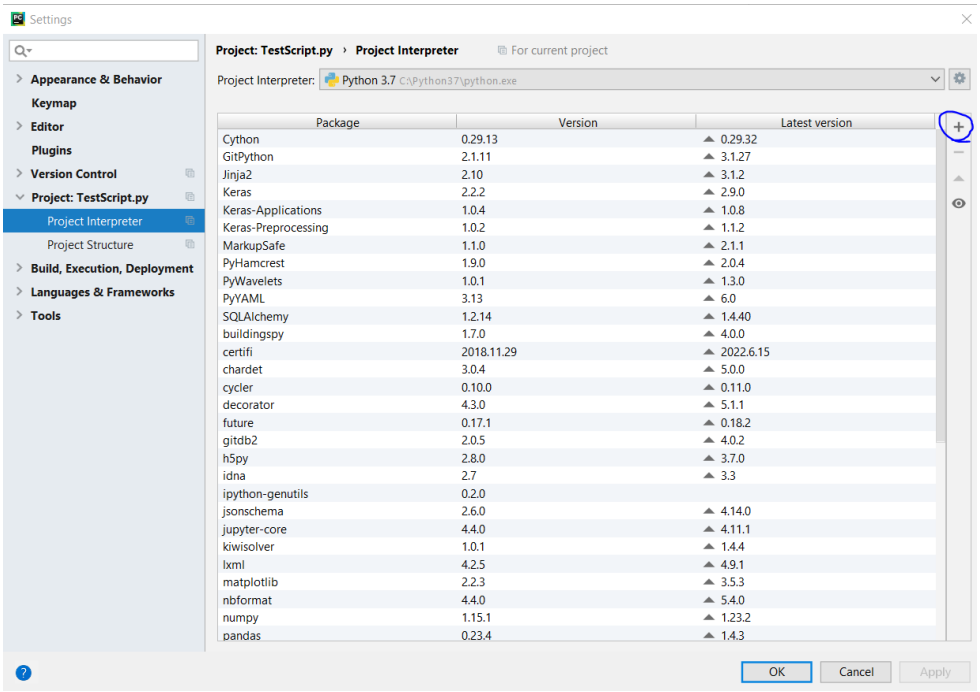
This is a CLASSIC python plotting library. To install it:

1. Open up command line
2. Enter the following line

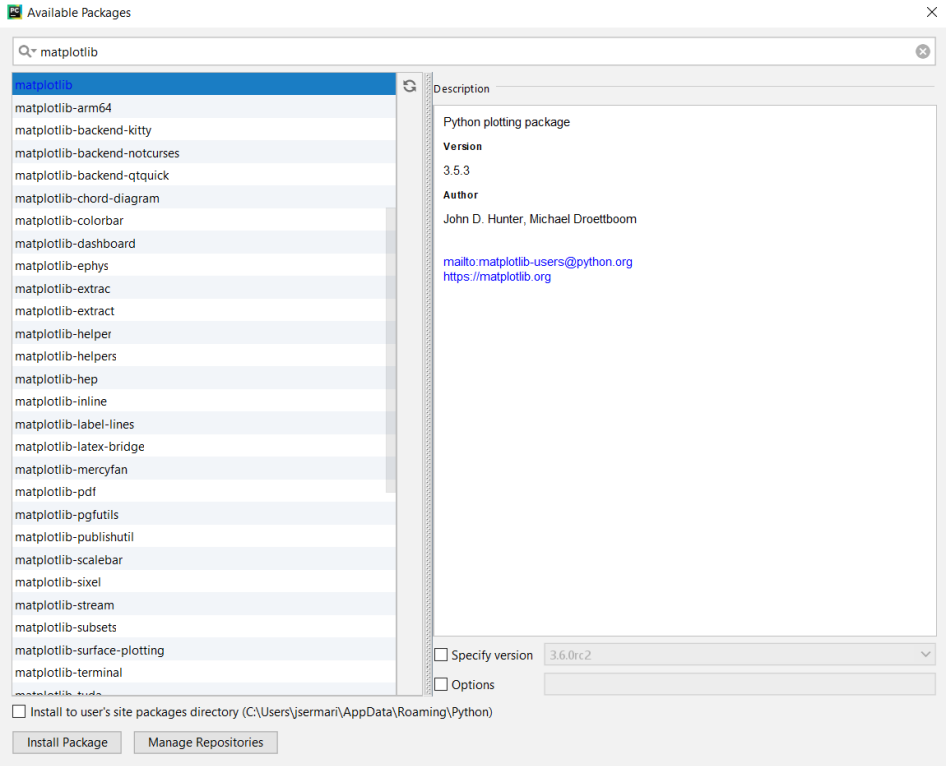
```
pip install Matplotlib
```

5.2.2 PyCharm

1. Open up your file/project
2. File > Settings
3. On the left of the pop-up window: Project: ProjectName > Project Interpreter
4. Select the installed version of python at the top
5. Click the '+' on the right to install a new library



6. Locate and install the desired library. These installations are project specific



5.3 PYTHON CLASSES/UML:

See provided scripts.

https://app.diagrams.net/

We are going to translate THIS to code