Local Environment Setup & Source Code Management Guideline

1. Download & install Anaconda distribution
    a. Link: https://docs.anaconda.com/anaconda/install/
    b. Verify the installation : conda - - version

```
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda --version
conda 4.8.3
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ %
```

    c. Create virtual environment : conda create --name env_name

```
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda create --name ai_ml_env
Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.8.3
  latest version: 25.1.1

Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /opt/anaconda3/envs/ai_ml_env



Proceed ([y]/n)? y

Preparing transaction: done
Verifying transaction: done
Executing transaction: done
#
# To activate this environment, use
#
#     $ conda activate ai_ml_env
#
# To deactivate an active environment, use
#
#     $ conda deactivate

(base) iroshanaberathne@Iroshans-MacBook-Pro ~ %
```

    d. List virtual environments : conda env list

```
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda env list
/opt/anaconda3/lib/python3.8/multiprocessing/resource_tracker.py:216: UserWarni
  warnings.warn('resource_tracker: There appear to be %d '
# conda environments:
#
base                  *  /opt/anaconda3
ai_ml_env                /opt/anaconda3/envs/ai_ml_env
new_env                  /opt/anaconda3/envs/new_env
tf                       /opt/anaconda3/envs/tf

(base) iroshanaberathne@Iroshans-MacBook-Pro ~ %
```

e. Activate the virtual environment : conda activate env_name

```
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda activate ai_ml_env
(ai_ml_env) iroshanaberathne@Iroshans-MacBook-Pro ~ %
```

f. Deactivate the virtual environment : conda deactivate

```
(ai_ml_env) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda deactivate
(base) iroshanaberathne@Iroshans-MacBook-Pro ~ %
```

2. Enable Visual Studio Code Editor
   a. Install Anaconda navigator if not installed

```
(ai_ml_env) iroshanaberathne@Iroshans-MacBook-Pro ~ % conda install anaconda-navigator

Collecting package metadata (current_repodata.json): done
Solving environment: done


==> WARNING: A newer version of conda exists. <==
  current version: 4.8.3
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Please update conda by running

    $ conda update -n base -c defaults conda



## Package Plan ##

  environment location: /opt/anaconda3/envs/ai_ml_env

  added / updated specs:
    - anaconda-navigator


The following packages will be downloaded:

    package                    |            build
    ---------------------------|-----------------
    anaconda-anon-usage-0.5.0  |py312hfb7c958_100          32 KB
    anaconda-cli-base-0.4.1    |  py312hecd8cb5_1          31 KB
    anaconda-client-1.13.0     |  py312hecd8cb5_0         835 KB
```
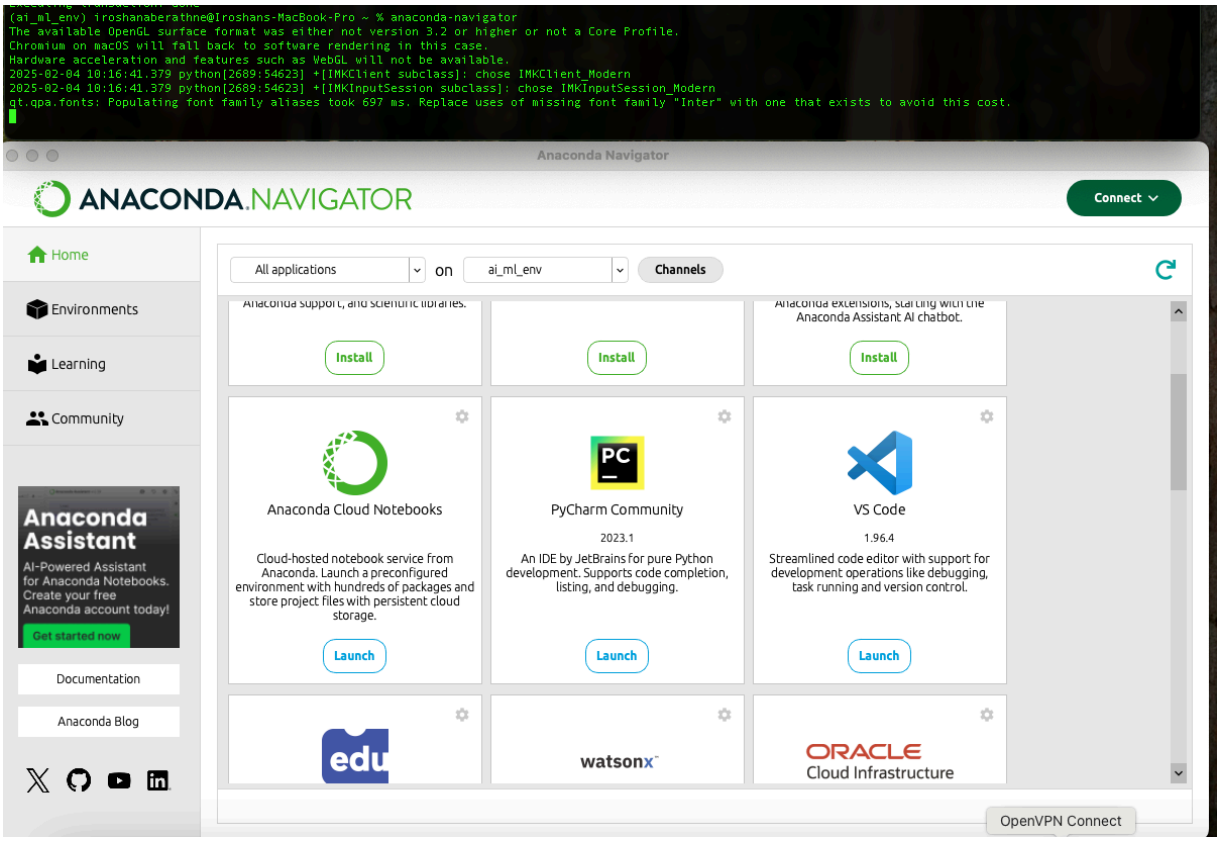
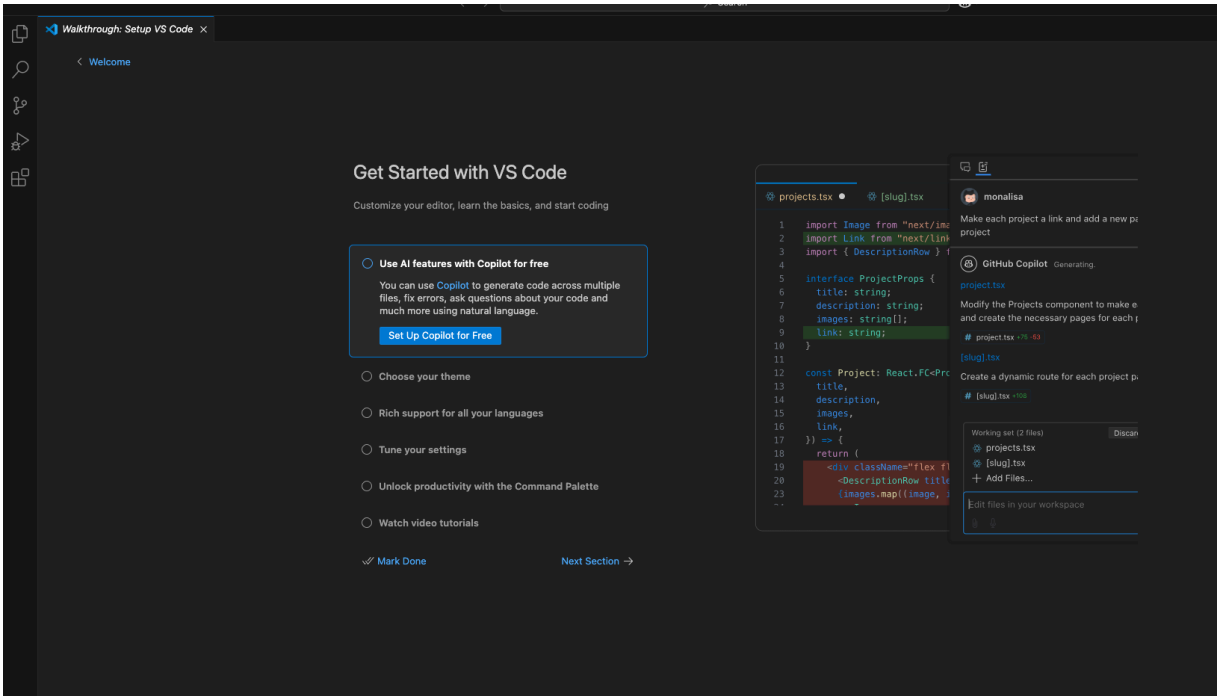
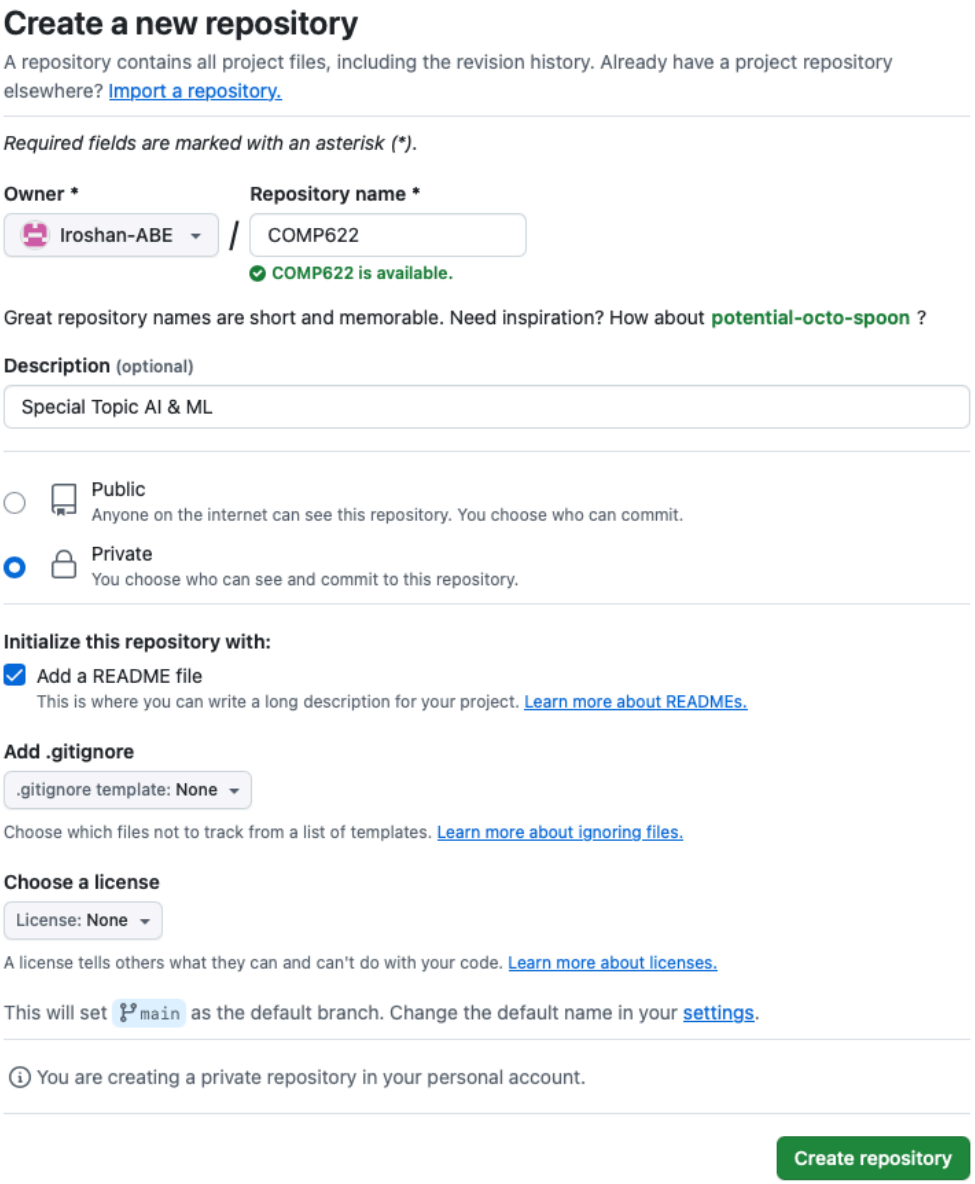

b. Run Anaconda navigator : anaconda-navigator



c. Launch Visual Studio code editor



3. Create GitHub repository
    a. Signup for github for new account with your lincoln email: https://github.com/
    b. Create a repository (name) with your student registration number



Selecting a Dataset for your Study

Log in to Kaggle and select a dataset under the Datasets tab in your account. Meanwhile you need to justify why you select the dataset so that the examiner evaluates the dataset based on the justification and let you know whether you can proceed with the selected dataset.

Weekly Homework Plan

1. Week 01: Local environment setup, remote repository creation.
2. Week 02: Selecting and submitting the justification for the dataset to proceed.
3. Week 03: Perform data preprocessing and push the code to remote repository and create a PR (pull requesting) to tutor to review the code.
4. Week 04: Perform feature selection/ extraction and push the code to remote repository and create a PR (pull requesting) to tutor to review the code.

5. Week 05: Perform model selection (supervised/ unsupervised) based on your problem and push the code to remote repository and create a PR (pull requesting) to tutor to review the code.
6. Week 06 : Perform parameter optimisation based on the selected model/s and push the code to remote repository and create a PR (pull requesting) to tutor to review the code.
7. Week 07: Practice XAI algorithm based on the lecture, push the code to a remote repository and create a PR (pull requesting) tutor to review the code.
8. Week 08: Practice Time Series algorithm based on the lecture, push the code to a remote repository and create a PR (pull requesting) to tutor to review the code.
9. Week 09: Practice Image Data algorithms based on the lecture, push the code to a remote repository and create a PR (pull requesting) to tutor to review the code.
10. Week 10/11 & 12 : Continue work on the project and evaluate the code accordingly.