**Team Members:** Giovanni De La Luz, Ryan Vu

# Decisions

- Programming Language – Python
    - Python is a popular compiled language and has a lot of support for powerful libraries such as the one used in our lab, Pandas. It further helped, that the library is heavily documented making it easier to source help. We are also proficient in Python syntax making it easier for development and debugging on our end. These factors ultimately guided our decision to use this popular framework.
- Internal Architecture
    - Data Structure → Pandas DataFrame
        - The Pandas library fundamental feature is the data structure provided, which is a DataFrame. Unfortunately, it is NOT an associate array, however it has a lot of utility as it represents a 2D array. Thus, reducing the need to build a data structure from scratch and streamlining the students.txt file into a single DataFrame. There is a lot of useful in-built functions with the most helpful being iterating through the rows.
- Project Structure
    - main.py – contains all the query parsing and function calling, also handling query edge cases
    - schoolsearch.py – contains all the query functions (i.e. R3 - R11 and NR1 - NR5) and print statements
    - pandas.ipynb – a Jupyter notebook used solely for testing new functions and debugging

# Task Log

| Description | Student(s) | Approx. Duration | Deadline | Bugs/Challenges |
|---|---|---|---|---|
| Refactoring | Giovanni De La Luz, Ryan Vu | 2 hour | 10/2 | Using the list.txt to find respective teachers based on the shared Classroom attribute |
| Implementing New Functions | Giovanni De La Luz, Ryan Vu | 3 hour | 10/4 | N/A |
| Test-Case Files | Ryan Vu | 30 minute | 10/4 | N/A |
| Total Project Time: ~6 Hours | | | | |

# Other Lab Notes

I. Project Setup
   A. Virtual Environment (VS Code)
      a. python -m venv .venv (Windows)
         // python3 -m venv .venv (MacOS)
         i. creates virtual environment folder in the pwd
      b. venv\Scripts\activate (Windows)
         // source .venv/bin/activate (MacOS)
      c. (venv) pip install pandas → added to virtual environment folder
      d. python main.py (Windows) // python3 main.py (MacOS)
         i. may need to have the latest python version
      e. * can now query for commands*
      f. Deactivate

II. Notes
   A. Testing
      1. Challenges
         a) Parsing Data & Edge-Cases
         b) Running in to errors due to unfamiliarity with Pandas
   B. Decisions you made on how to modify your Part a code to accommodate new input data. Which parts of the code were affected?
      1. We decided to refactor our code from Part a rather than create a new program.
      2. In our school_search program, we initially read the input file into a DataFrame, so we modified the program to read the two input files into two DataFrames.
      3. The affected parts of the code were any commands that involved teachers whether that be doing searches on the teachers or just printing out the teacher's name.
         a) S[tudent] <lastname> [T[eacher]]
         b) T[eacher] <lastname>
         c) G[rade] <Number> [L[ow]] [H[igh]] [T[eacher]]
         d) C[lassroom] <Number> T[eacher]