Jupyter Notebooks

A coding environment great for data analysis and manipulation!

What will be covered today

- Dictionaries
  - An alternative to lists
  - Useful for organizing data
- Jupyter Notebooks
  - An environment to code that is really nice to use for data analysis.

What are Dictionaries?

- Collection of things
  - Like a list
- But organized differently
- Has key, value pairs

Dictionary Example

- Do in class survey
  - Who is a Data Analytics Major?
  - CRT?
  - CS?
  - Others?

Every entry is made up of keys:values

- Keys are usually strings
- Values can be anything
  - Even lists or other dictionaries!
- Ex:

```
{"Data Analytics": 8, "Computer Science": 7, "Creative Technologies": 6}
```

Another name is Hash Table

Pros and Cons of Dictionaries

- Faster to get info then looping through a whole list
- Uses up more memory on computer then a list because it is a list PLUS labels
- Trades Time Complexity for Space Complexity

Sorting Dictionaries

- They are not sorted by default
- How to sort:

```
# sort the dictionary so the items with the largest value are first
sortedDict = sorted(myDict.items(), key=lambda x:x[1], reverse=True)

# sort the dictionary so the items with the smallest value are first
sortedDict = sorted(myDict.items(), key=lambda x:x[1], reverse=False)
```

We will explore these more later today

- Let’s move on to jupyter notebooks!
- Make a new file
  - This one is a ipynb file- Jupyter Notebook file

Explore how to use Jupyter Notebooks

- Open a new file -> .ipynb file
- Explore how to write and run code with a notebook
- How to write markup vs code
- Start on daily together as a class

Do at least the first 2 questions of DA together

Mini Project 1

- Will pick a topic to learn more about
- Will make a google survey and then analyze the results.
- At least 10 people must complete the survey.
- Assignment on canvas has all the details
- Due Jan 30th before class