

Debugging

1

Next Quiz

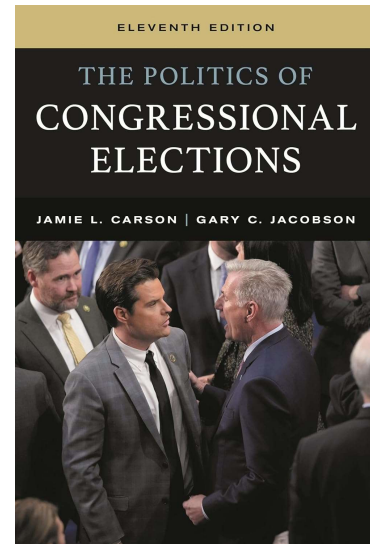
- The first quiz will be on Tuesday, February 23rd
- Will include material (lectures and reading) covered through Thursday, February 19th
- Mainly short answer questions

2

Reading

- Carson & Jacobson – Chapter 4

Not required for the quiz on Tuesday



3

New Dataset

- Our previous data analysis analyzed campaign contributions for all candidates
- Now we examine data that shows contributors
- Access <https://www.fec.gov/data/browse-data/>
- Click on individual contributions
- Look for something interesting

Edit filters

RECIPIENT NAME OR ID
Limit 10 recipient names or IDs

CONTRIBUTOR DETAILS

Name
Limit 10 contributor names or IDs

ZIP code
Limit 10 ZIP codes

City
Limit 10 cities

Occupation
Use the employer field to search by occupation in reports filed before 2003. Limit 10 occupations

Employer
Limit 10 employers

Individual contributions

Viewing about 57,552,000 filtered results for:

2025-2026 x 01/01/2025 x - 12/31/2026 x

Contributor name	Recipient
SCHERIS, KATHY	WAY FOR CONGRESS
LAHLOU, R'NELLE	EMILIA SYKES FOR CONGRESS
KATZ, EMILY	VELVET HAMMER PAC
WEISMAN, SAMUEL	KRISTEN FOR MICHIGAN
GENTILE, THOMAS C.	HEXCEL CORPORATION POLITICAL ACTION COMMITTEE
WIGNER, PRESTON D.	UNIVERSAL LEAF TOBACCO COMPANY, INCORPORATED POLITICAL ACTION COMMITTEE (FEDERAL)
PEDERSON, SPENCER MR.	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION POLITICAL ACTION COMMITTEE (NEMA PAC)
COOPER GAY, ANN	OVERSIGHT ACTION FUND

4

How To Get Help With Python Exercises

- You will incrementally do more with the datasets that we access
- You will find that
 - You would like to analyze the data in a certain way, but are unsure of how to do it
 - You will see error messages that you don't understand
- Approaches
 - Insert print statements in your code to help understand data values
 - Ask an AI assistant a question
 - Post a question in Piazza
 - Ask the TAs (in class or through email)
 - Email me
 - Read the documentation

5

Library Documentation

- Python library documentation is available for all the libraries you use
- `os` library documentations is available at <https://docs.python.org/3/library/os.html>

For other libraries,
just search for API
and the library name

Link to the `os` library
documentation, and get familiar
with the style. Library extracts may
be given to you in your exam API

`os.chdir(path)`
Change the current working directory to *path*.

This function can support specifying a file descriptor. The descriptor open file.

This function can raise `OSError` and subclasses such as `FileNotFoundError`.

Raises an auditing event `os.chdir` with argument *path*.

New in version 3.3: Added support for specifying *path* as a file object.

Changed in version 3.6: Accepts a path-like object.

6

How to Pose a Question to an AI Assistant

- Set the context (e.g., in Python, using Pandas, how do I ...)
- Use the correct terminology (e.g., string, DataFrame, Series, header, object, function, method, literal, identifier, parameter, etc.)
- State the outcome you would like (e.g.,
 - ... sort the rows in alphabetical order according to certain column?
 - ... method to read a ____ file?
- Which AI assistant?
 - Whichever you prefer
 - I use Google AI a lot and it does a good job

7

What if You See an Error Message

- You will see error messages (example below)
- Usually difficult to understand
- Will refer to line of code that caused the error

An AI assistant might help



```
Traceback (most recent call last): Explain with AI
  File "C:\Users\robke\PycharmProjects\DataFrameLesson\TrackDonors.py", line 23, in <module>
    dfsort = df1.sort_values('$$', ascending=False)
  File "C:\ProgramData\Anaconda3\envs\DataFrameLesson\lib\site-packages\pandas\util\_decorators.py", line 331, in wrapper
    return func(*args, **kwargs)
  File "C:\ProgramData\Anaconda3\envs\DataFrameLesson\lib\site-packages\pandas\core\frame.py", line 6909, in sort_values
    k = self._get_label_or_level_values(by, axis=axis)
  File "C:\ProgramData\Anaconda3\envs\DataFrameLesson\lib\site-packages\pandas\core\generic.py", line 1850, in _get_label_o
    raise KeyError(key)
KeyError: '$$'
```

8

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Let's Practice

- Apply some filters to narrow your search
- Download a contributor file
- Write a Python module to analyze the data

What analysis? – Maybe totals, maybe subtotals, maybe removing uninteresting data, maybe something else

Contributor name	Recipient	Receipt date	Amount
TENER, ALAN C	VOICE OF TEACHERS FOR EDUC/CMTE ON POL EDUC OF NY STATE UNTD TEACHERS (VOTE/COPE) OF NYSUT	12/31/2025	\$12.00
RUOFF, BARBARA	VOICE OF TEACHERS FOR EDUC/CMTE ON POL EDUC OF NY STATE UNTD TEACHERS (VOTE/COPE) OF NYSUT	12/31/2025	\$210.00
ECKER, DAVID V	VOICE OF TEACHERS FOR EDUC/CMTE ON POL EDUC OF NY STATE UNTD TEACHERS	12/31/2025	\$12.00