

Sr. Programmer Analyst Coding Challenge

This coding challenge is meant to evaluate your programming while presenting a typical task a Sr. Programmer Analyst might encounter on the job. The challenge should take around 1-3 hours to complete. We will inspect the code and run it to see how it functions.

The Challenge

The Data Management Team has requested the following:

- A listing of participants who received the incorrect dose at the week 2 visit
- A pie chart showing count of study visits (viscodes) completed after the baseline (bl) visit

Specifications

In the form of a python script, create a reusable tool that will generate a csv file of filtered results and create a pie chart that will render in the browser. The python file should be named dosing.py. Please use pandas, pytest, and plotly.

PIE Chart:

- Read t2_registry 20190619.csv into a dataframe
- Generate a pie chart of VISCODE counts with the following criteria:
 - SVPERF is Y
 - bl not in VISCODE
- The pie chart should visually match the provided image
- Use a plotly hovertemplate to create the tooltip

CSV Report:

- Read the following files into a dataframe:
 - t2_ec 20190619.csv
 - t2_registry 20190619.csv
- Merge the dataframes:
 - type of merge: left
 - t2_registry 20190619.csv (use as left dataframe)
 - merge on RID and VISCODE
- Filter records where:
 - registry.viscode is w02
 - registry.svdose is Y
 - ECSDSTXT is not 280

- Create and output a .csv file of the filtered records:
 - entitled results.csv
 - should not include pandas dataframe indexes
 - only include the following columns:
 - ID, RID, USERID, VISCODE, SVDOSE, ECS DSTXT
- The script should include:
 - Command line param for viscode
 - Command line param for svdose
 - Command line param for ecsdstxt
 - Command line param for the output directory of results.csv
 - A unit test in reference to the merge and filter logic (in a separate file named test_dosing.py)
- Upload the following files to a public github repository:
 - README.md (include instructions to run script and tests)
 - dosing.py
 - test_dosing.py
 - requirements.txt
 - t2_ec 20190619.csv
 - t2_registry 20190619.csv
 - results.csv
- The repo should named dm-code-challenge