Homework 1

Research Methods, Spring 2025

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```
import pandas as pd
from IPython.display import display, Markdown

# Load the dataset
merged_data = pd.read_csv('../../data/output/merged_datax.csv')
```

Count of Plans by Type

```
# Count the number of plans for each plan type and display results
plan_counts = merged_data['Plan Type'].value_counts()
display(Markdown(plan_counts.to_markdown()))
```

Plan Type	count
Medicare Prescription Drug Plan	991457
Local PPO	704993
HMO/HMOPOS	479275
Employer/Union Only Direct Contract PDP	25630
Regional PPO	17578
PFFS	13658
1876 Cost	7157
MSA	6518
Medicare-Medicaid Plan HMO/HMOPOS	4130
National PACE	1216

Removing Special Needs Plans (SNP), Employer Group Plans (eghp), and "800-series" Plans

```
# Filter out SNP, eghp, and 800-series plans
merged_data2= merged_data[~merged_data['SNP Plan'].str.contains('Yes', na=False) &
                          ~merged_data['EGHP'].str.contains('Yes', na=False) &
                          ~merged_data['Plan ID'].between(800, 900, inclusive="left")]

plan_counts2 = merged_data2['Plan Type'].value_counts()
#plan_counts2.style.format({'Plan Count': '{:,.0f}'}).hide(axis='index')
display(Markdown(plan_counts2.to_markdown()))
```

Plan Type	count
Medicare Prescription Drug Plan	269153
HMO/HMOPOS	36588
Local PPO	16728
Regional PPO	8531
1876 Cost	6329
PFFS	4232
Medicare-Medicaid Plan HMO/HMOPOS	4130
National PACE	1216
MSA	232

Average Enrollments by Plan Type

merged_data2[‘Enrollment’] = pd.to_numeric(merged_data2[‘Enrollment’], errors=‘coerce’) # create table for enrollment count and average enrollment for each plan type enrollment_summary = merged_data2.groupby(‘Plan Type’)[‘Enrollment’].agg([‘count’, ‘mean’]).reset_index() enrollment_summary.columns = [‘Plan Type’, ‘Enrollment Count’, ‘Average Enrollment’] enrollment_summary = enrollment_summary.sort_values(by=‘Enrollment Count’, ascending=False) #enrollment_summary.style.format({‘Enrollment Count’: ‘{:,.0f}’, ‘Average Enrollment’: ‘{:,.0f}’}).hide(axis=‘index’) display(Markdown(enrollment_summary.to_markdown()))