Assignment 3 – Data Visualization

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Course: Applied Data Science with AI
Week #: 3
Project Title: Customer Churn Prediction

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1. Reading Summary

Reading Material:

- Storytelling with Data resources
- Matplotlib and Seaborn tutorials

Key Learnings:

- Different plots (bar, histogram, boxplot, heatmap) explain customer behavior.

Reflection:

I learned how to use visualizations to detect trends in churn, such as the effect of contract type and monthly charges.

2. Classroom Task Documentation

Task Performed:

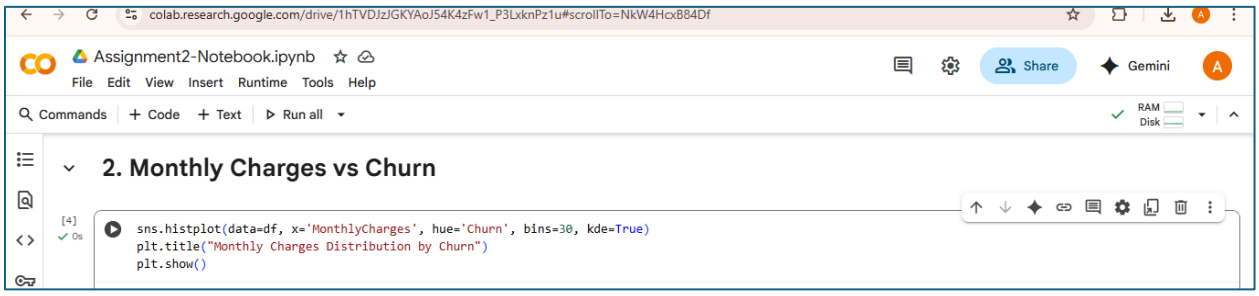
- Created bar charts, histograms, boxplots, and heatmaps using sample datasets in class.

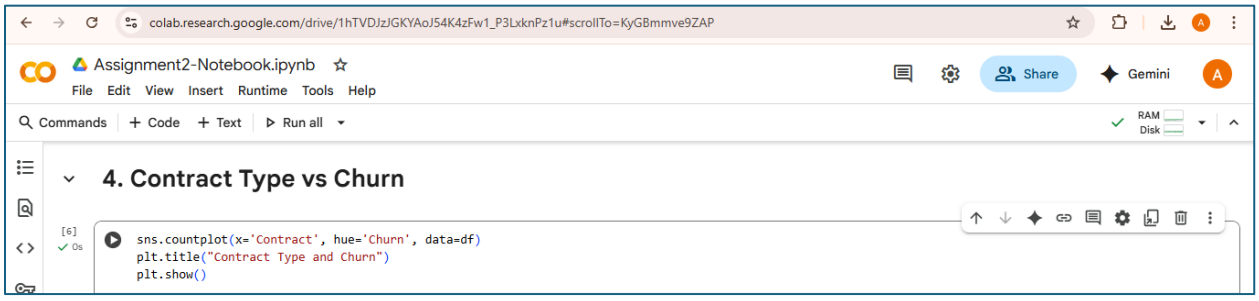
3. Weekly Assignment Submission

Assignment Title: Data Visualization and Exploratory Data Analysis

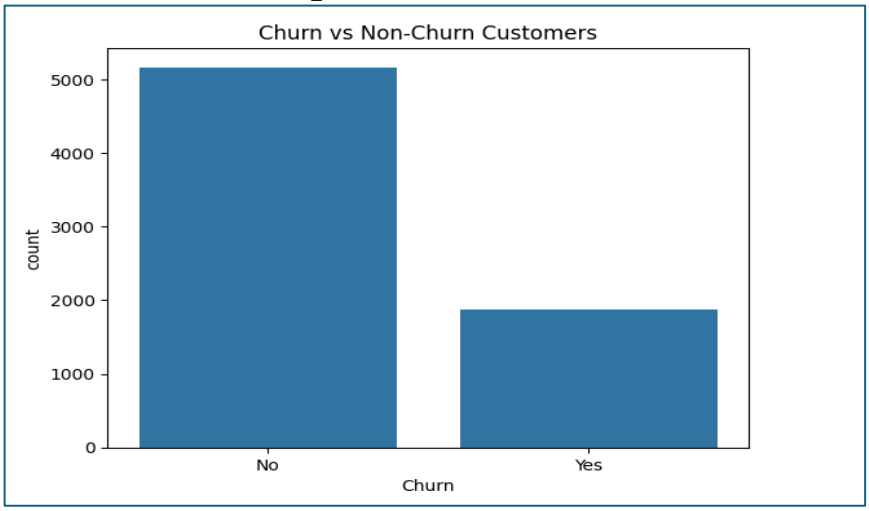
Steps Taken:

1. Loaded cleaned Telco Churn dataset.



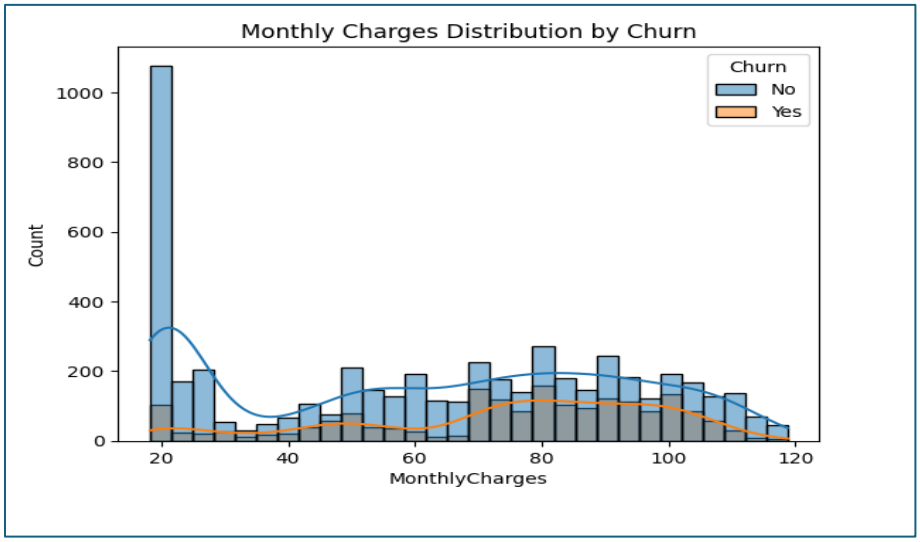


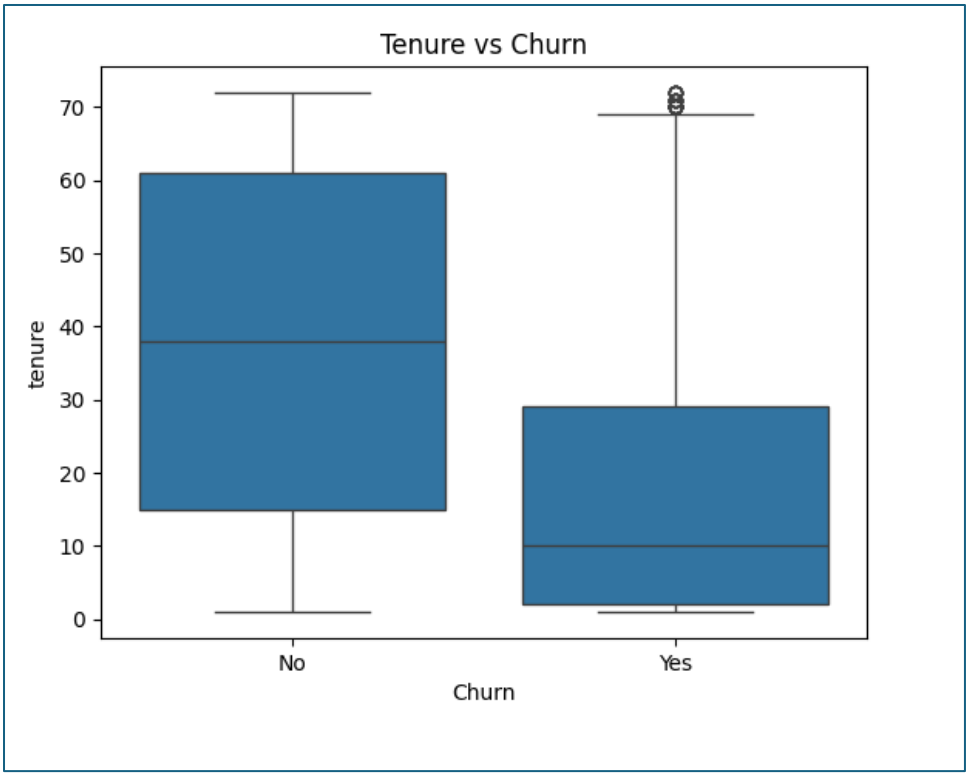
2. Plotted churn distribution, monthly charges, tenure, contract type, and correlation heatmap.



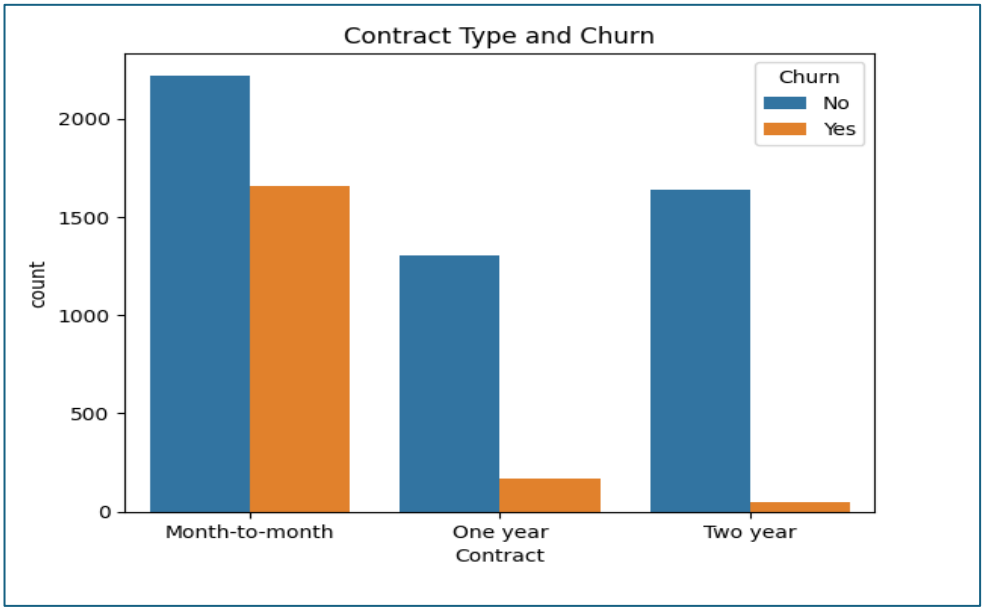
Insight: More customers stayed than left, but churn is still significant.

Insight:
Customers with higher monthly charges are more likely to churn.

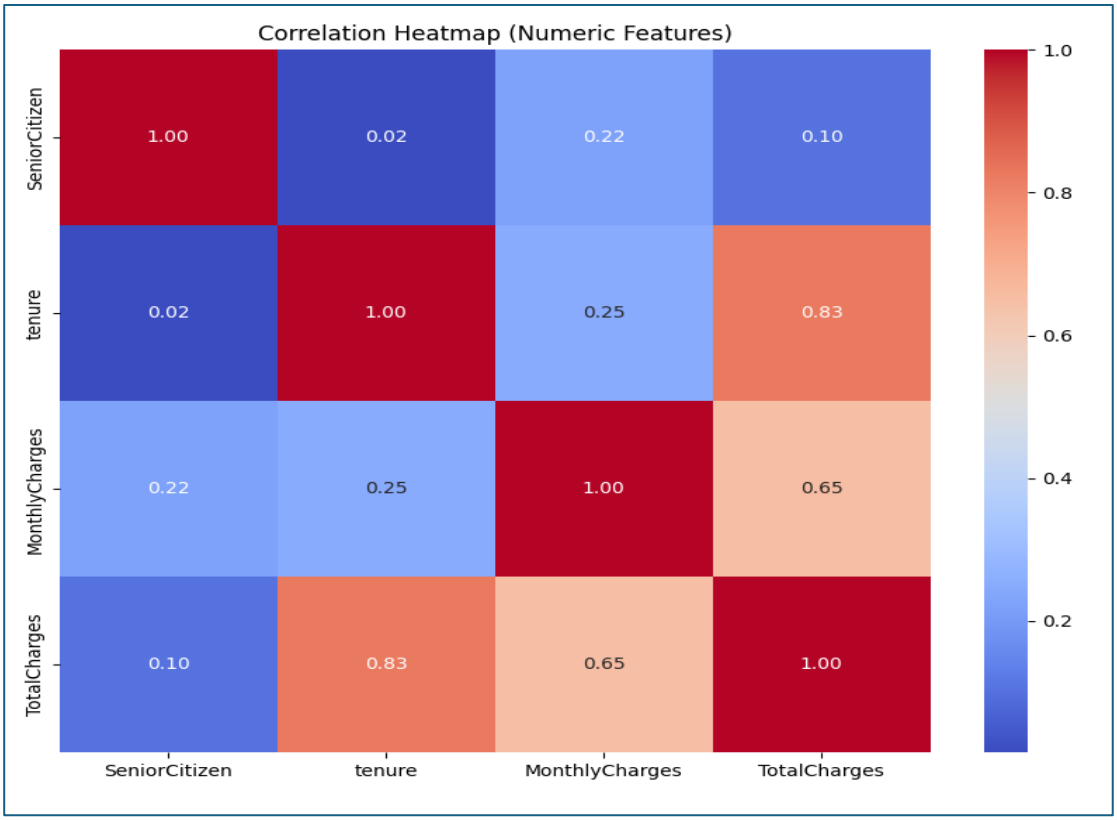




Insight: Customers with short tenure (new customers) tend to churn more than long-term customers.



Insight: Month-to-month contract customers churn much more compared to one-year or two-year contracts.



Insights: Churn has a negative correlation with Tenure ,customers with shorter tenure are more likely to churn.

3. Wrote short insights under each plot.

Output:

- Visual patterns showed churn is higher in short-tenure, month-to-month, and high-charge customers.

Challenges Faced:

- Some variables had long labels, adjusted using plt.xticks(rotation=45).

GitHub Link:

https://github.com/amannadeem126/Customer-Churn-Prediction

4.Project Progress Milestone

- Completed first Exploratory Data Analysis (EDA).
- Next week’s goal: Perform correlation analysis to identify key features related to churn.

5. Self-Evaluation

☑ I completed all tasks on time.