**Summery**

**Define the problem** :

For inpatient analysis, focus on admissions data, length of stay, diagnosis distribution, resource utilization, and cost analysis to optimize hospital operations and improve patient care.

For outpatient analysis, concentrate on appointment scheduling, patient flow, service utilization, patient satisfaction, and billing revenue to enhance outpatient services and ensure efficient operations.

Both parts should feature interactive dashboards and reports, ensuring data security and compliance with regulations such as Health Insurance Portability and Accountability Act (HIPAA).

Make views and dashboards first.

**Gather and clean the data** : I started by collecting data in a excel file format. Then, I cleaned up the data by filling in any missing information and removing incorrect details. Then I joined a two files Inpatient and Outpatient file with Mapping Specialty file and create a new Cleaned data file named as final data.

**Analyzed the data using Python** : I used Python tools like Pandas, Matplotlib, and Seaborn to explore the data. I looked for patterns by calculating time bond, making bar graphs and scatter plots and checking for connections between different variables using regression analysis. It helped me understand the data better.

**Export the data to Power BI** : Exported the cleaned data to Power BI, which is a Business analytics visualization tool that allows you to create dashboards and reports. Used Power BI to create visualizations such as stacked column chart, line chart, donut chart and multi row card that helped me tell a story with the data.

**Refining the visualizations** : Used the Power BI visualization tools to refine visualizations and made them more engaging and informative. I enhanced the analysis by adding connected features like card and slicers, and made the visuals more appealing for easier understanding.

**Presenting my findings** : Used Power BI dashboard to presentation.

**Iterate and refine** : I improved the analysis and visuals based on feedback from Hospital Members to make sure the insights were easy to understand and had a big impact .