**Project Reflection: Telco Customer Churn Analysis**

**🎯 Project Goal**

To analyze churn behavior in telecom customers and identify which customer segments are at highest risk of leaving, using Python and visual analytics.

**✅ What You Learned**

**🧠 Core Data Analysis Skills**

* **Data Cleaning**:
  + Converted incorrect datatypes (e.g. TotalCharges from string to float)
  + Handled missing or invalid entries
  + Reset DataFrame index for clean workflow
* **Exploratory Data Analysis (EDA)**:
  + Used seaborn and matplotlib to create insightful bar charts
  + Analyzed churn by:
    - Contract type
    - Tenure bucket
    - Payment method
    - Internet service
    - Gender
* **Data Categorization**:
  + Created tenure-based buckets using pd.cut() — a real-world feature engineering technique
* **Visualization Exporting**:
  + Saved all visuals as .png files for GitHub portfolio inclusion
* **Project Structure**:
  + Followed a professional folder structure:
    - data/, notebooks/, visuals/, requirements.txt, README.md
* **GitHub Readiness**:
  + Documented analysis in Jupyter Notebook
  + Summarized key insights and recommendations in README.md
  + Packaged the full project for recruiter visibility

**🧩 Tools & Libraries Used**

| **Tool** | **Purpose** |
| --- | --- |
| Pandas | Data loading, cleaning, and manipulation |
| Seaborn & Matplotlib | Data visualization |
| Python | Core analysis |
| GitHub | Portfolio publishing |
| Colab | Notebook execution and development |

**💬 How to Present This in an Interview**

**“I worked on a churn analysis project using real-world telecom data. I cleaned the data, handled type mismatches, and performed exploratory visual analysis to identify high-churn customer segments. I found that month-to-month contracts, early-tenure customers, and manual payment users had significantly higher churn. I used Pandas, Seaborn, and Matplotlib in a structured Python project, which I documented and uploaded to GitHub for recruiters to review. I also practiced organizing my folders and visuals to mimic a real-world analyst workflow.”**