## **Roni’s Challenge: External Resources**

## **1. Data Analysis and Exploration**

* **Pandas Guide:** [Pandas User Guide](https://pandas.pydata.org/docs/user_guide/10min.html) for data manipulation and analysis in Python.
* **Data Cleaning Techniques:** [Data Cleaning](https://www.w3schools.com/python/pandas/pandas_cleaning.asp) with Python and Pandas for preprocessing steps.

### **2. Data Visualization Libraries**

* **Python Visualization Libraries:**
  + **Matplotlib/Seaborn Documentation:** [Matplotlib](https://matplotlib.org/stable/users/explain/quick_start.html) and [Seaborn](https://seaborn.pydata.org/tutorial.html) for creating static and informative visualizations.
  + **Plotly Express:** Plotly Express Documentation for interactive Python charts, including bar plots, scatter plots, and heatmaps.
* **JavaScript Visualization:**
  + **D3.js Library:** [D3.js Documentation](https://d3js.org/) for creating customized visualizations in JavaScript.

### **3. Dashboarding Tools and Resources**

**Mendix:** A low-code platform that enables users to quickly build dashboards with customizable UI components, database integrations, and automated workflows. Mendix is ideal for participants looking to rapidly develop a polished, interactive dashboard without extensive coding.

* Mendix [Documentation](https://docs.mendix.com/): Comprehensive guide to Mendix’s features, components, and dashboard creation.

**Budibase**: An open-source, low-code platform tailored for building data-driven applications and dashboards. Budibase offers pre-built components, data integrations, and customizable themes, making it a good choice for quickly creating dashboards that handle real-time data and analytics.

* Budibase [Documentation](https://docs.budibase.com/docs/what-is-budibase): Step-by-step guide for setting up Budibase, using components, and integrating data sources.

**Streamlit:** An open-source Python framework designed for creating interactive dashboards and data-driven applications quickly and efficiently. It allows participants to build sophisticated applications with minimal code by leveraging Python scripts and simple commands. Streamlit’s intuitive API makes it easy to turn data scripts into shareable web apps in just a few lines of code.

* Streamlit: [streamlit.io](http://streamlit.io)

**Appsmith**: A flexible, open-source framework for building internal dashboards and applications. Appsmith provides drag-and-drop functionality, integration with various data sources (APIs, databases), and widget customization, allowing participants to create interactive dashboards efficiently with minimal coding required.

* Appsmith [Documentation](https://docs.appsmith.com/getting-started/tutorials/start-building): Complete documentation covering setup, component usage, data integration, and widget customization.

**Tableau:**

* [Tableau](https://help.tableau.com/current/pro/desktop/en-us/data_guide.htm) Public Resources – Guides and examples for data visualization in Tableau.

**Google Data Studio:** Google Data Studio [Documentation](https://docs.data.world/en/99559-google-data-studio.html) for beginners in no-code dashboarding.

### **4. Advanced Analytics and Machine Learning (Optional)**

* **scikit-learn for Data Science:** scikit-learn Documentation – To implement predictive models or clustering for customer segmentation.
* **Prophet for Time Series Forecasting:** Prophet by Facebook – For trend analysis or demand forecasting.
* **Intro to Statsmodels:** Statsmodels User Guide for advanced statistical analysis and regression.

### **5. Dashboard Design and Usability**

* **UI/UX for Data Dashboards:**
  + **Data Visualization Best Practices:** Data Visualization: A Practical Introduction (University of California Press) by Kieran Healy.
  + **Dashboard Design Principles:** GoodCharts Blog for guidance on readability and accessibility in dashboard design.
* **Color and Layout Resources:**
  + **ColorBrewer** (for color schemes): [ColorBrewer](https://colorbrewer2.org/) – To ensure accessibility and visual clarity.
  + **Figma Free Templates:** Figma Dashboard Templates for wireframing and prototyping design layouts.

### **6. General Data Science Skills**

* **Effective Reporting:**
  + How to Write a Data Science Report – For participants to learn concise, business-oriented report writing.
* **GitHub for Code Sharing:** [GitHub Guide](https://guides.github.com/) – Basic GitHub usage for code sharing and collaboration.