**Project Plan**

**Tasks:**

1. **Data Collection:**
   * Obtain the Mall Customers dataset from the source.
2. **Data Cleaning:**
   * Cleanse the dataset to handle missing values, outliers, and ensure data consistency.
3. **Exploratory Data Analysis (EDA):**
   * Perform detailed analysis to understand customer demographics, purchasing patterns, and other relevant factors.
4. **Clustering:**
   * Implement K-Means clustering algorithm to segment customers into distinct groups based on their behavior.
5. **Visualization:**
   * Use Matplotlib for visualizing clusters and patterns within Google Colab.
   * Develop interactive dashboards and visualizations using Power BI for comprehensive insights.
6. **Documentation:**
   * Prepare documentation covering all stages of the project, including methodologies, findings, and recommendations.

**Resources:**

* **Personnel:**
  + Myself
* **Tools:**
  + Python (for data analysis and clustering)
  + Google Colab(for code development and EDA)
  + Matplotlib and Seaborn (for data visualization)
  + Power BI (for interactive dashboard development)

**Risks:**

* **Data Quality Issues:** Ensure data cleaning procedures are thorough to address inconsistencies.
* **Algorithm Performance:** Monitor and optimize K-Means clustering for accurate segmentation.
* **Visualization Limitations:** Address potential challenges in creating effective visualizations to communicate insights.