**Phase 5**

**Part 1 -Documentation**

**1. Project Objective:**

**1.1 Define the Problem:**

* Identify the overarching challenge: Analyze product sales data to gain insights and provide recommendations for improved sales performance.
* Understand the audience: The primary audience for this analysis may be data analysts, business analysts, or stakeholders interested in the insights.

**1.2 Design Thinking Process:**

**1.2.1 Empathize:**

* Identify the data sources and types of product sales data available for analysis.
* Understand the goals and objectives of the analysis, such as uncovering trends, identifying top-performing products, or optimizing pricing.

**1.2.2 Define:**

* Clearly state the objectives of the analysis, e.g., "Provide actionable insights to enhance product sales performance."
* Define success criteria, like improving sales revenue or increasing profit margins.

**1.2.3 Ideate:**

* Brainstorm various analytical techniques and methods for extracting insights from the data.
* Consider factors such as customer segmentation, pricing strategies, and sales channel optimization.

**1.2.4 Prototype:**

* Develop a prototype or plan for the analysis, including data exploration, modeling, and visualization.

**1.2.5 Test:**

* Validate the prototype with sample data and adjust the analysis plan as needed.
* Seek feedback from potential users of the analysis.

**1.3 Development Phases:**

**1.3.1 Data Collection:**

* Gather the product sales data, ensuring it covers a relevant time period and includes essential information such as sales volumes, pricing, and customer details.

**1.3.2 Data Cleaning and Preprocessing:**

* Prepare the data by addressing missing values, outliers, and data inconsistencies.

**1.3.3 Data Analysis:**

* Apply statistical and machine learning techniques to uncover insights, trends, and patterns in the sales data.
* Explore customer segments, product performance, and factors affecting sales.

**1.3.4 Model Development:**

* Create predictive models for sales forecasting, pricing optimization, or any other relevant tasks.
* Generate recommendations based on the analysis.

**1.3.5 Visualization and Reporting:**

* Develop visualizations and reports to present the analysis results.
* Make the findings accessible and actionable for stakeholders.

**1.3.6 Documentation:**

* Document the analysis process, methodologies, and findings for future reference.

**1.3.7 Continuous Improvement:**

* Keep the analysis up to date with new data and evolving business requirements.
* Continuously refine models and strategies as needed.

**1.3.8 Evaluation and Measurement:**

* Regularly evaluate the success of the analysis against the defined objectives and success criteria.
* Adjust strategies and recommendations based on measured results.