Phase 2 – Project Submission

PRODUCT SALES ANALYSIS

1. **Expected Deliverables:**
   - The specific insights which will be extracted from the sale data includes
     - ✓ identifying top-selling products,
     - ✓ analyzing sales trends, and
     - ✓ understanding customer preferences.
   - And with the insights gained , it can be used for prediction purposes.

2. **Data Collection & Description:**
   - The data can be collected via dataset in open source repository – 'Kaggle'.
   - (DATASET DESCRIPTION):
     - ✓ The 'statsfinal' dataset in 'kaggle repository' contains detailed information about the product sales.
     - ✓ It deals with details of four products and has eight different attributes namely : Q1,Q2,Q3,Q4,S1,S2,S3,S4.
     - ✓ Q1– Total unit sales of product 1
     - ✓ Q2– Total unit sales of product 2
     - ✓ Q3– Total unit sales of product 3
     - ✓ Q4– Total unit sales of product 4
     - ✓ S1– Total revenue from product 1
     - ✓ S2– Total revenue from product 2
     - ✓ S3– Total revenue from product 3
     - ✓ S4– Total revenue from product 4

3. **Methodologies:**
   - The following methodologies can be adopted sequentially to achieve the specific insights mentioned above:
     - ✓ Data Cleaning and Preprocessing : Prepare the dataset by handling missing values , outliers and data consistency.
     - ✓ Time-Series Analysis: Examine sales data over time to detect seasonality and trends.
     - ✓ Product Performance Analysis: Compare the performance of each product to determine the best-selling product.
     - ✓ Predictive Modeling: Develop predictive models to estimate sales for a specific period((eg) Predicting sales in the upcoming year – 2024)
     - ✓ Impact Assessment: Analyze the potential consequences of discontinuing one product.
   - Various visualizing techniques such as :
     - ✓ Bar charts or Tables
     - ✓ Line charts or time-series graphs
     - ✓ Pie charts or heat maps
       can be used for analysis.

4.Steps Involved using Cognos :

➢ Interactive and customizable 'Dashboards' in IBM Cognos can be used for data exploration and data analysis.

➢ Multiple visualizations such as Bar charts ,Pie charts ,Line charts etc., for specific attributes for above kind of analyses(such as Time-Series Analysis, Product Performance Analysis) can be done in the created dashboard.

➢ Enhancement of visualizations can be done by customization options for colors, styles and labels.

➢ Using of Cognos tools for creating hierarchies and dimensions for complex reports

➢ 'Predictive Modelling' can be done in integration with other tools such as IBM SPSS Modeller , IBM Watson etc.,

➢ 'Filtering and drill-down' capabilities can be used for creation of reports

➢ Meta data modelling can be done for creating a unified view of data

products.

- Clustering algorithms can identify customer segments with distinct preferences. Recommendation systems can suggest products based on past customer behavior.