Project Proposal

Product Sales analysis
Projrct Documentation

Phase-4

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Project objective

The primary objective of the Product Sales analysis project was to explore and analyze the trends, patterns, and sales of the Different Products sold using data-driven methods. This involved examining the progression of companies, identifying hotspots, understanding demographic impacts, and deriving insights that could potentially aid in better

ANALYSIS OBJECTIVES AND METHODOLOGY:

Data Collection Process: Multiple datasets were gathered, encompassing sales, profits, growth , selling rates, loses, and geographical information. These datasets were cleaned, integrated, and made ready for analysis. Data Visualization using IBM Cognos was employed to create visualizations, such as line graphs, heat maps, and dashboards, to represent the data comprehensively. Insights Generated: The analysis focused on understanding the trajectory of the sales of different products, identifying the correlation between profits and selling rates, and examining loses in product sales analysis

INSIGHTS AND THEIR IMPLICATIONS:

Trend Analysis: Clear trends were observed in the rise and fall of products and companies over time, with spikes coinciding with certain events or policy changes.Geographical Hotspots: Identification of products with high selling rates helped in understanding the necessity for being targeted by customers. Demographic Disparities: Analysis of the products that are bought by different age groups, ethnicities, and socioeconomic statuses highlighted disparities in susceptibility and outcomes.

UNDERSTANDING PRODUCT SALES TRENDS AND IMPACTS:

The insights derived from the analysis can be instrumental in several ways:

1.Product Sales Intervention:
Understanding what interventions have worked in increasing or the decreasing the sale.

2. Resource Allocation:
Directing resources towards the most growing and falling products.

3. Policy Decisions:
Informing policy decisions to better respond to similar future growth of the company.

DATA COLLECTION PROCESS:

The data collection process for the Product Sales analysis project involved the following steps:

Identification of Reliable Data Sources: The first step was to identify and gather data from credible sources from websites such as Odoo,GWI Siemens and other reputable sources providing Product Sales related datasets.

Data Retrieval: Various datasets were collected, covering a range of Product Sales including daily sells, profits, loses, company growth craze about the product and geographic data. These datasets were available in different formats such as CSV, JSON, or through APIs.

Data Cleaning and Preprocessing: The collected data required cleaning and preprocessing to ensure consistency, accuracy, and compatibility. This step involved dealing with missing values, standardizing date formats, harmonizing data fields, and ensuring uniformity across different sources.

Data Integration: The cleaned datasets were integrated to create a comprehensive dataset for analysis. This process involved merging multiple datasets based on common fields such as date, location, or unique identifiers to create a unified dataset suitable for analysis.

Data Quality Check: A quality check was conducted to verify the accuracy of the integrated dataset. This involved cross-validating the data, identifying anomalies, and ensuring data integrity.

VISUALIZATION USING IBM COGNOS:

IBM COGNOS SETUP:
The IBM Cognos tool was selected for its robust data visualization capabilities.The tool was configured and prepared for data integration and visualization**.**

DATA IMPORT:
The integrated dataset obtained from the data collection process was imported into IBM Cognos

VISUALIZATION CREATION:
Using IBM Cognos, various types of visualizations were created to represent the COVID-19 data comprehensively.

LINE GRAPHS
Showing trends in daily cases, deaths, and recoveries over time.

INTERACTIVE ANALYSIS:
IBM Cognos allowed for interactive analysis, enabling users to drill down into specific data points, filter information, and explore the data dynamically.
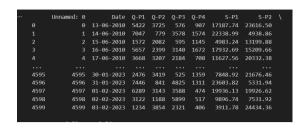
CONCLUSION:

The project successfully delved into the vast array of Product Sales data available and drew meaningful insights to aid in understanding the trends, impacts, and potential strategies for growth of the company and products.

CODING

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
data=pd.read_csv("/kaggle/input/product/statsfinal.csv")
print(data)
```

```
      Unnamed: 0        Date  Q-P1  Q-P2  Q-P3  Q-P4      S-P1      S-P2  \
0              0  13-06-2010  5422  3725   576   907  17187.74  23616.50
1              1  14-06-2010  7047   779  3578  1574  22338.99   4938.86
2              2  15-06-2010  1572  2082   595  1145   4983.24  13199.88
3              3  16-06-2010  5657  2399  3140  1672  17932.69  15209.66
4              4  17-06-2010  3668  3207  2184   708  11627.56  20332.38
...          ...         ...   ...   ...   ...   ...       ...       ...
4595        4595  30-01-2023  2476  3419   525  1359   7848.92  21676.46
4596        4596  31-01-2023  7446   841  4825  1311  23603.82   5331.94
4597        4597  01-02-2023  6289  3143  3588   474  19936.13  19926.62
4598        4598  02-02-2023  3122  1188  5899   517   9896.74   7531.92
4599        4599  03-02-2023  1234  3854  2321   406   3911.78  24434.36
```

```
mean =np.mean(data['Q-P1'])
print(mean)
```

```
4121.849130434783
```

```
std = np.std(data['S-P1'])
print(std)
```

```
7113.566754251363
```

CODING

```
total_Q = data['Q-P1'].sum()
total_S = data['S-P1'].sum()
labels = ['Q-P1', 'S-P1']
sizes = [total_Q, total_S]
colors = ['blue', 'red']
explode = (0.1, 0)
plt.pie(sizes, explode=explode, labels=labels,
colors=colors, autopct='%1.1f%%',
startangle=140)
plt.axis('equal')
plt.title('Distribution of Q and S')
plt.show()
```


Distribution of Q and S