Title Page Project Title: Simple Sales Data Visualization

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Course: BTECH

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Introduction

Sales data visualization is a crucial technique used to analyze and interpret sales trends effectively. By transforming raw sales data into visual representations, businesses can make informed decisions and identify patterns that drive success. This report explores different visualization techniques, tools, and a sample analysis.

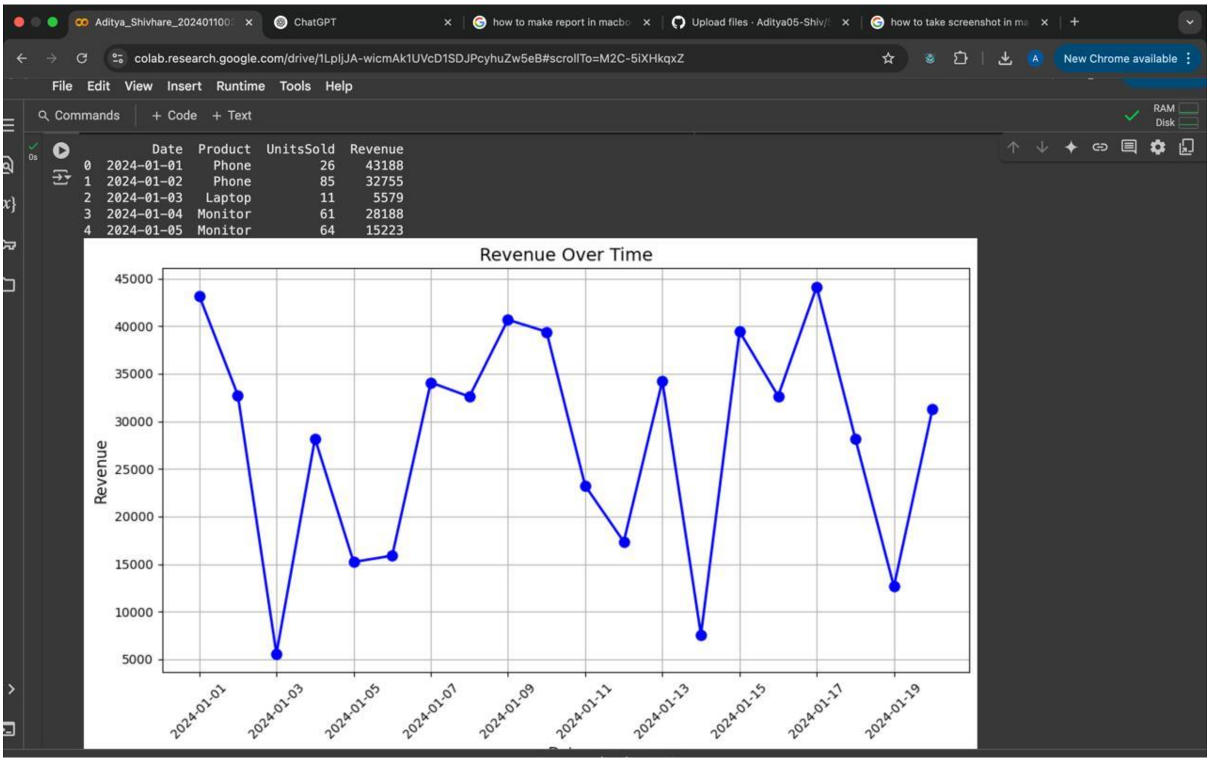
Methodology

1. **Data Collection**: Gather sales data containing fields such as Date, Product, Region, and Revenue.
2. **Data Processing**: Clean and preprocess the dataset to ensure accuracy.
3. **Visualization Techniques**:
    - **Line Charts**: To analyze revenue trends over time.
    - **Bar Charts**: To compare product-wise sales.
    - **Pie Charts**: To visualize sales distribution across different regions.
4. **Tools Used**:
    - Microsoft Excel for simple visualizations.
    - Tableau for interactive business intelligence insights.
    - Python (Matplotlib & Seaborn) for custom and advanced visualizations.

Code

```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Load the sales data from a CSV file
df = pd.read_csv('sales_data.csv')  # Replace with your file path

# Display the first few rows of the dataframe
print(df.head())

# Convert the 'Date' column to datetime format for time-based analysis
df['Date'] = pd.to_datetime(df['Date'])

# 1. Line Chart - Revenue over time (Date)
plt.figure(figsize=(10, 6))
plt.plot(df['Date'], df['Revenue'], marker='o', color='b', linestyle='-', linewidth=2, markersize=8)
plt.title('Revenue Over Time', fontsize=14)
plt.xlabel('Date', fontsize=12)
plt.ylabel('Revenue', fontsize=12)
plt.xticks(rotation=45)
plt.grid(True)
plt.tight_layout()
plt.show()

# 2. Bar Chart - Units Sold by Product
plt.figure(figsize=(10, 6))
sns.barplot(x='Product', y='Units Sold', data=df, palette='Blues_d')
plt.title('Units Sold by Product', fontsize=14)
plt.xlabel('Product', fontsize=12)
plt.ylabel('Units Sold', fontsize=12)
plt.show()

# 3. Pie Chart - Revenue Distribution by Product
product_revenue = df.groupby('Product')['Revenue'].sum()
plt.figure(figsize=(8, 8))
plt.pie(product_revenue, labels=product_revenue.index, autopct='%1.1f%%', startangle=140, colors=plt.cm.Paired.colors)
plt.title('Revenue Distribution by Product', fontsize=14)
plt.show()

# 4. Scatter Plot - Units Sold vs. Revenue
plt.figure(figsize=(10, 6))
plt.scatter(df['Units Sold'], df['Revenue'], color='purple', s=100, edgecolors='black')
plt.title('Units Sold vs. Revenue', fontsize=14)
plt.xlabel('Units Sold', fontsize=12)
plt.ylabel('Revenue', fontsize=12)
plt.grid(True)
plt.show()
```

Output/Result



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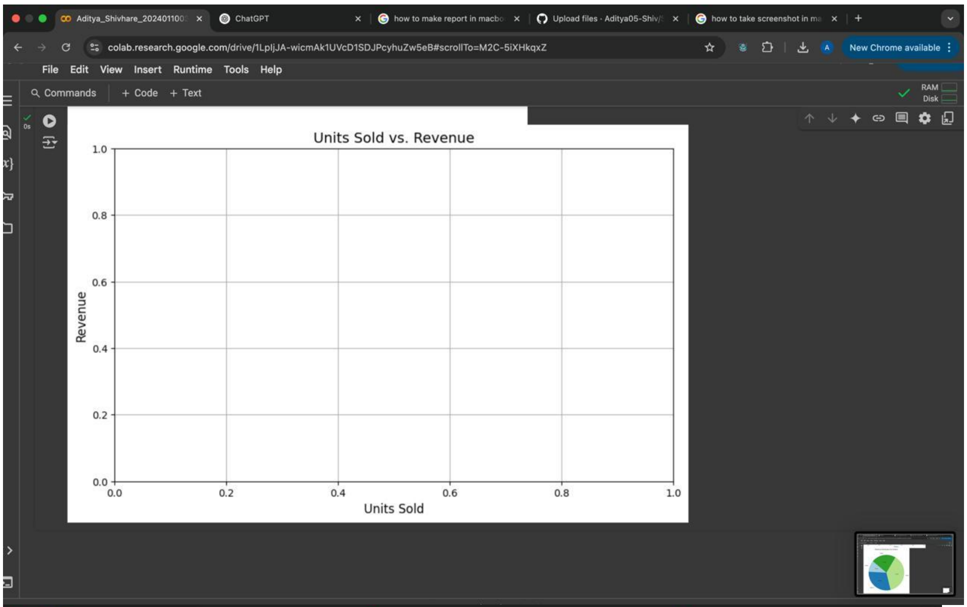
```
         Date  Product  UnitsSold  Revenue
0  2024-01-01    Phone         26    43188
1  2024-01-02    Phone         85    32755
2  2024-01-03   Laptop         11     5579
3  2024-01-04  Monitor         61    28188
4  2024-01-05  Monitor         64    15223
```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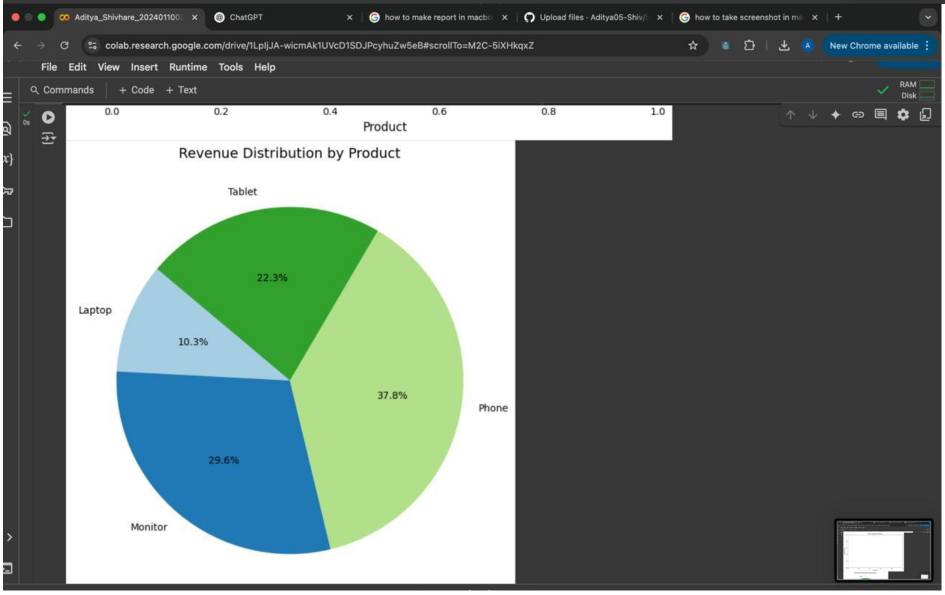
+ Text
RAM
Disk
Units Sold vs. Revenue
Revenue
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Units Sold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New Chrome available
File Edit View Insert Runtime Tools Help
Commands
+ Code
+ Text
RAM
Disk
0.0
0.2
0.4
0.6
0.8
1.0
Product
Revenue Distribution by Product
Tablet
22.3%
Laptop
10.3%
37.8%
Phone
29.6%
Monitor

References/Credits

- Dataset Source: [Mention Dataset Source]
- Tools Used: Matplotlib, Seaborn, Excel, Tableau
- Additional References: [Any reference material used]