

 Marwadi University <small>Marwadi Chandrarani Group</small>	NAAC  A+	Marwadi University Faculty of Engineering & Technology Department of Information and Communication Technology
Subject: Programming With Python (01CT1309)	Aim: Practical based on Data Visualization with Plotly	
Experiment No: 24	Date:	Enrollment No: 92400133055

GITHUB

Aim: Practical based on Data Visualization with Plotly

IDE: Visual Studio Code

Installation pip install

plotly pandas Creating a

Sample Dataset import

pandas as pd import

plotly.express as px

Creating a Sample Dataset

Sample data

data = {

 'Product': ['A', 'B', 'C', 'D', 'E'],

 'Sales': [100, 200, 150, 300, 250],

 'Profit': [30, 70, 50, 120, 90]

}

df = pd.DataFrame(data) Creating

Basic Visualizations

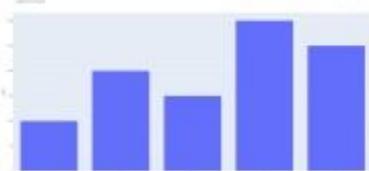
Bar Chart

Bar chart for Sales

A bar chart is great for comparing quantities across categories.

fig = px.bar(df, x='Product', y='Sales', title='Sales by Product')

fig.show() Output:



Line Chart

A line chart can help visualize trends over time or categories.

Line chart for Profit

fig = px.line(df, x='Product', y='Profit', title='Profit by Product')

fig.show() Output:



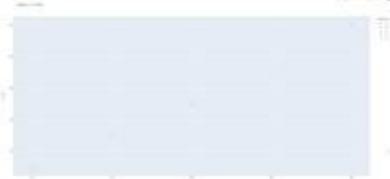
Scatter Plot

A scatter plot is useful for examining the relationship between two numerical variables.

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Scatter plot for Sales vs. Profit

```
fig = px.scatter(df, x='Sales', y='Profit', color='Product', title='Sales vs. Profit')
fig.show() Output:
```



Customizing Visualizations

Plotly allows for extensive customization. Let's enhance our bar chart with more features.

Enhanced Bar chart

```
fig = px.bar(df, x='Product', y='Sales',
title='Sales by Product',      color='Profit',
```

Color by Profit

```
text='Sales') # Show sales value on bars
```

Customize layout

```
fig.update_layout(xaxis_title='Product',
yaxis_title='Sales',          legend_title='Profit',
template='plotly_dark') # Change template
```

fig.show()

Exporting Visualizations

Plotly figures as static images or HTML files.

Save the figure as an HTML file

```
fig.write_html('sales_by_product.html')
```

Save the figure as a PNG file (you may need to install kaleido)

```
fig.write_image('sales_by_product.png') Output:
```

