
 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
<b>Subject: Programming With Python (01CT1309)</b>	<b>Aim:</b> Practical based on Data Visualization with Plotly	
<b>Experiment No: 24</b>	<b>Date:</b>	<b>Enrollment No: 92510133011</b>

**Aim:** Practical based on Data Visualization with Plotly

**IDE:**

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
```

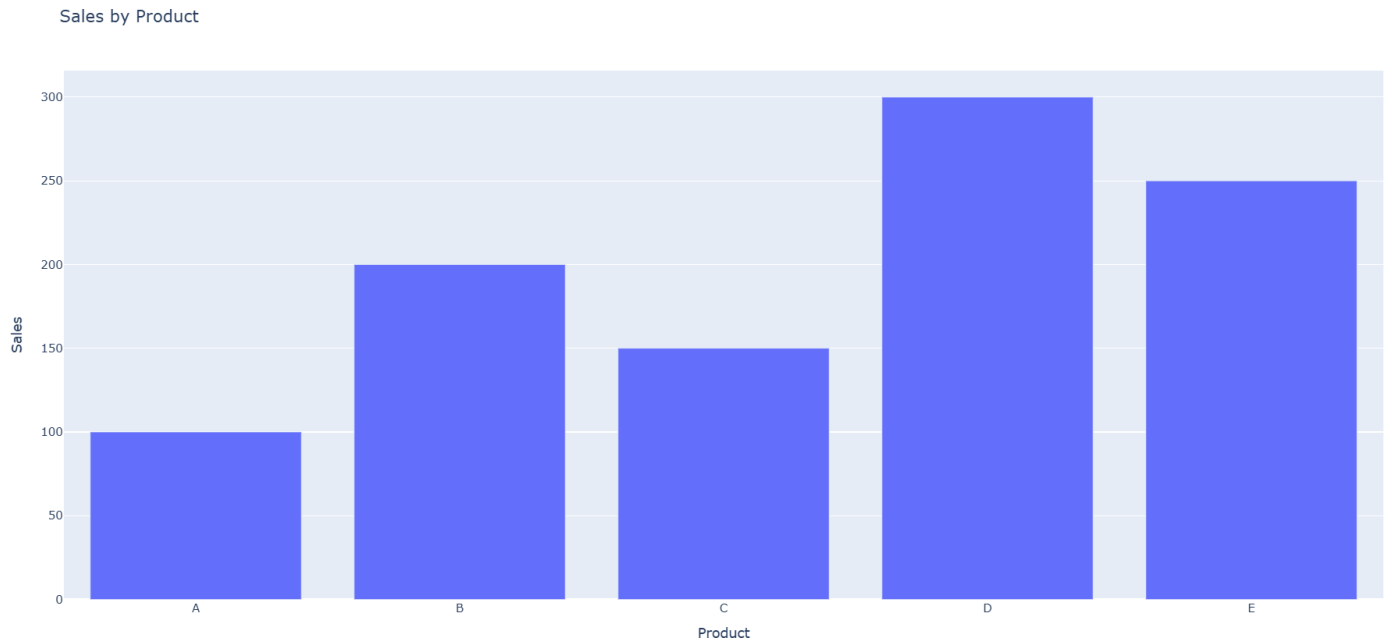
A bar chart is great for comparing quantities across categories.

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

```
fig.show()
```

**Output:**

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## Line Chart



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

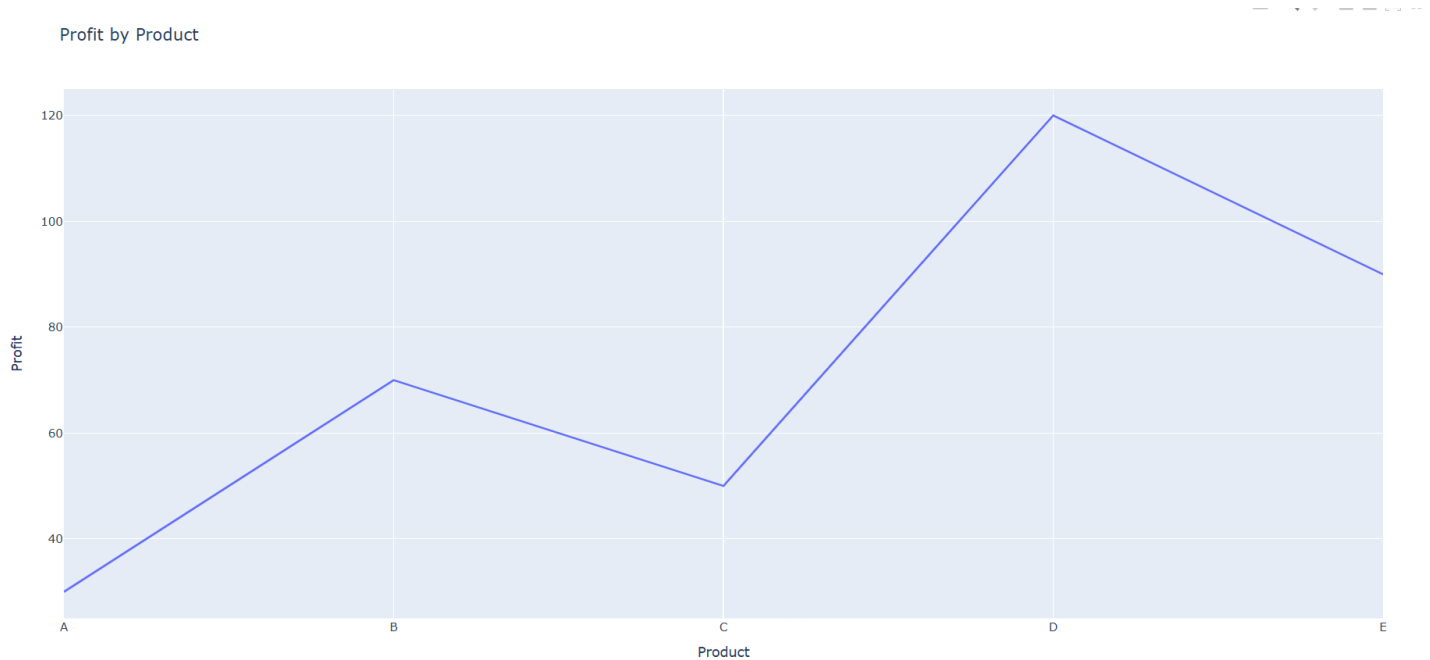
# Line chart for Profit

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

```
fig.show()
```

**Output:**

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### Scatter Plot



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

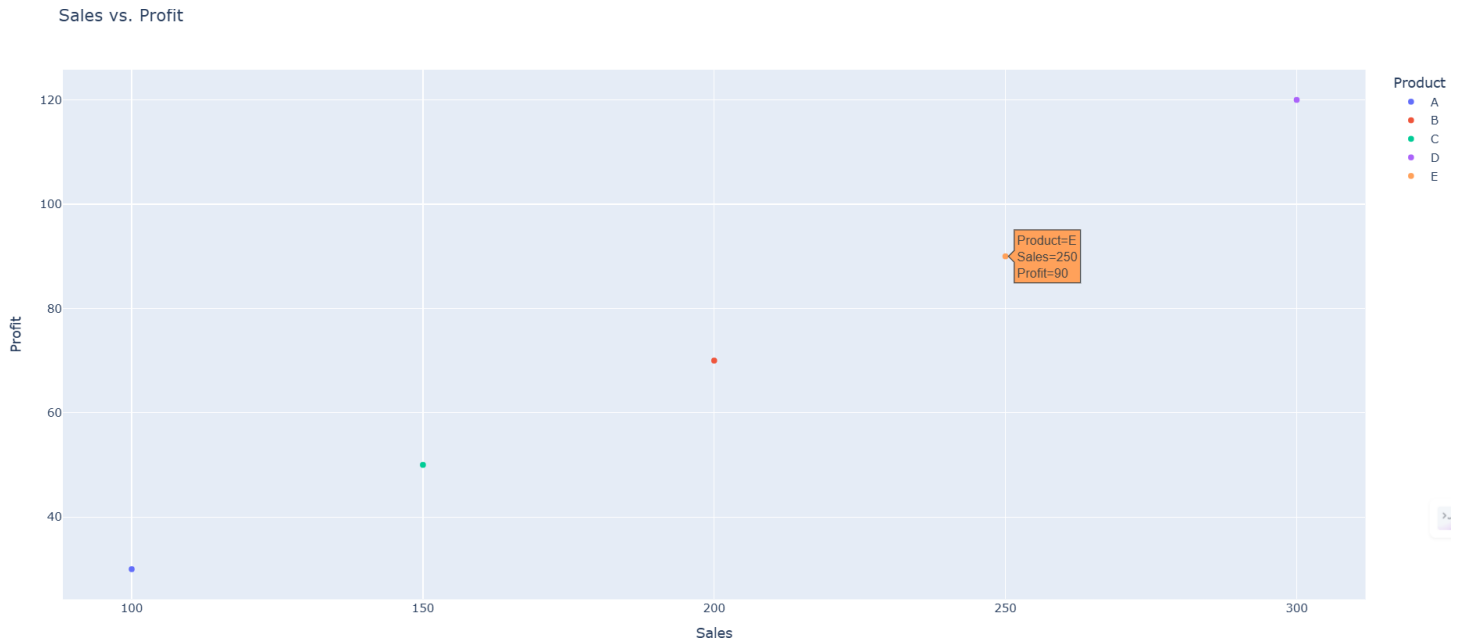
# Scatter plot for Sales vs. Profit

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

```
fig.show()
```

**Output:**

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## 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
```



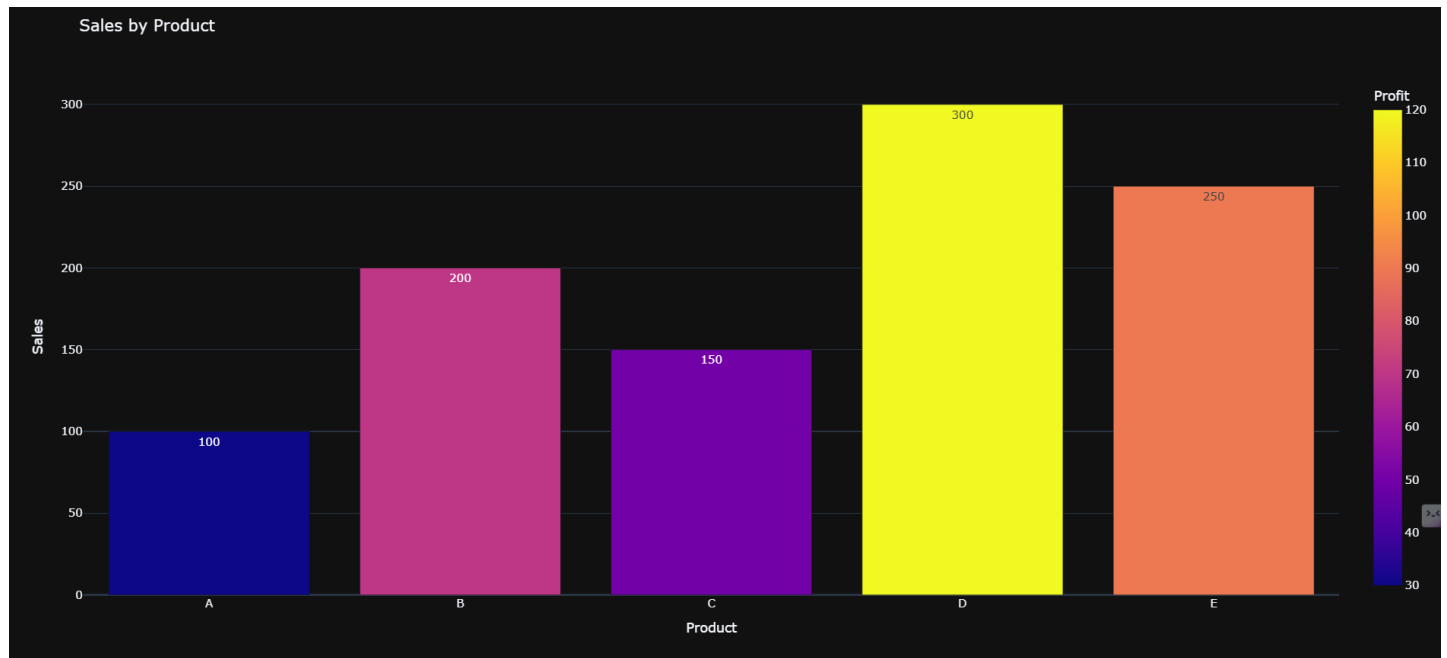
 <b>Marwadi University</b> Marwadi Chandarana Group 	<b>Marwadi University</b> <b>Faculty of Engineering &amp; Technology</b> <b>Department of Information and Communication Technology</b>	
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fig.show()

Output:




Exporting Visualizations

Plotly figures as static images or HTML files.

# Save the figure as an HTML file

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

 <b>sales_by_product</b>	09-11-2024 11:02	HTML Source File	4,461 KB
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# Save the figure as a PNG file (you may need to install kaleido)

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

Github link:

<https://github.com/trupalijasani05/trupali-jasani>