

# Data Visualization with Matplotlib

## Presented by:

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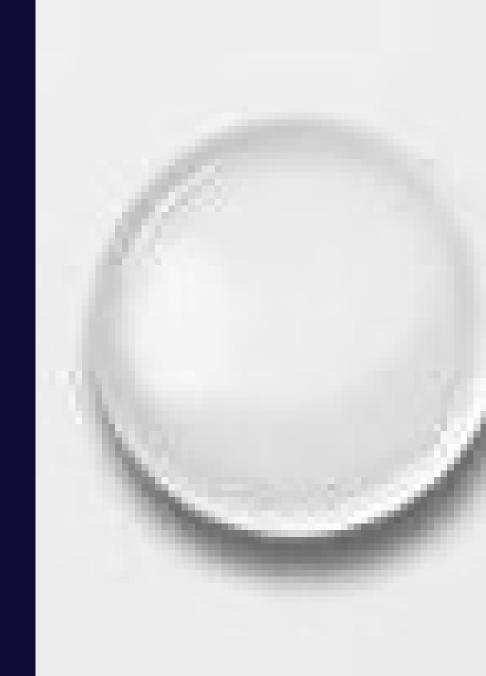
Tamilmaran

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Isha

# Introduction to Data Visualization

Data visualization transforms numbers and information into easily understandable pictures like graphs and charts.



# Matplotlib: Your Python Tool

Matplotlibis a powerful Python library specifically designed for creating static, animated, and interactive visualizations in Python.



## Common Visualization Methods



#### Line Plot

Shows data changes over time using connected lines.



#### Bar Graph

Compares different categories using rectangular bars.

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### Histogram

Displays the frequency of numerical data with rectangles.

## More Visualization Methods

#### Scatter Plot

Displays the relationship between two data sets as dots.

#### Pie Chart

Shows parts of a whole as slices of a circle.



# Python Code for Bar Graph

```
import matplotlib.pyplotasplt

names = ['nihal', 'shaz', 'isha', 'prabhavathi', 'tamil maran']

marks = [20, 30, 20, 40, 50]

plt.bar(names, marks, color='green', label='marks')

plt.title('Student marks')

plt.xlabel('Students')

plt.ylabel('Marks')

plt.show()
```

## Practical Applications of Data Visualization



### Track Sales Growth

Monitor company sales over months for better business planning.



#### **Monitor Health Data**

Track daily steps or heart rate for fitness and well-being.



## Manage Budget

Compare monthly expenses to wisely manage personal finances.

# More Applications



**Analyze Weather Changes** 

Visualize temperature and rainfall trends over seasons.



**Show Student Performance** 

Identify trends to improve teaching methods effectively.



## Conclusion

Data visualization with Matplotlib transforms raw data into clear, easy-to-understand charts, simplifying analysis, pattern recognition, and decision-making in real life.

THANK YOU