



Digital Transformation and Innovation



Information Technology

# Data Visualization

# Course Introduction

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Nearly every organisation bases its key decisions on sound data. This data may have been generated from the past reports or may comprise future projections. The data initially collected is just a bunch of numbers and statistics. It bears no meaning to managers until it is converted into suitable information. Data visualization allows the conversion of this information into a pictorial representation which is much easier to understand and read. These visual representations might be in the form of graphs, charts, maps, videos, dashboards, or any type of visual format. This enables rapid identifying of trends and patterns present in the data that would otherwise have been difficult to recognize and understand.

Why is data visualization important?

The human brain can comprehend a visual data set much easier than rows and rows on a spreadsheet. Since data has become such an integral part of strategic decision-making for any organisation, data visualization has spiraled to every sphere where data is utilized.

How can **Data Visualization** be made good? How to position the data, use the color scheme and other techniques to enhance the readability of the data? How to achieve data cleansing for data better visualization ? What are different tools available for data visualization ? Which tool will be suitable for which data set? Data visualization is not merely the plotting of charts and tables but requires acute preparation beforehand in the form of these questions. Data visualization is a subtle science and art. It requires comprehension of raw data and apt application of visual tools meticulously enough to draw valuable insights from the dataset.

Training has brought a sought-after Data Visualization course that elaborates both the science and art part of data visualization . Numerous available tools have been discussed in detail along with their application, pros, and cons. Professionals from all fields experience the vital need of presenting their data in a convenient form to prolifically state their points and derive enhanced understanding from it. This course is mindful of this requirement and therefore discusses important features, techniques, and concepts related to data visualization in the most beneficial manner.

## Target Audience

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- Data Analysts
- Data managers

- Strategic managers
- general managers
- departmental managers
- Business Analysts
- Database Administrators
- Startup founders
- Entrepreneurs

## Learning Objectives

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- Enable the development of visual mediums which will help data analysts to interpret the key points promptly
- Encourage faster decision making through a better understanding of visuals
- The large dataset may contain valuable information that often goes ignored, however, hidden insight is discovered when the data is visualized
- Observe data correlation through visual representation between different variables enables the entity to explore opportunities
- Allow easy recognition of trends and patterns of a large dataset that can prove to be a tedious task
- Allow faster identification of errors and mistakes

## Course Outline

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- **01 DAY ONE**

Module 1: Why data visualization ?

- Introduction to data visualization and it's importance
- Benefits of data visualization
- Users of data visualization
- Briefs of data visualization techniques: infographics, graphs, charts, etc.

## Module 2: Data Visualization Process

- Developing research question
- Gathering and cleaning data
- Data mining
- Selecting visual tools, criteria for selection
- Making data interactive

### • 02 DAY TWO

## Module 3: Use of Mapping

- Map types: heatmaps, statistical map, point map, line map, interactive map
- The increasing role of an interactive map
- Suitable for what kind of data

## Module 4: Use of Bar Graphs

- Functions: drawing comparisons and identifying patterns
- Creating bar charts
- Data suitable for bar graphs
- Types of bar graphs: horizontal, vertical, stacked, and clustered

## Module 5: Use of Pie Charts

- Functions: Cross-sectional visualization , showing the proportion
- Constructing a pie-chart
- Data suitable for Pie-charts

### • 03 DAY THREE

## Module 6: Use of Histograms

- Functions: identify the range, patterns, comparison, etc
- Constructing a histogram: parts, do's and don'ts
- Distributions: normal, bimodal, skewed
- Data suitable for histogram

## Module 7: Use of Line Graphs

- Functions
- Data suitable for Line Graphs
- Constructing a Line Graph: quantitative, independent, and dependent variable

### • 04 DAY FOUR

## Module 8: Use of Scatter Plots

- Functions: relationships
- Identifying types of correlation
- Constructing a scatter plot
- Line of best fit/ trend line

## Module 9: Challenges in Data Visualization

- Cognitive disadvantages- ambiguity, change blindness
- Emotional disadvantages- disturbing, visual stress
- Social disadvantages- cultural differences, framing effects, etc.

## • 05 DAY FIVE

### Module 10: Current Trends

- Geo-spatial visualization
- Using Chart junk
- Real-time visualization
- Video visualization
- Data stories

### Module 11: Excel Activity

- Creating charts and graphs in Excel
- Styling the tool in Excel
- Exporting from Excel
- Excel exercise- creating charts and graphs

## Confirmed Sessions

FROM	TO	DURATION	FEES	LOCATION
May 5, 2025	May 9, 2025	5 days	4250.00 \$	UAE - Abu Dhabi
Oct. 19, 2025	Oct. 23, 2025	5 days	2150.00 \$	Virtual - Online

