

# POWER BI with AI

Prerequisite: Advance Excel

**Power BI is a powerful business intelligence (BI) tool by Microsoft used for data visualization, reporting, and analytics. Here are the key topics in Power BI**

## **1. Components of Power BI**

- Power BI Desktop, Power BI Service

## **2. Power BI Architecture**

- Data Sources and Connectivity
- Data Transformation (ETL Process)
- Data Modeling, Data Visualization

## **3. Data Extraction and Transformation**

- Connecting to various data sources (Excel, SQL Server, Web, APIs, etc.)
- Using Power Query for data transformation
- Data cleansing and shaping
- Merge and Append Queries

## **4. Data Modeling**

- Relationships between tables
- Star and Snowflake Schema
- Creating a Data Model
- Managing relationships (one-to-many, many-to-many)

## **5. DAX (Data Analysis Expressions)**

- What is DAX?
- Calculated Columns vs. Measures
- Common DAX Functions:
  - Aggregation Functions (SUM, AVERAGE, COUNT)
  - Logical Functions (IF, SWITCH)
  - Date & Time Functions (TODAY, DATEDIFF)
  - Filter Functions (FILTER, ALL, RELATED)

## **6. Data Visualization**

- Overview of Power BI Visuals (Bar Chart, Pie Chart, Line Chart, etc.)
- Custom Visuals
- Formatting and Customizing Visuals
- Drill-through and Drill-down
- Using Tooltips and Bookmarks

## **7. Power BI Reports and Dashboards**

- Difference between Reports and Dashboards
- Creating Interactive Reports
- Creating a Dashboard in Power BI Service
- Using Filters and Slicers

## **8. Power BI Service**

- Publishing Reports to Power BI Service
- Creating and Managing Workspaces
- Sharing Reports and Dashboards
- Row-Level Security (RLS)
- Scheduled Data Refresh

## **9. Power BI Paginated Reports**

- When to use Paginated Reports
- Creating and Formatting Paginated Reports

## **10. Power BI Security and Administration**

- Managing User Permissions
- Row-Level Security (RLS)
- Power BI Gateway
- Power BI Licensing (Free, Pro, Premium)

## **11. Power BI Integration**

- Integrating Power BI with Excel
- Embedding Power BI Reports in SharePoint, Teams, and Apps
- Power BI and Azure Synapse Analytics
- Power Automate and PowerApps Integration

## **12. Advanced Power BI Topics**

- Performance Optimization in Power BI
- Using Parameters in Power BI
- AI Features in Power BI
- Using Python or R in Power BI
- **(AI for PowerBi)**

Duration: 18-20 Classes X 2 Hrs

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