

Power BI for Data Analytics

Duration: 3 Months (Mon–Fri, ~120 Hours)

Mode: Live Online / Classroom

Tools & Technologies: Power BI Desktop, Power BI Service, Power Query, DAX, SQL

Syllabus

Week 1

- Introduction to Business Intelligence
- SQL Basics: DDL, DML, SELECT, WHERE
- Hands-on: Writing first SQL queries on a sample dataset
- Introduction to Power BI interface
- Assignment at end of week

Week 2

- SQL Aggregations: GROUP BY, HAVING, ORDER BY
- Connecting Power BI to SQL databases (Import, DirectQuery)
- Hands-on: Importing data from SQL Server into Power BI
- Assignment at end of week

Week 3

- SQL Joins: INNER, LEFT, RIGHT, FULL
- Combining multiple SQL sources in Power BI
- Hands-on: Join Sales + Customers data in SQL, import into Power BI
- Assignment at end of week

Week 4

- Power Query Editor – cleaning & transforming data
- Removing nulls, duplicates, formatting columns
- M language basics (Power Query scripting)
- Assignment at end of week

Week 5

- Data modeling – star schema, relationships, hierarchies
- Dimension and Fact tables in Power BI

- Hands-on: Create model for Retail dataset
- Assignment at end of week

Week 6

- DAX Fundamentals – Calculated columns vs Measures
- Aggregate functions in DAX (SUM, COUNT, AVERAGE)
- Time intelligence functions (YTD, MTD)
- Hands-on: Sales KPIs using DAX
- Assignment at end of week
- Mock Interview 1

Week 7

- Advanced DAX: CALCULATE, FILTER, ALL functions
- Row context vs filter context
- Hands-on: Create Profit Margin KPI with DAX
- Assignment at end of week

Week 8

- Visualizations – bar, line, pie, maps
- Advanced visuals – decomposition tree, funnel, KPI cards
- Drill-through, slicers, bookmarks
- Assignment at end of week

Week 9

- Power BI Service – workspaces, publishing dashboards
- Row-level security (RLS)
- Data refresh scheduling
- Assignment at end of week

Week 10

- SQL + Power BI Integration
- Using SQL views in Power BI
- Query folding in Power Query
- Hybrid approach: SQL preprocessing + Power BI modeling
- Assignment at end of week

Week 11

- Project Development
- Define project requirements

- Build dashboard using SQL + Power BI
- Performance optimization
- Assignment at end of week

Week 12

- Capstone Project
- End-to-end case study presentation
- Mock Interview 2: SQL + Power BI end-to-end
- Final project submission
- Assignment at end of week

Learning Outcomes

- Understand and write SQL queries till joins
- Clean & transform data using Power Query
- Model data with star schema and relationships
- Develop KPIs and calculations using DAX
- Build interactive dashboards with Power BI
- Publish, secure, and optimize dashboards in Power BI Service
- Deliver end-to-end BI projects with SQL + Power BI