DATA ANALYTICS AND VISUALISATION USING POWER BI TRAINING COURSE

Introduction

This programme equips participants with the practical skills required to collect, transform, analyse and present organizational data using Microsoft Power BI. It focuses on converting raw data from spreadsheets, databases and other business systems into interactive dashboards, reports and visualizations that support informed decision-making. Participants learn data preparation, data modelling, relationships, calculations using Data Analysis Expressions (DAX), visualization design, report publishing and dashboard management. The programme also examines how to select appropriate performance indicators, communicate findings to decision-makers and establish reliable reporting processes. Practical exercises use realistic business scenarios involving finance, human resources, sales, operations and customer performance. Participants develop the ability to build reports that reveal trends, identify exceptions, monitor targets and support evidence-based organizational planning.

Course Objectives

- Explain the principles of data analytics and business intelligence.
- Import, clean and transform data from different sources using Power Query.
- Develop data models and establish relationships between datasets.
- Create DAX calculations, measures and calculated columns.
- Design interactive dashboards and reports using appropriate visualizations.
- Publish, share and maintain Power BI reports securely.
- Interpret analytical findings and communicate actionable recommendations.

Course Modules

> Module 1: Fundamentals of Data Analytics and Business Intelligence

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- Concepts, scope and applications of data analytics.
- Business intelligence processes and analytical workflows.
- Descriptive, diagnostic, predictive and prescriptive analytics.
- Identifying business questions, analytical requirements and KPIs.

> Module 2: Introduction to Power BI and Data Connectivity
- Power BI Desktop, Power BI Service and related components.
- Connecting to Excel, CSV, databases and online data sources.
- Import mode, DirectQuery and data connectivity considerations.
- Data refresh fundamentals and source connection management.

> Module 3: Data Preparation and Transformation Using Power Query
- Data profiling, quality assessment and error identification.
- Cleaning missing values, duplicates and inconsistent records.
- Data types, formatting, merging and appending queries.
- Transformation workflows and reusable data preparation steps.

> Module 4: Data Modelling and Relationships
- Data modelling principles and analytical data structures.
- Fact tables, dimension tables and star-schema design.
- Relationships, cardinality and filter direction.
- Date tables, model validation and relationship troubleshooting.

> Module 5: DAX Calculations and Analytical Measures
- DAX syntax, functions and calculation fundamentals.
- Measures, calculated columns and calculated tables.
- Filter context, row context and context transition.
- Time intelligence, growth rates, ratios and cumulative calculations.

> Module 6: Data Visualization and Dashboard Design
- Selecting charts and visuals for different analytical questions.
- Applying visual hierarchy, colour, layout and accessibility principles.
- Designing KPI cards, charts, matrices and geographic visuals.
- Avoiding misleading visualizations and improving analytical clarity.

> Module 7: Interactive Reports and Advanced Visual Features
- Slicers, filters, drill-down and drill-through functionality.
- Tooltips, bookmarks, buttons and report navigation.

- Conditional formatting and dynamic report interactions.
- Report layouts for desktop, mobile and different user groups

> Module 8: Performance Analysis and Business Reporting

- Designing operational, financial and management dashboards.
- Variance analysis, trend analysis and target monitoring.
- Comparative analysis across periods, departments and business units.
- Translating analytical results into management recommendations

> Module 9: Publishing, Security and Report Management

- Publishing reports to Power BI Service.
- Workspaces, apps, sharing and collaboration.
- Row-level security and controlled access to data.
- Scheduled refresh, report maintenance and performance considerations.

> Module 10: Integrated Power BI Analytics Project

- Defining a business problem and identifying relevant data.
- Preparing datasets and developing a reliable analytical model.
- Creating an interactive dashboard with measures and visualizations.
- Presenting findings, recommendations and an implementation plan.

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