

Business Intelligence with Power BI

Intermediate – 4 days

This course is designed for those who have already acquired the basics of Power BI and wish to expand their skills. This training path focuses on more advanced data modeling techniques, the use of DAX language for complex calculations, and the creation of optimized and interactive reports. Participants will also explore UI/UX best practices to create more intuitive and performant dashboards. The goal is to enhance data analysis and presentation skill to meet business needs.

Course Objectives

- Apply advanced data modeling techniques.
- Use the DAX language to perform complex calculations.
- Create interactive reports optimized for business analysis.
- Implement UI/UX best practices to improve the user experience.
- Optimize report performance and manage large volumes of data.
- Publish and share reports on Power BI Service, managing permissions and access.

Target Audience

The course is aimed at:

- Data analysts who have a basic understanding of Power BI and want to perfect their use of DAX and data modeling.
- Business professionals who want to create interactive reports and more effective dashboards for their analytics.
- Power BI users who want to optimize the performance of their reports and apply visualization best practices.
- Managers and team leaders who need advanced reporting to make informed decisions.

Course Duration

4 days

Course Program

Day 1 - Introduction, Data Connection and First Visualizations

Get started with Power BI

- What is Business Intelligence and why is it important?
- Differences between licenses: Free, Pro, Premium.
- Tools: Power BI Desktop vs Power BI Service.
- Installing Power BI Desktop and first setup.

Connecting to Data

- Connect to various data sources (Excel, database, cloud, etc.).
- Cleansing and transforming data with **Power Query Editor**.
 - Evaluate data quality: handling null values and unexpected data.
 - Remove unnecessary rows and columns.
 - Merge and combine queries.
 - Unpivot tables.
- Load the data into the Power BI model.

Advanced Data Modeling

- Introduction to **Data Modeling concepts**.
- Create **star** and **snowflake schema** data models.
- Advanced relationships: one-to-one, many-to-many, and bidirectional relationships.
- Creating fact and dimension tables optimized for performance.
- Using keys and manage relationships between tables.
- Creating a calendar table and working with it in relationships.

Creating Visualizations

- Explore the types of visualizations available in Power BI:
 - Bar charts (stacked and clustered), line charts, matrices, cards and donut charts.
- Insert and customize **slicers** to filter data interactively.
- Filtering reports and managing filters at the page and visual level.

Day 2 - Views, DAX and Reporting

Visualizations and Layouts

- Introduction to the concept of **implicit** and **explicit measures**.
- Creating **simple measurements** with DAX (e.g., sums, averages).
- Improve the aesthetics of visualizations:
 - Apply predefined themes.
 - Customize colors, backgrounds, and layouts.
 - Add background images and company logos.

Creating Reports

- Build the first report with **interactive visualizations**.
- Conditional formatting **management**: Apply custom data bars, icons, and colors.

Using DAX formulas

- The difference between **measures** and **calculated columns**.
- Use of advanced aggregation functions (e.g. **SUMX**, **AVERAGEX**, **COUNTROWS**).
- DAX functions for **row context** and **filter context**.
- Introduction to the **transition context** with **CALCULATE**.

Advanced DAX

- Complex conditional functions: **IF**, **SWITCH**.
- Create and use **calculated tables**.
- Define KPIs using DAX.
- Organize measures into dedicated tables for more efficient management
- Time Intelligence Features:
 - Manage advanced calculations such as year-over-year (YoY), month-over-month (MoM) analysis, and cumulative calculations (YTD, MTD, QTD).
 - Compare parallel periods (e.g. previous year, previous month).

Day 3 – Advanced Reporting and Optimization

Advanced Visualizations

- Creating complex charts: combo charts, scatter plots, heatmaps, tree maps.

- Create **drill through pages** to drill down into the details about your data.
- Advanced synchronization of **slicers** between different pages.
- Create **custom tooltip pages** to dynamically provide additional details.

Improving UI/UX

- Best practices for **User Interface (UI)** e **User Experience (UX)**.
- Create intuitive layouts with a clear visual hierarchy.
- Advanced use of **Bookmarks** and **Navigation Bars** to improve interactivity.
- Customize corporate **themes** and color palettes.

Optimizing Report Performance

- Improve performance by reducing the number of complex **views** and **queries**.
- Using **Aggregations** for large volumes of data.
- Reducing load times with optimized **Direct Query** and **Import** modes.

Day 4 - Publishing and Sharing

Publishing and Sharing

- How to publish a report to **Power BI Service** and manage workspaces.
- Sharing reports with internal and external users.
- Permission management and data access.
- Configure **automatic data refresh**.

Creating Dashboards

- Create interactive dashboards **pinning** the **Tiles**.
- Add links and custom **navigation** between dashboards.
- Manage **mobile optimization**.
- Using **Q&A** feature to query data.

Dashboard e Best Practices

- Setting up **automatic data refresh**.
- Configuring **alerts** and **notifications** based on specific conditions

Solution of a Case Study

- Solving a real-world case study by applying Power BI features.

Summary of the Fundamental Technical Aspects

- Review of the key points covered in the course.
- Tips for daily use of Power BI.

Additional Resources

- Reference materials for post-course practice
- Proposals for exercises to maintain and consolidate the skills acquired.

The Trainer

With years of experience in corporate training, I am well-versed in teaching advanced tools such as Power BI, Python and Tableau. Thanks to the practical and straightforward approach, course participants implement effective solutions right from the start.

Contact me for more information

Would you like to train yourself or your team in Power BI, Python, Tableau, or ChatGPT? Write to me for a free consultation or to receive more details about personalized courses.

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