# 20-Day Power BI Learning Plan with Lab Exercises

## Day 1-2: Introduction to Power BI

- What is Power BI? Overview of Components (Desktop, Service, Mobile)
- Installing Power BI Desktop and setting up the workspace
- Connecting to Excel, SQL, Web APIs, and other data sources
- Lab: Load and explore an Excel dataset in Power BI

Day 3-4: Data Cleaning and Transformation (Power Query)

- Handling missing data, removing duplicates, filtering data
- Transforming data (split columns, merge queries, unpivot data)
- Creating calculated columns and custom columns
- Lab: Clean and shape a messy dataset using Power Query

Day 5-6: Data Modeling and Relationships

- Understanding data models: Star Schema vs Snowflake Schema
- Creating relationships between tables
- Using primary keys and foreign keys
- Lab: Build a relational data model with multiple tables

Day 7-8: Introduction to DAX (Data Analysis Expressions)

- Understanding calculated columns vs measures
- Basic DAX functions: SUM, COUNT, AVERAGE, MIN, MAX
- Lab: Create calculated columns and measures in Power BI

Day 9-10: Advanced DAX Functions

- CALCULATE, FILTER, ALL, RELATED, RANKX
- Time Intelligence functions (DATEADD, SAMEPERIODLASTYEAR, TOTALYTD)
- Lab: Create a dynamic year-over-year sales comparison

Day 11-12: Data Visualization Best Practices

- Choosing the right chart type for different data
- Customizing visuals: colors, labels, tooltips, drill-through
- Lab: Create an interactive sales dashboard with slicers and filters

Day 13-14: Advanced Visualizations & Custom Visuals

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- Using conditional formatting, custom tooltips, and bookmarks
- Adding dynamic buttons and navigation
- Lab: Design a Power BI report with advanced interactivity

Day 15-16: Power BI Service & Report Publishing

- Publishing reports to Power BI Service
- Creating dashboards and managing workspace permissions
- Lab: Publish a Power BI report and set up scheduled refresh

Day 17-18: Power Automate & Power BI Integration

- Automating workflows using Power Automate
- Sending notifications based on Power BI alerts
- Lab: Create an automated report distribution system

Day 19-20: Optimization & Best Practices

- Performance tuning (Reducing model size, optimizing DAX)
- Security considerations (Row-Level Security, Data Governance)
- Lab: Optimize a Power BI report and implement row-level security

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