Power BI - Comprehensive Syllabus

Week 1: Introduction to Power BI

- Lesson 1.1: What is Power BI?
    - Overview of Business Intelligence
    - Introduction to Power BI
    - Power BI Components: Power BI Desktop, Power BI Service, Power BI Mobile
- Lesson 1.2: Installing and Setting Up Power BI Desktop
    - System Requirements
    - Download and Installation
    - Power BI Interface Overview

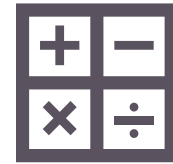# Week 2: Getting Started with Power BI Desktop

- Lesson 2.1: Connecting to Data Sources
    - Importing Data from Excel
    - Connecting to Databases
    - Using Web Data Sources

- Lesson 2.2: Data Transformation and Cleaning
    - Using Power Query Editor
    - Basic Transformations: Filtering, Sorting, and Grouping Data
    - Handling Missing Data
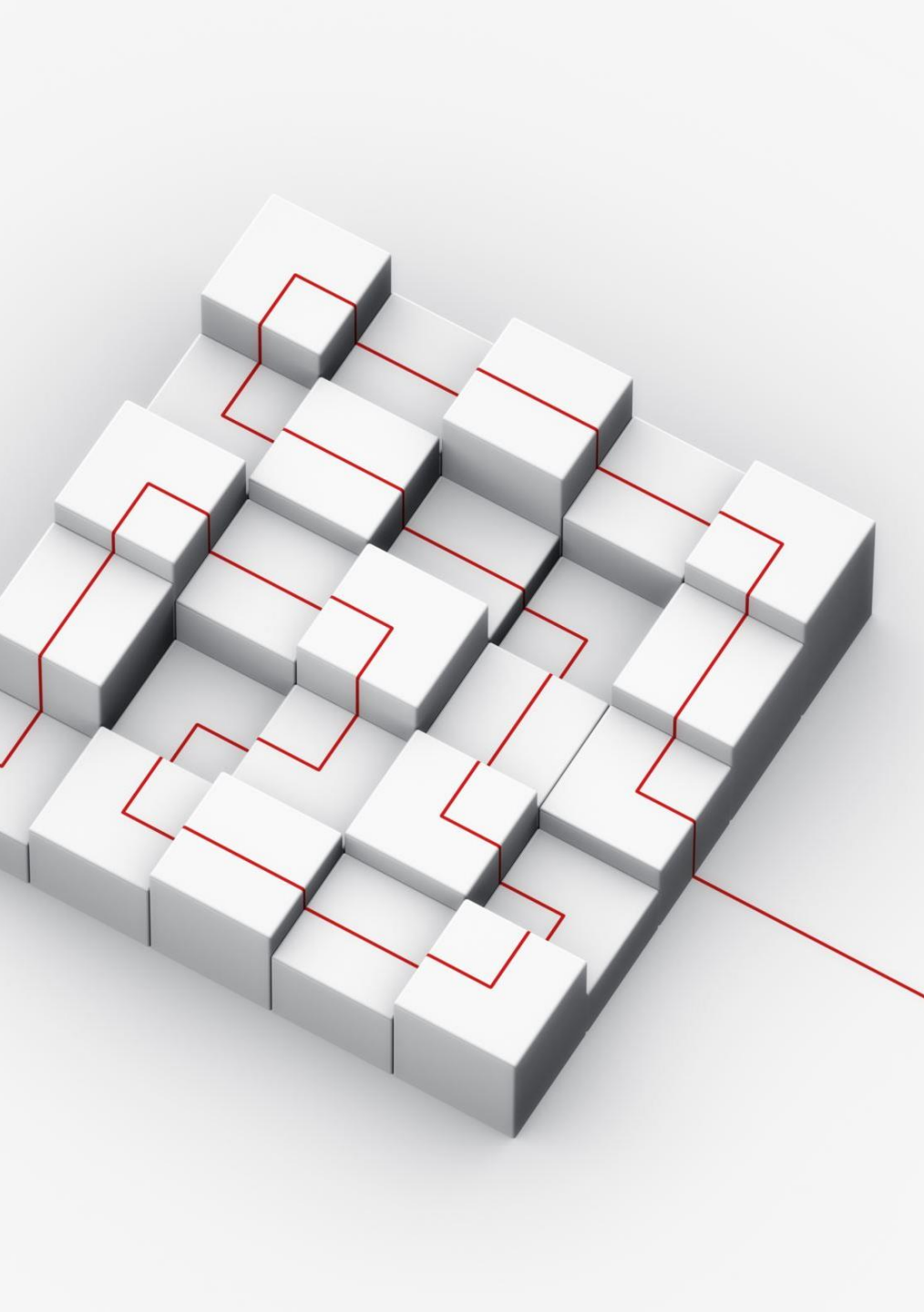
Week 3: Data Modeling in Power BI

Lesson 3.1: Introduction to Data Modeling

Understanding Data Models

Creating Relationships between Tables

Cardinality and Cross-Filter Direction

Lesson 3.2: DAX Basics

Introduction to DAX

Calculated Columns and Measures

Common DAX Functions: SUM, AVERAGE, COUNT

Week 4: Creating and Customizing Visualizations

- Lesson 4.1: Introduction to Visualizations
  - Types of Visualizations in Power BI
  - Creating Basic Charts: Bar, Line, Pie Charts
- Lesson 4.2: Customizing Visualizations
  - Formatting Visuals
  - Using Visual Filters
  - Creating Hierarchies and Drillthrough

Week 5: Advanced Visualizations and Reports

Lesson 5.1: Advanced Chart Types

Map Visualizations

Gauge and Card Visuals

Custom Visuals

Lesson 5.2: Designing Interactive Reports

Using Slicers and Filters

Bookmarking and Tooltips

Best Practices for Report Design

Week 6: Publishing and Sharing in Power BI

- Lesson 6.1: Power BI Service
  - Publishing Reports to Power BI Service
  - Introduction to Workspaces and Dashboards
  - Sharing Reports and Dashboards
- Lesson 6.2: Power BI Mobile and Collaboration
  - Viewing Reports on Mobile Devices
  - Collaborating with Teams
  - Data Refresh and Scheduled Refresh

Week 7: Advanced Data Modeling

- Lesson 7.1: Advanced DAX Functions
  - Time Intelligence Functions
  - Financial Functions
  - Statistical Functions

- Lesson 7.2: Optimizing Data Models
  - Performance Tuning
  - Managing Relationships and Cardinality
  - Using Calculated Tables and Measures

Week 8: Advanced Data Transformation and ETL

- Lesson 8.1: Advanced Power Query Techniques
    - M Language Basics
    - Advanced Transformation Techniques
    - Custom Functions in Power Query
- Lesson 8.2: ETL Processes
    - Extract, Transform, Load Concepts
    - Automating Data Refresh
    - Integrating with External ETL Tools

Week 9: Advanced Reporting Techniques

Lesson 9.1: Advanced Visual Customizations

Custom Themes

Conditional Formatting

Using R and Python Visuals

Lesson 9.2: Advanced Interactivity

Using Parameters

Drillthrough and Page Navigation

Advanced Bookmarking Techniques

Week 10: Power BI Administration and Security

Lesson 10.1: Power BI Administration

Admin Roles and Responsibilities

Managing Workspaces and Users

Monitoring and Auditing Power BI Usage

Lesson 10.2: Data Security and Compliance

Row-Level Security

Data Privacy and Governance

Compliance and Regulatory Requirements

Week 11: Integration with Other Tools

- Lesson 11.1: Power BI and Excel Integration
    - Using Power BI with Excel
    - Importing and Exporting Data
    - PowerPivot and Power Query in Excel
- Lesson 11.2: Integrating with Other Microsoft Services
    - Power BI and Azure
    - Power BI and SharePoint
    - Power BI and Microsoft Teams

Week 12: Real-World Applications and Capstone Project

- Lesson 12.1: Real-World Case Studies
  - Industry Examples of Power BI Applications
  - Best Practices and Common Pitfalls
- Lesson 12.2: Capstone Project
  - Applying Learned Skills to a Real-World Scenario
  - Creating a Comprehensive Report
  - Presenting the Final Project

Week 13: Review and Certification Preparation

- Lesson 13.1: Review and Q&A
  - Review of Key Concepts
  - Q&A Session

- Lesson 13.2: Certification Preparation
  - Overview of Power BI Certification Exams
  - Practice Exams and Study Tips
  - Next Steps and Career Opportunities