Learn Microsoft Power BI – Chapter Wise Content

Chapter 1: Introduction to Power BI and DAX

- What is Power BI?
- Role of DAX (Data Analysis Expressions)
- Difference between Calculated Columns, Measures, and Tables
- Understanding row context vs filter context
- Syntax basics in DAX

Chapter 2: Aggregation Functions

- Overview of Aggregations
- Functions: `SUM`, `SUMX`, `AVERAGE`, `AVERAGEX`, `COUNT`, `COUNTROWS`, `COUNTAX`, `DISTINCTCOUNT`, `MAX`, `MIN`, `PRODUCT`
- Use Cases:
    - Total Sales Calculation (`SUM`)
    - Average Order Value (`AVERAGEX`)
    - Distinct Customer Count (`DISTINCTCOUNT`)

Chapter 3: Date and Time Functions

- Importance of Date/Time in BI
- Functions: `TODAY`, `NOW`, `DATE`, `DATEDIFF`, `EOMONTH`, `NETWORKDAYS`, `YEAR`, `MONTH`, `WEEKNUM`, `CALENDAR`, `CALENDARAUTO`
- Use Cases:
    - Year-to-Date sales comparison
    - Business days calculation (`NETWORKDAYS`)
    - Creating a custom Date Table

Chapter 4: Filter Functions

- Understanding Filter Context
- Functions: `ALL`, `ALLEXCEPT`, `REMOVEFILTERS`, `FILTER`, `CALCULATE`, `KEEPFILTERS`, `LOOKUPVALUE`, `RANK`, `RUNNINGSUM`
- Use Cases:
    - Ignoring filters for “Total Sales”
    - Calculating Rank of a product
    - Applying conditional filters with `CALCULATE`

Chapter 5: Financial Functions

- Role in financial modeling
- Functions: `FV`, `PV`, `RATE`, `NPER`, `PMT`, `PPMT`, `ACCRINT`, `DDB`, `SLN`, `XNPV`, `XIRR`
- Use Cases:
    - Loan payment calculation (`PMT`)
    - Net Present Value of cashflows (`NPV`, `XNPV`)
    - Depreciation models (`DDB`, `SLN`)

Chapter 6: Information & Info Functions

- Functions for Metadata & Diagnostics
- `HASONEVALUE`, `ISBLANK`, `ISERROR`, `CONTAINS`, `ISEMPTY`, `USERNAME`, `USERPRINCIPALNAME`, `COLUMNSTATISTICS`
- Use Cases:
    - Checking if a measure returns blank
    - User-based row-level security
    - Model inspection

Chapter 7: Logical Functions

- Decision Making in DAX
- Functions: `IF`, `IFERROR`, `SWITCH`, `AND`, `OR`, `NOT`, `COALESCE`
- Use Cases:
    - Classifying orders as High/Low value (`IF`)
    - Handling division by zero (`IFERROR`)

    - Creating custom categories (SWITCH)

Chapter 8: Math and Trigonometry Functions

- Functions: ABS, ROUND, ROUNDUP, ROUNDDOWN, MOD, POWER, SQRT, RAND, RANDBETWEEN, DIVIDE, CEILING, FLOOR, LOG, PI
- Use Cases:
    - Random sampling (RANDBETWEEN)
    - Discount calculations using ROUND
    - Growth calculations using POWER

Chapter 9: Parent-Child and Relationship Functions

- Working with Hierarchies
- Functions: PATH, PATHITEM, PATHCONTAINS, RELATED, RELATEDTABLE, USERELATIONSHIP, CROSSFILTER
- Use Cases:
    - Employee hierarchy path (PATH)
    - Activating inactive relationships (USERELATIONSHIP)
    - Fetching related values (RELATED)

Chapter 10: Statistical Functions

- Functions: MEDIAN, MEDIANX, GEOMEAN, STDEV.P, VAR.S, RANKX, CONFIDENCE.T, NORM.DIST, LINEST
- Use Cases:
    - Median salary distribution
    - Standard deviation of sales performance
    - Product ranking by revenue

Chapter 11: Table Manipulation Functions

- Functions: ADDCOLUMNS, SELECTCOLUMNS, SUMMARIZE, UNION, EXCEPT, INTERSECT, TOPN, GENERATESERIES, VALUES, CROSSJOIN
- Use Cases:
    - Creating calculated tables
    - Top N customers report (TOPN)
    - Joining datasets (UNION, INTERSECT)

Chapter 12: Text Functions

- Functions: CONCATENATE, CONCATENATEX, FORMAT, LEFT, RIGHT, MID, SEARCH, REPLACE, TRIM, UPPER, LOWER, VALUE
- Use Cases:
    - Creating full names (CONCATENATE)
    - Formatting dates as text (FORMAT)
    - Extracting codes from product strings

Chapter 13: Time Intelligence Functions

- Core to BI Analysis
- Functions: DATESYTD, DATESMTD, DATESQTD, SAMEPERIODLASTYEAR, PREVIOUSYEAR, DATEADD, TOTALYTD, TOTALMTD, CLOSINGBALANCEYEAR, OPENINGBALANCEMONTH
- Use Cases:
    - Year-over-Year (YoY) sales growth
    - Month-to-Date performance tracking
    - Seasonal trend analysis