



Syllabus: Data Analytics with Power BI, SQL, ETL and Projects:

From <http://myyesm.com>, 732-325-1126.

Note – We can do this course with either Power BI or Tableau.

Introduction

- Intro to Data Analysis
- Steps to prepare data for Data Analysis
- Types of Data Analysis

Who is a Database Analyst?

- What are the roles of Database Analyst?
- Difference between Business Analyst and Database Analyst
- OLTP v/s OLAP

Environment SQL Setup

- What is SQL Server?
- SQL Server Installation Requirements
- Connect to SQL Server with SSMS
- SQL Server Configuration Manager
- Download and Install SSDT

Data Analysis with ETL with SSIS

- ETL process
- What is SSIS
- Create a new SSIS project
- Add flat file connection manager
- Remap column data types
- Configure OLE DB connection Manager
- Add a data flow task
- Add and Configure Flat file source
- Add and Configure OLE DB Destination
- Test and Run Package

Data Analytics with SQL and Table Joins

- What is SQL?
- SQL Syntax
- What is TSQL?
- SQL Server Data Types
- SQL Server Functions (Count, Sum, Avg, Min, Max)
- Operators
- SQL Commands
 - DDL
 - DML
 - TCL

- Sub Query
- Joins
- SQL homework 1, 2, and 3

Starting with Power BI

- What is Power BI?
- What is Power BI Desktop
- Install Power BI Desktop
- Exploring Power BI Desktop
- Power BI Overview
- Components of Power BI
- Exploring Power BI Desktop Interface
- Power BI Licensing

Data Loading with Power BI Desktop

- Types of different Data loading modes
 - Import
 - Direct
 - Live
- Excel, CSV, PDF, SharePoint, Folder
- SQL Data loading
- Cube Data loading
- Combining Data Sources
- Appropriate HomeWorks

Data Transformation with Power BI

- Transforming Database Data
- Changing Locale
- Connecting to access database data
- Power Query Editor and Queries
- Creating and managing query groups
- Renaming Queries
- Splitting Columns
- Changing Data Types
- Removing and Reordering Columns
- Duplicating and adding columns
- Creating Conditional Columns
- Connecting to files in folders
- Appending Queries
- Merge/Joins Queries
- Query Dependency Views
- Transforming Less Structured Data Creating Tables
- Query Parameters
- Appropriate HomeWorks

Data Modeling

- Introduction to Data Models
- Components of Data Modeling
- Data Model Engine
- Types of Data Model (Flat, Star & Snowflake)
- Granularity of Data & multiple fact tables
- Data Modeling Relationships

- One to One
- One to Many
- Many to Many
- Roll Playing Tables
- Sorting/Renaming/Hiding Tables
- Hierarchy Creation
- Formatting & Data Category
- Grouping / Binning
- Drill Through Reports
- What IF Parameter
- Appropriate HomeWorks

DAX

- Introduction DAX
- DAX Data Types
- Calculated Columns
- Calculated Tables
- Calculated Measures
- Calculated Columns vs Measures
- Aggregated Functions (SUM, MIN, MAX, AVG, COUNT)
- Relate Functions (RELATED & RELATED TABLE)
- Iterative Functions (SUMX, AVGX, COUNTX)
- Variables (VAR)
- Logical functions (AND, OR, IF, SWITCH)
- Table Functions (VALUES, FILTER, CALCULATETABLE)
- FORMAT FUNCTION, FIND, SEARCH, SUBSTITUE, VALUE, UNION, ROW, ADDCOLUMNS, SUMMARIZE
- Handling Blanks (ISBLANK, NOTISBLANK)
- Rank Functions (RANKX)
- CALCULATE (ALL, ALLEXCEPT, ALLSELECTED)
- Understand Row & Table level Filter Context
- Date Functions (DATEADD, DATEDIFF, TODAY Required Date Formats)
- Calendar Functions (CALENDAR, CALENDAT AUTO)
- Time Intelligence functions (TOTALMTD, TOTALQTD, TOTALYTD, PARALLELPERIOD, SAMEPERIODLASTYEAR, PARALLELPERIOD, RUNING TOTAL)
- SEMI ADDITIVE (OPENING BALANCE, CLOSING BALANCE, LAST DATE, FIRST DATE, LASTNONBLANK, FIRSTNONBLANK)
- Appropriate HomeWorks

Power BI Visualization

- Designer Options
- Power BI Visualization Types
- Custom Visualization
- Best Practices
- Choosing Colors
- Types of Charts and Usage
- Slicers / Filters
- Creating Complete Visualization Report (Practical)
- Story Telling with the created Report
- Bookmarks and Selection Pane
- Spotlight
- Drill Through
- Additional Features
- Appropriate HomeWorks

Power BI Service (*Two Months Power BI Pro License*)

- Publishing / Deploying Reports
- Apps Workspace & Roles
- Creating Dashboard
- Q&A
- Quick Insights
- Dashboard Options
- Subscription
- Alerts
- Export Options (Embed, Web, Power Point...etc.)
- Excel Integration
- Row Level Security
 - Static
 - Dynamic
- Data Refresh Concept
- Gateway and Installation
- Power BI Mobile Service
- Power BI Admins Roles
- Audit Logs
- Appropriate HomeWorks

Project & Discussion (Q&A)

- Project 1
- Project 2