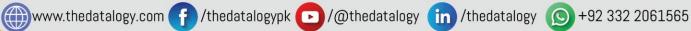




MICROSOFT EXCEL PROGRAM OUTLINE

18 HOURS - 9 CLASSES - 3 WEEKS













- Microsoft Excel Overview
- Basic Options, Ribbons and Toolbar
- Introduction to Basic Formulas and Functions (40+)
 - Arithmetic Functions
 - Logical Functions
 - Mathematical Functions
 - Statistical Functions
 - Lookup Functions
 - Information Functions
 - Text Functions
 - Date & Time Functions
 - Financial Functions





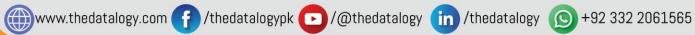








- Data Consolidation vs IFs (SUMIF, COUNTIF & AVERAGEIF)
- **Data Consolidation**
- Static Report
- Dynamic Report
- Using Goal Seek to Find Out How to Get a Desired Result
- Hide Formulas







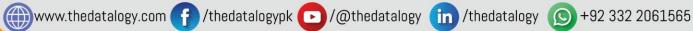








- Freeze Panes
- Format Painter
- Cell Comments
- Printing Options
- Paste Special with Tricks
- Dropdown list
- Sorting
- Auto Filter
- Advanced Filter













- **Conditional Formatting Simple**
- **Conditional Formatting Advanced**
- Conditional Formatting to Highlight Required Value Visualization with **Conditional Formatting**
- Subtotal
- **Hyperlinks in Excel**
- **Protecting and Sharing Worksheets**
- **Using Multiple Formulas with Subtotal**



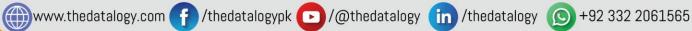








- **Understanding Pivot Tables & Pivot Chart**
- **Creating and Pivoting Pivot Tables & Pivot chart**
- **Using Lookup Functions**
 - Hlookup
 - Vlookup
- **Data Table**
- **Remove Duplicates**













- Create Form In Excel
- Difference between SUM, SUMIF, SUMIFS
- **Index Match**
- **Macros In Depth**
 - Understanding what a Macro does
 - **Recording a Macro**
 - Run A Macro
 - Macro workbook





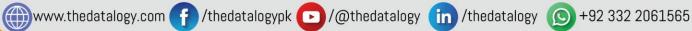








- **Working with Charts**
 - Bar Chart
 - Area Chart
 - Scatter Chart
 - **Bubble Chart**
- Tips & Tricks















SQL PROGRAM OUTLINE 18 HOURS - 9 CLASSES - 3 WEEKS







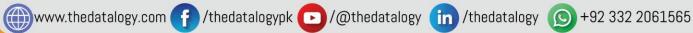




- Introduction to SQL Server
- Overview of SQL Server
- What is SQL Server?
- Installation and Setup
- SQL Server Management Studio (SSMS) Interface

BASICS OF SQL

- Introduction to SQL
- SQL Syntax and Structure
- Data Types
- Basic SQL Commands
- SELECT, FROM, WHERE
- INSERT, UPDATE, DELETE
- Filtering and Sorting Data
- WHERE Clause
- ORDER BY Clause















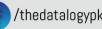
Advanced SQL Queries

- Aggregate Functions
- COUNT, SUM, AVG, MIN, MAX
- Grouping Data
- GROUP BY Clause
- HAVING Clause
- Joining Tables
- INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL JOIN

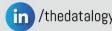
DATA MANIPULATION AND TRANSFORMATION

- Subqueries and Nested Queries
- Common Table Expressions (CTEs)
- Window Functions
- ROW_NUMBER(), RANK(), DENSE_RANK(), NTILE()











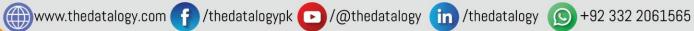


DATA TRANSFORMATION TECHNIQUES

- working with complex data types
- Working with Dates and Times
- Date Functions
- String Functions
- CONCAT, SUBSTRING, CHARINDEX, REPLACE

SQL SERVER ADVANCED TOPICS

- Indexing and Performance Tuning
- Creating and Managing Indexes
- Query Optimization
- Stored Procedures and Functions
- Creating and Executing Stored Procedures
- User-Defined Functions













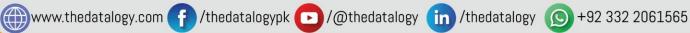


DATA ANALYSIS AND REPORTING

- Basic Data Analysis Techniques
- Descriptive Statistics
- Using SQL for Data Analysis
- Exploratory Data Analysis (EDA)
- Generating Reports
- Creating Simple Reports in SSMS
- Exporting Data to Excel

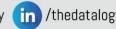
HANDS-ON PROJECTS AND CASE STUDIES

- Real-world Data Analysis Projects
- Case Studies













MICROSOFT POWER BI PROGRAM OUTLINE

36 HOURS - 18 CLASSES - 6 WEEKS













Learning Path 1: Get started with Microsoft data analytics

Module 1: Discover Data Analysis

- Introduction Overview of data analysis
- Roles in data
- Tasks of a data analyst

Module 2: Get started building with Power BI

- Introduction Use Power BI
- **Building blocks of Power BI**
- Tour and use the Power BI service







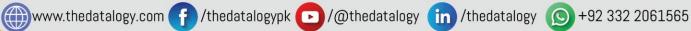




Learning Path 2: Prepare data for analysis with Power BI

Module 3: Prepare data for analysis with Power BI.

- Introduction.
- Get data in Power Bl.
- Get data from files.
- Get data from databases.
- Get data from relational data sources.
- Create dynamic reports with parameters.
- Get data from Online services.











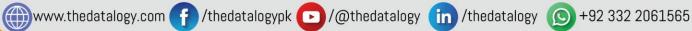




Learning Path 2: Prepare data for analysis with Power BI

Module 4: Clean, Transform and load data in Power BI.

- Introduction to Power Query.
- Shape the initial data.
- Transform the data according to the need with Power Query.
- Simplify the data structure.
- Evaluate and change column data types.
- Combine multiple table into a single table.
- Profile data in Power Bl.
- Use Advanced Editor to modify M code.















Module 5: Describe Power BI Desktop Models

- Introduction.
- Star Schema Design.
- Configure report visuals.

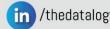
Module 6: Choose a Power BI model framework

- Describe Power BI model fundamentals.
- Determine when to develop and import model.
- Choose a model framework.













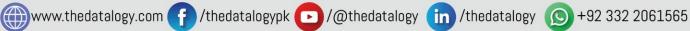
Learning Path 3: Model data with Power BI

Module 7: Design a semantic model in Power BI

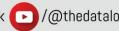
- Introduction.
- Work with tables.
- Create a date table.
- Work with dimensions.
- Work with relationships and cardinality.
- Resolve modelling challenges.

Module 8: Write DAX formulas for Power BI Desktop models

- Introduction.
- Write DAX formulas.
- DAX data types.
- Work with DAX functions.
- Use DAX operators.













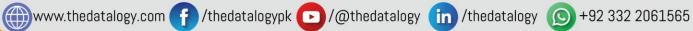
Learning Path 3: Model data with Power BI

Module 9: Use DAX time intelligence functions in Power BI Desktop Models

- Use DAX time intelligence functions.
- Additional time intelligence calculations.

Module 10: Add Measures to Power BI Desktop Models

- Introduction.
- Create simple measures.
- Create compound measures.
- Create quick measures.
- Create calculated columns with measures.













Learning Path 3: Model data with Power BI

Module 11: Add Calculated tables and columns to Power BI Desktop Models

- Introduction.
- Create calculated columns.
- Learn about row context.
- Choose a technique to add a column.

Module 12: Optimize a model for performance in Power BI

- Introduction to performance optimization.
- Review performance of measures, relationships and visuals.
- Reduce cardinality.
- Apply good modelling practices.













Learning Path 4: Build Power BI visuals and reports

Module 13: Scope report design requirements

- Identify the audience.
- Determine report types.
- Define user interface requirements.
- Define user experience requirements.

Module 14: Design Power BI reports

- Design the analytical report design.
- Design visually appealing reports.
- Report objects.
- Select report visuals.
- Select report visuals to suit the report layout.
- Format & configure visualizations.
- Work with KPI (Key Performance integrators)













Learning Path 4: Build Power BI visuals and reports

Module 15: Configure Power BI report filters

- Apply filters to the report structure.
- Apply filters with slicers.
- Visual level filters.
- Page and report level filters.
- Design report with advanced filtering techniques.
- Select report filter techniques.

Module 16: Enhance Power BI report designs for the user experience

- Design report to show details.
- Design report to highlight values.
- Design report that behave like Apps.
- work with bookmarks.
- design report for navigations.
- Work with visuals headers.
- Tune report performance.
- Optimize report for mobile use.















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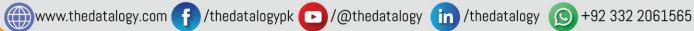
Learning Path 5: Manage workspaces and datasets in Power BI

Module 17: Create and manage workspaces in Power BI Service

- Distribute a report to dashboard.
- Monitor usage and performance.
- Configure data protection.

Module 18: Manage semantic models in Power BI

- Use a Power BI gateway to connect to On Premises data sources.
- Configure a semantic model schedule refresh.
- Configure incremental refresh settings.
- Manage and promote semantic models.
- Troubleshoot service connectivity.









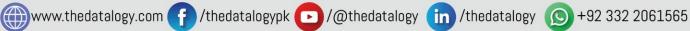




Learning Path 5: Manage workspaces and datasets in Power BI

Module 19: Create dashboards in Power BI Service

- Introduction to Power BI Service dashboards.
- Configure data alert.
- Explore data by asking questions.
- Review quick insights.
- Add a dashboard theme.
- Configure a real time dashboard.
- Set Mobile View.











PYTHON PROGRAM OUTLINE

18 HOURS - 9 CLASSES - 3 WEEKS













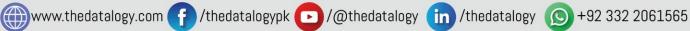


Course Welcome and Setup

- **Course Overview**
- Python Overview
- **Anaconda Distribution Installation**
- Jupyter Notebook 101
- Jupyter Notebook Adding Comments in Cells

OBJECTS, VARIABLES & DATA TYPES

- Objects and Variables Overview
- Numbers
- Strings
- **String Operations**
- **String Methods and Properties**
- **String Concatenation and Formatting**
- Lists
- **Dictionaries**
- **Tuples and Sets**
- **Booleans**













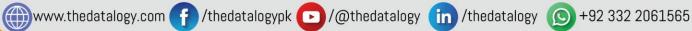


CONTROL, FLOW & LOOPS

- **Python Operators**
- **Control Flow**
- For Loops
- For Loops (continued)
- While Loops
- Break, Continue and Pass Statements
- List Comprehension
- IN and NOT IN

FUNCTIONS

- **Built-In Functions**
- **User Defined Functions**
- User Defined Functions Examples
- **Arguments and Keyword Arguments**
- Map and Filter
- Lambda Functions
- **Errors and Exception Handling**















PANDAS (DATA ANALYSIS & MANIPULATION)

- **Pandas Overview**
- Introduction to Series
- Introduction to DataFrames
- Selecting Data
- Selecting Data 2
- Data Manipulation 1
- Data Manipulation 2
- **Data Aggregation and Grouping**
- **Data Cleansing**
- **Combining DataFrames**
- **Windowing Operations**

Working with Dates and Times

- Date and Time Data Types and Operations
- Resampling and Time Series Analysis
- Date Functionality in Pandas













THE DATALOGY Empowering Minds With Future Tech

PROGRAM OUTLINE

CONNECTING TO DATA SOURCES

- **Excel and CSV**
- HTML
- **Databases**
- Pandas Input and Output Methods

MATPLOTLIB (DATA VISUALIZATION)

- Matplotlib Overview
- Choosing the Right Chart Type
- Creating a Plot Area 1
- Creating a Plot Area 2
- **Bar Plots**
- **Line Plots**
- **Scatter Plots**
- Histograms
- **Box Plots and Violin Plots**
- **Style and Presentation**
- **Additional Resources and Cheat Sheets**













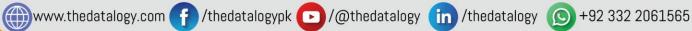


SEABORN (STATICAL DATA VISUALIZATION)

- Seaborn Overview
- **Categorical Plots**
- **Relational Plots**
- **Distribution Plots**
- **Regression Plots**
- **Matrix Plots**
- Multi Plot Grids
- Style and Presentation

AUTOMATING EXCEL OPERATIONS

- Working with Excel files using Pandas and OpenPyXL
- Creating Excel Charts and Pivot Tables Programmatically
- **Automating Data Extraction and Formatting**
- Using XlsxWriter for Advanced Formatting















WEB SCRAPPING & DATA COLLECTION

- Basics of Web Scraping with BeautifulSoup
- Automating web Data Collection using Requests and Selenium
- Data Storage and Preprocessing after Scraping

Automating Data Import/Export

- Reading and writing CSV, Excel, JSON, and SQL files
- Automating connections to databases using SQLAlchemy
- **Exporting Data to different Formats**

















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