

A woman with dark braids and large hoop earrings is looking down at a laptop screen. The background is a blurred office environment. A white grid pattern is overlaid on the left side of the image.

Data Analytics

A top-down view of a wooden desk. On the left, there is a silver laptop with a black keyboard. In front of the laptop is a white mug filled with black coffee. To the right of the mug are a pair of black-rimmed glasses. The background is a light-colored wall.

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Course Introduction

A properly refined set of data can provide actionable information that companies can use to make informed decisions. A well-designed and refined data warehouse can quickly transform usable information into a decision-making tool that allows companies to make informed decisions.

This is why organizations are in search of Business Intelligence (BI) analysts skilled in descriptive, diagnostic, and prescriptive models. The progressions help organizations drive important decisions with data and deliver powerful visualizations to help businesses understand their processes, customers, and products.



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Course Objectives

This program is designed to take individuals with either fundamental or no knowledge of analytics to becoming BI experts. You will learn how to create management-level reports, visualization, and make business-relevant forecasts.

Course Prerequisites

This program is designed to take individuals with either fundamental or no knowledge of analytics to becoming BI experts. You will learn how to create management-level reports, visualization, and make business-relevant forecasts.



Course Structure

There are three major levels to this course

- Advanced Microsoft Excel for data analysis
- Power BI for Data Modeling and Reporting
- SQL for Data Analytics and Reporting



Level 1: Advanced Microsoft Excel For Data Analysis

Chapter 1: Introducing MS Excel

- Excel Interface
- Functions and Formulas
- Flash fill and Autofill
- Data Formatting
- Introducing tables and Quick Analysis
- Creating basic charts with Excel
- Introducing Pivot Tables



Chapter 2: Functions and Formulas

- Text functions
- Aggregation functions
- Datetime functions
- Working with Ranges

Chapter 3: Working with Data

- Sorting your data
- Filtering
- Aggregating and Subtotals
- Removing Duplications
- Aggregating your data
- Using IFS

	A	B	C
	Number	Formula	Result
1			
2	1	=ASINH(A2)	0.8814
3	10	=ASINH(A3)	2.9982
4	100	=ASINH(A4)	5.2983
5	1000	=ASINH(A5)	7.6009
6	10000	=ASINH(A6)	9.9035
7	100000	=ASINH(A7)	12.2061



	A	B	C	D	E	F	G	H	I	J
1	1	2	3	4						
2	ID	Name	Math	Chemistry		ID	Math			
3	A1001	Emily	49	70		C1004	92			
4	A1002	James	78	58						
5	B1003	Nicol	100	96						
6	C1004	Hedy	92	98						
7	C1005	Mario	61	79						
8	D1006	Akash	85	90						
9										

=VLOOKUP(F3,\$A\$3:\$D\$8,3,FALSE)

Lookup value
search in this range
exact match

Color

Chapter 4: Advanced Concepts

- VLOOKUP
- XLOOKUP
- MATCH/INDEX
- Data Validation

Chapter 5: Pivot Tables

- Insert a Pivot Table
- Pivot Tables for Summaries
- Change Pivot Table Calculation
- Sorting, Top N, Filter
- Two Dimensional Pivot Table

sales data

	Color	Region	Units	Sales
Jan-16	Red	West	1	\$11.00
Jan-16	Blue	South	8	\$96.00
Jan-16	Green	West	2	\$26.00
Jan-16	Blue	North	7	\$84.00
Feb-16	Green	North	8	\$104.00
Feb-16	Red	South	2	\$22.00
Feb-16	Blue	East	5	\$60.00
Mar-16	Green	West	2	\$26.00
Mar-16	Blue	East	8	\$96.00
Mar-16	Blue	North	7	\$84.00
Mar-16	Green	West	2	\$26.00
Apr-16	Blue	South	8	\$96.00

Color	Sum
Blue	
Green	
Red	
Silver	
Grand Total	



Level 2: Power BI For Data Modeling & Reporting

Chapter 1: Getting Started with Power BI

- Downloading the Power BI Desktop
- A walkthrough of the Power BI user interface
- Importing Data into Power BI
- Power Query user interface walk-through
- ETL on Power query - Data transformation.

Chapter 2: Data Modeling and DAX

- Introduction to DAX
- Connecting the Calendar table to the Fact table
- Writing simple aggregation measures with DAX
- Creating automatic measures with Quick measures
- Creating Data Models
- Resolving issues with relationships within the model
- Testing the relationships in the Report view



Chapter 3: Data Visualization and Reporting

- Visualizing a timeline report with line chart
- How to format charts in Power BI
- Adding more than one chart to the report
- Top N report using a Bar Chart
- Use of filters pane and slicers
- Controlling visual interactions on the Canvass
- Optimizing reports for mobile view and publishing reports to the Power BI service
- Right visuals selection - Best practices
- Using a report page as template for future report



```

/***** Script for SelectTopNRows command from S
SELECT TOP (1000) [IDDH]
      , [DATEOFSUPPLY]
      , [PRODUCTID]
      , [QUANTITY]
FROM [Warehouse].[dbo].[DONHANG]

```

100 % Results Messages

	IDDH	DATEOFSUPPLY	PRODUCTID	QUANTITY
1	231283840	2020-04-04	01.01.MQ802	5
2	232138	2020-02-02	01.01.MQ100	2
3	234344	2020-03-03	10209	2
4	234345	2020-03-03	10209	3
5	239277594	2020-09-09	10209	3
6	282381237	2020-03-03	11260-2SP	2
7	32132940	NULL	106	3
8	3423424324	2020-09-02	106	3
9	909090	NULL	11078-10SP	1

Query executed succ... | DESKTOP-PA06S5A (15.0 RTM) | MinhDar

Level 3: SQL For Data Analytics & Reporting

Chapter 1: Introduction to SQL and Basic SQL Queries

- Introduction to relational databases
- Basic SQL Commands

SELECT

DISTINCT

TOP N

- Filtering results with WHERE

The WHERE clause

BOOLEAN Operators

The AND keyword

The OR Keyword

BETWEEN, LIKE, IN and IS

IS and ISNOT

LIKE and other BOOLEAN Operators



Chapter 2: Aggregating and Shaping Results

- Aggregation Functions
SUM, COUNT, MIN, MAX, AVG
- GROUP BY and HAVING
- Sorting your results with ORDER BY

Chapter 3: Matching Different Data Tables with JOINS

- CROSS JOIN
- INNER JOIN
- OUTER JOIN
- LEFT OUTER JOIN
- RIGHT OUTER JOIN
- FULL OUTER JOIN
- SELF JOIN



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