Course 20761-C: Querying Data with Transact-SQL

- 5 Days
- Instructor-led training
- Intermediate
- English

This course is designed to introduce students to Transact-SQL. It is designed in such a way that the first three days can be taught as a course to students requiring the knowledge for other courses in the SQL Server curriculum. Days 4 & 5 teach the remaining skills required to take exam 70-761.

Audience profile

The main purpose of the course is to give students a good understanding of the Transact-SQL language which is used by all SQL Server-related disciplines; namely, Database Administration, Database Development and Business Intelligence. As such, the primary target audience for this course is: Database Administrators, Database Developers and BI professionals.

Job role: Database Administrator
Preparation for exam: 70-761
Features: none

Skills gained:

- Describe key capabilities and components of SQL Server.
- Describe T-SQL, sets, and predicate logic.
- Write a single table SELECT statement.
- Write a multi-table SELECT statement.
- Write SELECT statements with filtering and sorting.
- Describe how SQL Server uses data types.
- Write DML statements.
- Write queries that use built-in functions.
- Write queries that aggregate data.
- Write subqueries.

- Create and implement views and table-valued functions.
- Use set operators to combine query results.
- Write queries that use window ranking, offset, and aggregate functions.
- Transform data by implementing pivot, unpivot, rollup and cube.
- Create and implement stored procedures.
- Add programming constructs such as variables, conditions, and loops to T-SQL code.

Prerequisites

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Working knowledge of relational databases.

Course outline

Module 1: Introduction to Microsoft SQL Server

This module introduces SQL Server, the versions of SQL Server, including cloud versions, and how to connect to SQL Server using SQL Server Management Studio.

Lessons

- The Basic Architecture of SQL Server
- SQL Server Editions and Versions
- Getting Started with SQL Server Management Studio

Lab : Working with SQL Server Tools

- Working with SQL Server Management Studio
- Creating and Organizing T-SQL Scripts
- Using Books Online

After completing this module, you will be able to:

- Describe relational databases and Transact-SQL queries.
- Describe the on-premise and cloud-based editions and versions of SQL Server.
- Describe how to use SQL Server Management Studio (SSMS) to connect to an instance of SQL Server, explore the databases contained in the instance, and work with script files that contain T-SQL queries.

Module 2: Introduction to T-SQL Querying

This module describes the elements of T-SQL and their role in writing queries. Describe the use of sets in SQL Server. Describe the use of predicate logic in SQL Server. Describe the logical order of operations in SELECT statements.

Lessons

- Introducing T-SQL
- Understanding Sets
- Understanding Predicate Logic
- Understanding the Logical Order of Operations in SELECT statements

Lab : Introduction to T-SQL Querying

- Executing Basic SELECT Statements
- Executing Queries that Filter Data using Predicates
- Executing Queries That Sort Data Using ORDER BY

After completing this module, you will be able to:

- Describe the role of T-SQL in writing SELECT statements.
- Describe the elements of the T-SQL language and which elements will be useful in writing queries.
- Describe the concepts of the set theory, one of the mathematical underpinnings of relational databases, and to help you apply it to how you think about querying SQL Server
- Describe predicate logic and examine its application to querying SQL Server.
- Explain the elements of a SELECT statement, delineate the order in which the elements are evaluated, and then apply this understanding to a practical approach to writing queries.

Module 3: Writing SELECT Queries

This module introduces the fundamentals of the SELECT statement, focusing on queries against a single table.

Lessons

- Writing Simple SELECT Statements
- Eliminating Duplicates with DISTINCT
- Using Column and Table Aliases
- Writing Simple CASE Expressions

Lab : Writing Basic SELECT Statements

- Writing Simple SELECT Statements
- Eliminating Duplicates Using DISTINCT
- Using Column and Table Aliases
- Using a Simple CASE Expression

After completing this module, you will be able to:

- Describe the structure and format of the SELECT statement, as well as enhancements that will add functionality and readability to your queries
- Describe how to eliminate duplicates using the DISTINCT clause
- Describe the use of column and table aliases
- Understand and use CASE expressions

Module 4: Querying Multiple Tables

This module describes how to write queries that combine data from multiple sources in Microsoft SQL Server.

Lessons

- Understanding Joins
- Querying with Inner Joins
- Querying with Outer Joins
- Querying with Cross Joins and Self Joins

Lab : Querying Multiple Tables

- Writing Queries that use Inner Joins
- Writing Queries that use Multiple-Table Inner Joins
- Writing Queries that use Self-Joins
- Writing Queries that use Outer Joins
- Writing Queries that use Cross Joins

After completing this module, you will be able to:

- Explain the fundamentals of joins in SQL Server
- Write inner join queries
- Write queries that use outer joins
- Use additional join types

Module 5: Sorting and Filtering Data

This module describes how to implement sorting and filtering.

Lessons

- Sorting Data
- Filtering Data with Predicates
- Filtering Data with TOP and OFFSET-FETCH
- Working with Unknown Values

Lab : Sorting and Filtering Data

- Writing Queries that Filter Data using a WHERE Clause
- Writing Queries that Sort Data Using an ORDER BY Clause
- Writing Queries that Filter Data Using the TOP Option
- Write Queries that filter data using the OFFSET-FETCH clause

After completing this module, you will be able to:

- Explain how to add an ORDER BY clause to your queries to control the order of rows displayed in your query's output
- Explain how to construct WHERE clauses to filter out rows that do not match the predicate.
- Explain how to limit ranges of rows in the SELECT clause using a TOP option.
- Explain how to limit ranges of rows using the OFFSET-FETCH option of an ORDER BY clause.
- Explain how three-valued logic accounts for unknown and missing values, how SQL Server uses NULL to mark missing values, and how to test for NULL in your queries.

Module 6: Working with SQL Server Data Types

This module introduces the data types SQL Server uses to store data.

Lessons

- Introducing SQL Server Data Types
- Working with Character Data
- Working with Date and Time Data

Lab : Working with SQL Server Data Types

- Writing Queries that Return Date and Time Data

- Writing Queries that use Date and Time Functions
- Writing Queries That Return Character Data
- Writing Queries That Return Character Functions

After completing this module, you will be able to:

- Explore many of the data types SQL Server uses to store data and how data types are converted between types
- Explain the SQL Server character-based data types, how character comparisons work, and some common functions you may find useful in your queries
- Describe data types that are used to store temporal data, how to enter dates and times so they will be properly parsed by SQL Server, and how to manipulate dates and times with built-in functions.

Module 7: Using DML to Modify Data

This module describes how to create DML queries, and why you would want to.

Lessons

- Adding Data to Tables
- Modifying and Removing Data
- Generating automatic column values

Lab : Using DML to Modify Data

- Inserting Records with DML
- Updating and Deleting Records Using DML

After completing this module, you will be able to:

- Use INSERT and SELECT INTO statements
- Use UPDATE, MERGE, DELETE, and TRUNCATE.

Module 8: Using Built-In Functions

This module introduces some of the many built in functions in SQL Server.

Lessons

- Writing Queries with Built-In Functions
- Using Conversion Functions

- Using Logical Functions
- Using Functions to Work with NULL

Lab : Using Built-In Functions

- Writing Queries That Use Conversion Functions
- Writing Queries that use Logical Functions
- Writing Queries that Test for Nullability

After completing this module, you will be able to:

- Describe the types of functions provided by SQL Server, and then focus on working with scalar functions
- Explain how to explicitly convert data between types using several SQL Server functions
- Describe how to use logical functions that evaluate an expression and return a scalar result.
- Describe additional functions for working with NULL

Module 9: Grouping and Aggregating Data

This module describes how to use aggregate functions.

Lessons

- Using Aggregate Functions
- Using the GROUP BY Clause
- Filtering Groups with HAVING

Lab : Grouping and Aggregating Data

- Writing Queries That Use the GROUP BY Clause
- Writing Queries that Use Aggregate Functions
- Writing Queries that Use Distinct Aggregate Functions
- Writing Queries that Filter Groups with the HAVING Clause

After completing this module, you will be able to:

- Describe the built-in aggregate function in SQL Server and write queries using it.
- Write queries that separate rows using the GROUP BY clause.
- Write queries that use the HAVING clause to filter groups.

Module 10: Using Subqueries

This module describes several types of subquery and how and when to use them.

Lessons

- Writing Self-Contained Subqueries
- Writing Correlated Subqueries
- Using the EXISTS Predicate with Subqueries

Lab : Using Subqueries

- Writing Queries That Use Self-Contained Subqueries
- Writing Queries That Use Scalar and Multi-Result Subqueries
- Writing Queries That Use Correlated Subqueries and an EXISTS Clause

After completing this module, you will be able to:

- Describe where subqueries may be used in a SELECT statement.
- Write queries that use correlated subqueries in a SELECT statement
- Write queries that use EXISTS predicates in a WHERE clause to test for the existence of qualifying rows
- Use the EXISTS predicate to efficiently check for the existence of rows in a subquery.

Module 11: Using Table Expressions

Previously in this course, you learned about using subqueries as an expression that returned results to an outer calling query. Like subqueries, table expressions are query expressions, but table expressions extend this idea by allowing you to name them and to work with their results as you would work with data in any valid relational table. Microsoft SQL Server supports four types of table expressions: derived tables, common table expression (CTEs), views, and inline table-valued functions (TVFs). In this module, you will learn to work with these forms of table expressions and learn how to use them to help create a modular approach to writing queries.

Lessons

- Using Views
- Using Inline Table-Valued Functions
- Using Derived Tables
- Using Common Table Expressions

Lab : Using Table Expressions

- Writing Queries That Use Views
- Writing Queries That Use Derived Tables
- Writing Queries That Use Common Table Expressions (CTEs)
- Writing Queries That Use Inline Table-Valued Expressions (TVFs)

After completing this module, you will be able to:

- Write queries that return results from views.
- Use the CREATE FUNCTION statement to create simple inline TVFs.
- Write queries that create and retrieve results from derived tables.
- Write queries that create CTEs and return results from the table expression.

Module 12: Using Set Operators

This module introduces how to use the set operators UNION, INTERSECT, and EXCEPT to compare rows between two input sets.

Lessons

- Writing Queries with the UNION operator
- Using EXCEPT and INTERSECT
- Using APPLY

Lab : Using Set Operators

- Writing Queries That Use UNION Set Operators and UNION ALL
- Writing Queries That Use CROSS APPLY and OUTER APPLY Operators
- Writing Queries That Use the EXCEPT and INTERSECT Operators

After completing this module, students will be able to:

- Write queries that use UNION to combine input sets.
- Write queries that use UNION ALL to combine input sets
- Write queries that use the EXCEPT operator to return only rows in one set but not another.
- Write queries that use the INTERSECT operator to return only rows that are present in both sets
- Write queries using the CROSS APPLY operator.
- Write queries using the OUTER APPLY operator

Module 13: Using Windows Ranking, Offset, and Aggregate Functions

This module describes the benefits to using window functions. Restrict window functions to rows defined in an OVER clause, including partitions and frames. Write queries that use window functions to operate on a window of rows and return ranking, aggregation, and offset comparison results.

Lessons

- Creating Windows with OVER
- Exploring Window Functions

Lab : Using Windows Ranking, Offset, and Aggregate Functions

- Writing Queries that use Ranking Functions
- Writing Queries that use Offset Functions
- Writing Queries that use Window Aggregate Functions

After completing this module, students will be able to:

- Describe the T-SQL components used to define windows, and the relationships between them.
- Write queries that use the OVER clause, with partitioning, ordering, and framing to define windows
- Write queries that use window aggregate functions.
- Write queries that use window ranking functions.
- Write queries that use window offset functions

Module 14: Pivoting and Grouping Sets

This module describes write queries that pivot and unpivot result sets. Write queries that specify multiple groupings with grouping sets

Lessons

- Writing Queries with PIVOT and UNPIVOT
- Working with Grouping Sets

Lab : Pivoting and Grouping Sets

- Writing Queries that use the PIVOT Operator

- Writing Queries that use the UNPIVOT Operator
- Writing Queries that use the GROUPING SETS CUBE and ROLLUP Subclauses

After completing this module, students will be able to:

- Describe how pivoting data can be used in T-SQL queries.
- Write queries that pivot data from rows to columns using the PIVOT operator.
- Write queries that unpivot data from columns back to rows using the UNPIVOT operator.
- Write queries using the GROUPING SETS subclause.
- Write queries that use ROLLUP AND CUBE.
- Write queries that use the GROUPING_ID function.

Module 15: Executing Stored Procedures

This module describes how to return results by executing stored procedures. Pass parameters to procedures. Create simple stored procedures that encapsulate a SELECT statement. Construct and execute dynamic SQL with EXEC and sp_executesql.

Lessons

- Querying Data with Stored Procedures
- Passing Parameters to Stored procedures
- Creating Simple Stored Procedures
- Working with Dynamic SQL

Lab : Executing Stored Procedures

- Using the EXECUTE statement to Invoke Stored Procedures
- Passing Parameters to Stored procedures
- Executing System Stored Procedures

After completing this module, students will be able to:

- Describe stored procedures and their use.
- Write T-SQL statements that execute stored procedures to return data.
- Write EXECUTE statements that pass input parameters to stored procedures.
- Write T-SQL batches that prepare output parameters and execute stored procedures.
- Use the CREATE PROCEDURE statement to write a stored procedure.
- Create a stored procedure that accepts input parameters.
- Describe how T-SQL can be dynamically constructed.
- Write queries that use dynamic SQL.

Module 16: Programming with T-SQL

This module describes how to enhance your T-SQL code with programming elements.

Lessons

- T-SQL Programming Elements
- Controlling Program Flow

Lab : Programming with T-SQL

- Declaring Variables and Delimiting Batches
- Using Control-Of-Flow Elements
- Using Variables in a Dynamic SQL Statement
- Using Synonyms

After completing this module, students will be able to:

- Describe how Microsoft SQL Server treats collections of statements as batches.
- Create and submit batches of T-SQL code for execution by SQL Server.
- Describe how SQL Server stores temporary objects as variables.
- Write code that declares and assigns variables.
- Create and invoke synonyms
- Describe the control-of-flow elements in T-SQL.
- Write T-SQL code using IF...ELSE blocks.
- Write T-SQL code that uses WHILE.

Module 17: Implementing Error Handling

This module introduces error handling for T-SQL.

Lessons

- Implementing T-SQL error handling
- Implementing structured exception handling

Lab : Implementing Error Handling

- Redirecting errors with TRY/CATCH
- Using THROW to pass an error message back to a client

After completing this module, students will be able to:

- Implement T-SQL error handling.
- Implement structured exception handling.

Module 18: Implementing Transactions

This module describes how to implement transactions.

Lessons

- Transactions and the database engines
- Controlling transactions

Lab : Implementing Transactions

- Controlling transactions with BEGIN, COMMIT, and ROLLBACK
- Adding error handling to a CATCH block

After completing this module, students will be able to:

- Describe transactions and the differences between batches and transactions.
- Describe batches and how they are handled by SQL Server.
- Create and manage transactions with transaction control language (TCL) statements.
- Use SET XACT_ABORT to define SQL Servers handling of transactions outside TRY/CATCH blocks.

Prerequisites

In addition to their professional experience, students who attend this training should already have the following technical knowledge:

- Basic knowledge of the Microsoft Windows operating system and its core functionality.
- Basic knowledge of data warehouse schema topology (including star and snowflake schemas).
- Some exposure to basic programming concepts (such as looping and branching).
- An awareness of key business priorities such as revenue, profitability, and financial accounting is desirable.
- Familiarity with Microsoft Office applications – particularly Excel.

Course outline

Module 1: Introduction to Self-Service BI Solutions

Business intelligence (BI) is a term that has become increasingly common over recent years. Along with big data, data mining, predictive analytics, data science, and data stewards, BI is now very much part of business vocabulary. Much of the impetus behind this is the need for organizations to cope with ever-increasing datasets. It is now normal to have databases that contain millions of rows, requiring gigabytes, terabytes, or even petabytes, of storage space. Data is no longer confined to an on-premises server room—it is hosted in the cloud, feeds are taken from third-party providers, public datasets are freely available, and social media interactions generate ever-expanding datasets.

Reporting and analysis is certainly not a new concept to business, but the difference between how data analysis is done today, compared with five or 10 years ago, is immense. Nowadays, organizations need BI to see not only what was done in the past, but also more of what is to come. There is now an overwhelming amount of data to gather and compose into reports. There is also an increasing need for data to offer up-to-the-minute numbers, so business can react faster to changing trends in markets and industries. Those businesses that can react fast and predict near-term trends to provide products and services where there is consumer demand have the best chance of survival in our modern and highly competitive world. With the rise of big data, there is an increasing need for data analysts who can take this data, and find the critical points within a plethora of information.

Lessons

- Introduction to Business Intelligence
- Introduction to Data Analysis
- Introduction to Data Visualization
- Overview of Self-Service BI
- Considerations for Self-Service BI
- Microsoft Tools for Self-Service BI

Lab : Exploring an Enterprise BI Solution

- Viewing Reports
- Creating a Power BI Report
- Creating a Power BI Dashboard

After completing this module, students will be able to:

- Describe the trends in BI.
- Describe the process of data analysis in Power BI.
- Use the key visualizations in Power BI.
- Describe the rationale for self-service BI.
- Describe considerations for self-service BI.
- Understand how you can use Microsoft products to implement a BI solution.

Module 2: Introducing Power BI

Self-Service Business Intelligence (BI) has rapidly grown in popularity because of its ability to empower users to generate reports, process data, perform analysis, and more—all without having to depend on a report developer. The Self-Service BI trend is driven by Microsoft's commitment to improving Excel and Power BI, both products having seen many enhancements over recent years. However, despite Microsoft enabling deeper data analysis with the four power tools added to Excel—Power Pivot, Power View, Power Query, and Power Map—they are not fully integrated into the Excel interface. Instead, they exist in separate windows. Add to this the complexity of publishing to SharePoint to share reports with colleagues, and it all becomes a time-consuming effort.

Using Power BI eliminates complications and barriers with a simple integrated user interface, and has the ability to publish rapidly to either a cloud-based or an on-premise portal to share reports easily. This module introduces Power BI, and explores the features that enable the rapid creation and publication of sophisticated data visualizations.

Lessons

- Power BI
- The Power BI Service

Lab : Creating a Power BI Dashboard

- Connecting to Power BI Data
- Create a Power BI Dashboard

After completing this module, students will be able to:

- Develop reports using the Power BI Desktop app.
- Use report items to create dashboards on the Power BI portal.
- Understand the components of the Power BI service, including licensing and tenant management.

Module 3: Power BI Data

Power BI offers a straightforward approach to report creation, and the ability to create and share dashboards without dependency on a report developer, or the need for Microsoft SharePoint. Microsoft Excel has long been the tool of choice for data analysts who work in a self-service style. However, Excel does not offer a quick and easy way to share reports without the use of either SharePoint, or the creation of multiple copies of spreadsheets that quickly become out of date, or exist outside source control.

In recent years, power tools have been added to Excel: Power View, Power Query (known as Get & Transform in Excel 2016), and Power Pivot. Power BI brings much of this power into an integrated environment in the form of Power BI Desktop. Previously, Excel users have been inconvenienced by needing to transition between the different power tools, but Power BI Desktop brings the tools together. This means that Power BI is fast becoming an obvious choice for the analysis and sharing of data. However, analysts are likely to continue working with Excel for the foreseeable future. Power BI easily cooperates with Excel, and many other data sources. It's this ability to create reports rapidly, by using data from a combination of sources, that really puts the power into Power BI.

Lessons

- Using Excel as a Data Source for Power BI
- The Power BI Data Model
- Using Databases as a Data Source for Power BI

- The Power BI Service

Lab : Importing Data into Power BI

- Importing Excel files into Power BI
- Viewing Reports from Excel Files

After completing this module, students will be able to:

- Describe the data model and know how to optimize your data within the model.
- Connect to Excel files and import data.
- Use on-premises & cloud SQL Server databases as data sources, with the R script data connector.
- Take advantage of the features of the Power BI service.
- Use Q&A to ask questions in natural query language and create apps.

Module 4: Shaping and Combining Data

Power BI Desktop offers a self-service solution for creating visual, interactive reports and dashboards. Users can connect to a wide variety of data sources, combining data from on-premises databases, Software as a Solution (SaaS) providers, cloud-based services, and local files such as Microsoft Excel, into one report. The beauty of Power BI reports and dashboards is the ability to rapidly build reports to present this data so it is instantly readable—with clusters, outliers, and patterns in data visually brought to light. To achieve this, each report must have a dataset comprising tables and columns that are ready to add straight into visualizations. Data must be formatted for relevant currencies, numbers should have correct decimal places, additional columns and measures might be required, and data may have to be combined from multiple tables. With Power BI Desktop, you can do all of this, with powerful, built-in tools for shaping your data. This module introduces the tools that are available for preparing your data, and transforming it into a form ready for reporting.

Lessons

- Power BI Desktop Queries
- Shaping Data
- Combining Data

Lab : Shaping and Combining Data

- Shape Power BI Data

- Combine Power BI Data

After completing this module, students will be able to:

- Perform a range of query editing tasks in Power BI.
- Shape data, using formatting and transformations.
- Combine data together from tables in your dataset.

Module 5: Modeling Data

Microsoft Power BI is making its mark in the self-service BI world—because it can quickly create visually stunning, interactive reports, and dashboards. Power BI provides a straightforward way to combine data from a wide range of sources into a single dataset, and then work with that data to create cohesive reports. This module goes behind the scenes of the visualizations, and explores the techniques and features on offer to shape and enhance your data. With automatic relationship creation, a vast library of DAX functions, and the ability to add calculated columns, tables, and measures quickly, you will see how Power BI creates attractive reports, while helping you find hidden insights into data.

Lessons

- Relationships
- DAX Queries
- Calculations and Measures

Lab : Modeling Data

- Create Relationships
- Calculations

After completing this module, students will be able to:

- Describe relationships between data tables.
- Understand the DAX syntax and use DAX functions to enhance your dataset.
- Create calculated columns, calculated tables, and measures.

Module 6: Interactive Data Visualizations

Self-service business intelligence (BI) is becoming increasingly popular in organizations. This approach enables business users to access corporate data, and create and share

reports and key performance indicators (KPIs) without dependency on a dedicated report developer. Business users can use the Microsoft Power BI suite of tools to connect to a wide variety of data sources. These include the main industry-standard databases, Microsoft cloud-based services—Microsoft Azure SQL Database, Azure Data Lake, and Azure Machine Learning—alongside Microsoft Excel and other files, and software as a service (SaaS) providers such as Microsoft Bing, Facebook, and MailChimp. The combination of flexibility and the ability to create visually stunning, interactive dashboards quickly makes Power BI an obvious choice for any organization that needs to provide its users with a self-service BI solution.

Lessons

- Creating Power BI Reports
- Managing a Power BI Solution

Lab : Creating a Power BI Report

- Connecting to Power BI Data
- Building Power BI Reports
- Creating a Power BI Dashboard

After completing this module, students will be able to:

- Use Power BI Desktop to create interactive data visualizations.
- Manage a Power BI solution.

Module 7: Direct Connectivity

Power BI service supports live direct connections to Azure SQL Database, Azure SQL Data Warehouse, big data sources such as Spark on Azure HDInsight, and SQL Server Analysis Services. DirectQuery means that whenever you slice data or add another field to a visualization, a new query is issued directly to the data source. Power BI works with SQL Server Analysis Services models that are running in multidimensional mode, so that you can use OLAP cubes and models in reports and dashboards. It doesn’t matter if you are using the Power BI service in the cloud, and an on-premises SQL Server Analysis Services implementation; the on-premises data gateway enables live connections between the cloud and on-premises data servers.

Lessons

- Cloud Data

- Connecting to Analysis Services

Lab : Direct Connectivity

- Direct Connections to Power BI

After completing this module, students will be able to:

- Use Power BI direct connectivity to access data in Azure SQL Database and Azure SQL Data Warehouse
- Use Power BI direct connectivity to access data in big data sources, such as Hadoop.
- Use Power BI with SQL Server Analysis Services data.
- Use Analysis Services models running in multidimensional mode.

Module 8: Development with Power BI

The Power BI API is a REST-based API that developers use to access programmatically datasets, tables, and rows in Power BI. Using this API, you push data from an application into Power BI and integrate Power BI visualizations into an application. You can also add custom visuals to your applications and to Power BI dashboards and reports.

In this module, you will learn how to use the Power BI API to embed content in your applications and how to use custom visuals in your reports.

Lessons

- The Power BI API
- Custom Visuals

Lab : Using Marketplace Visualizations

- Using a Custom Visualization

After completing this module, students will be able to:

- Describe the Power BI Developer API.
- List the steps for creating custom visualizations.
- Import custom visuals into Power BI for use in Power BI reports.

Module 9: Power BI Mobile

Power BI mobile apps enable you to access and use Power BI information on a mobile device, including iOS (iPad, iPhone, iPod Touch, Apple Watch), Android phone or tablet, and Windows 10 devices. This means that, potentially, Power BI reports and Power BI dashboards created in Power BI Desktop and the Power BI service can be used anywhere and at any time.

Power BI reports and dashboards are designed to work on a mobile device without modification. However, you can also create specific optimized reports and report layouts for display on mobile devices. The Power BI mobile apps support the sharing and annotation of dashboards, and you can use Power BI data on mobile devices even when you are not connected to a network. Power BI alerts and notifications also work across the Power BI service, including on mobile devices.

Lessons

- Power BI Mobile Apps
- Using the Power BI Mobile App

After completing this module, students will be able to:

- Create dashboards and reports for mobile devices.
- Use the Power BI Mobile app.