

VERSION

21

PROFESSIONAL

ELYSIUM
ACADEMY
DATABASE

MASTER
MYSQL &
MSSQL

**ELYSIUM
ACADEMY
DATABASE**

MASTER

MYSQL &

MSSQL

ELYSIUM
ACADEMY

SR. CODE

EAPL/PROF/PRTC26

COURSE CODE

EAPSQ

SUB CATEGORY

DATABASE MANAGEMENT



TOTAL DURATION

90
HOURS



THEORY TAKEN

25
HOURS



PRACTICAL TAKEN

65
HOURS

COURSE DESCRIPTION



The MSSQL course provides in-depth training in Microsoft SQL Server, covering database design, T-SQL programming, stored procedures, and database administration tasks.

COURSE GOALS



By completion, you will proficiently design and administer MSSQL databases, write optimized T-SQL queries, and implement robust database solutions. They will develop the skills necessary to support mission-critical applications and ensure data integrity and security within the SQL Server environment.

FUTURE SCOPE



Graduates will be well-prepared for roles as database administrators, SQL developers, or business intelligence analysts. With SQL Server's widespread adoption in enterprise environments, opportunities for MSSQL professionals are abundant, ensuring a lucrative and stable career path in the data management field.

01

CHAPTER

GETTING STARTED MSSQL



4.5
HRS



08
HRS

O1. MSSQL

- What is MSSQL?
- What is difference between MSSQL and MYSQL?
- Purpose of MSSQL
- Versions of SQL
- Advantages and drawbacks
- Installation Setup

O2. Database and tables

- What is database?
- What is tables?
- Create, Alter and drop database
- Create, Alter and drop table
- Backup and restore a database
- RDBMS
- ER Model
- Hands on create database and tables

O3. Common Terminologies in SQL

- Data types
- Constraints
- Foreign key constraints
- Unique and check constraint
- Hands on data types and constraints
- Quiz

O4. Normalization

- a. What is normalization?
- b. First Normal Form
- c. Second Normal Form
- d. Third Normal Form Practically Normalizing Tables
- e. Hands on Normalization

02

CHAPTER

MSSQL COMMANDS

O1. Data Definition Language

- a. What is DDL?
- b. Purpose of DDL
- c. CREATE Table
- d. ALTER Table
- e. TRUNCATE Table
- f. RENAME
- g. DROP
- h. Hands on DDL

O2. Data Manipulation Language

- a. What is DML?
- b. SELECT
- c. UPDATE
- d. DELETE
- e. INSERT
- f. Hands on DML



3.5
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6.5
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O3. Data Control Language

- a. What is DCL?
- b. Purpose of DCL
- c. REVOKE
- d. GRANT
- e. Hands on DCL

O4. MSSQL Clauses

- a. WHERE
- b. DISTINCT
- c. ORDER BY
- d. GROUP BY
- e. HAVING
- f. FROM
- g. Hands on MSSQL clauses

03

CHAPTER

MSSQL COMMANDS

O1. Conditions

- a. AND
- b. OR
- c. AND OR
- d. Boolean
- e. LIKE
- f. IN
- g. ANY
- h. Exists
- i. NOT



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8.5
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- j. Not Equal
- k. IS NULL
- l. IS NOT NULL
- m. BETWEEN
- n. Hands on conditions

O2. Key

- a. Primary key
- b. Foreign key
- c. Unique key
- d. Hands on key constraints

O3. JOINS in MSSQL

- a. What is joins?
- b. Advantages of JOINS.
- c. Types of Joins
- d. INNER JOIN
- f. LEFT JOIN
- h. RIGHT JOIN
- j. CROSS JOIN
- k. Hands on JOIN

O4. Indexes and views in MSSQL

- a. What is index?
- b. CREATE index
- c. DROP index
- d. SHOW index
- e. UNIQUE index
- f. Hands on index

04

CHAPTER

FUNCTIONS, TRANSACTIONS AND AGGRAGATE



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07
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O1.Functions in MSSQL

- What is MSSQL?
- What is difference between MSSQL and MYSQL?
- Purpose of MSSQL
- Versions of SQL
- Advantages and drawbacks
- Installation Setup

O2. Transactions in MSSQL

- What is transactions?
- COMMIT
- ROLLBACK
- Hands on transactions

O3. Aggregate functions and Triggers

- What is aggregate functions?
- List the aggregate functions
- Hands on aggregate functions
- What is Triggers?
- Constraints vs Triggers
- Creating, Altering, Dropping triggers
- for/after/instead of triggers
- Using Rollback Tran
- Hands on triggers

O4. Working with cursors

- a. What is cursors?
- b. Creating Cursors
- c. Cursors vs. Select
- d. Types of cursors
- e. Locks on cursors
- f. Advantages of cursors
- g. Hands on cursors
- h. Quiz

O5. Backup and restore

- a. Generating SQL Script
- b. Executing SQL Script
- c. Generating Change Script
- d. Taking database Backup
- e. Restoring database using backup
- f. Attaching and Detaching of database
- g. Hands on backup and restore

05

CHAPTER

GETTING STARTED

O1. Beginning Database

- a. What is a Database?
- b. What about database engine?
- c. Types of data and storage
- d. RDBMS
- e. FIELD Concepts

O2. Beginning of MYSQL

- a. What is MYSQL?
- b. SQL vs. MYSQL
- c. Data types
- d. Indexes
- e. Environmental setup:
Download and install MYSQL Server

O3. Data Types

- a. String Data Types
- b. Numeric Data Types
- c. Date and time Data types

O4. MYSQL Functions

- a. String functions
- b. Numeric functions
- c. Date functions
- d. Advanced functions



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O5. Creating Database and Tables

- a. Connect and create database
- b. Showing Database
- c. Creating Database
- d. Rename Database
- e. Introducing Tables
- f. Creating Tables
- g. Dropping Tables
- h. Hands on

06

CHAPTER

SQL COMMANDS

O1. Data Definition Language

- a. What is DDL?
- b. Purpose of DDL
- c. Create database
- d. Drop database
- e. Alter database
- f. Truncate database
- g. Comment
- h. Rename

O2. Data Query Language

- a. What is DQL?
- b. Purpose of DQL
- c. Select



02
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6.5
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O3. Data Manipulation Language

- a. What is DML?
- b. Purpose of DML
- c. Insert data
- d. Update data
- e. Delete Data
- f. Lock data

O4. Data Control Language

- a. What is DCL?
- b. Purpose of DCL
- c. Grant data
- d. Revoke data

O5. Transaction Control Language

- a. What is TCL?
- b. Purpose of TCL
- c. COMMIT
- d. ROLLBACK
- e. SAVEPOINT

07

CHAPTER

CONSTRAINTS

O1. Inserting data

- a.INSERT-Basics
- b.Hands on INSERT data
- c. SELECT
- d.Hands on SELECT query
- e. Multi inserts
- f. Hands on Multi inserts
- g.NOT NULL
- h.Hands on NOT NULL
- i. DEFAULT Values
- j. Hands on DEFAULT Values
- k. AUTO INCREMENT
- l. Hands on AUTO INCREMENT

O2. Basic Operators

- a.ORDER BY
- b.ALIASES
- c. UNIONS
- d.CONSTRAINTS
- e. VIEWS

O3. Primary Key

- a.What is primary key?
- b.Creating a primary key
- c.Dropping a primary key



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O4. Foreign key

- a. What is foreign key?
- b. Creating a foreign key
- c. Dropping a foreign key

O5. Composite key

- a. What is composite key?
- b. Creating a composite key
- c. Dropping a composite key

08

CHAPTER

JOINS AND AGGREGATE

O1. CRUD

- a. What is CRUD?
- b. Create Table
- c. Insert Values
- d. Hands on insert values
- e. Read Table
- f. Read Query
- g. Hands on read query
- h. Update Table
- i. Hands on update table
- j. Delete Tables
- k. Hand on delete tables



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7.5
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O2. JOINS

- a. What is joins?
- b. Advantages of JOINS.
- c. Types of Joins
- d. INNER JOIN
- e. Hands on INNER JOIN
- f. LEFT JOIN
- g. Hands on LEFT JOIN
- h. RIGHT JOIN
- i. Hands on RIGHT JOIN
- j. CROSS JOIN
- k. Hands on CROSS JOIN

O3. Aggregate Functions

- a. What are aggregate functions?
- b. Purpose of Aggregate functions
- c. count ()
- d. Hands on count ()
- e. sum ()
- f. Hands on sum ()
- g. average ()
- h. Hands on average ()
- i. min ()
- j. Hands on min ()
- k. max ()
- l. Hands on max ()
- m. group_concat ()
- n. Hands on group_concat ()

- o. first ()
- p. Hands on first ()
- q. last ()
- r. Hands on last ()

09

CHAPTER

OPERATORS

O1. GROUP BY

- a. What is GROUP BY?
- b. Purpose of GROUP BY
- c. GROUP BY with aggregate functions
- d. GROUP BY with JOIN
- e. HAVING Clause
- f. EXISTS
- g. Hands on EXISTS

O2. Arithmetic Operators

- a. Add
- b. Subtract
- c. Multiply
- d. Divide
- e. Modulo
- f. Hands on

O3. Bitwise Operators

- a. Bitwise AND
- b. Bitwise OR
- c. Bitwise exclusive OR
- d. Hands on



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O4. Comparison Operators

- a. Equal to
- b. Greater than
- c. Less than
- d. Greater than or equal to
- e. Less than or equal to
- f. Not equal to

O5. Logical Operators

- a. ALL
- b. AND
- c. ANY
- d. BETWEEN
- e. EXISTS
- f. IN
- g. LIKE
- h. NOT
- i. OR
- j. SOME

10

CHAPTER

TRIGGERS, VIEWS, INDEXEST

O1. Triggers

- a. What are Triggers?
- b. Purpose of Triggers
- c. Advantages and drawbacks
- d. Types of MYSQL Triggers
- e. Before update triggers
- f. After update triggers
- g. Before insert triggers
- h. After insert triggers
- i. Before delete triggers
- j. After delete triggers
- k. Hands on

O2. Views

- a. What are views in MYSQL?
- b. Purpose of views
- c. Advantages and drawbacks
- d. Create view
- e. Update view
- f. Replace view
- g. Dropping view

O3. Tables

- a. What is tables in MYSQL?
- b. Create Tables
- c. Alter tables



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05
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- d. Show tables
- e. Rename Table
- f. Truncate tables
- g. Drop tables
- h. Temporary tables
- i. Copy tables
- j. Repair tables
- k. Hands on tables

O4. Queries

- a. What is queries?
- b. Constraints
- c. INSERT Record
- d. UPDATE Record
- e. DELETE Record
- f. SELECT Record
- g. Hands on queries

O5. Indexes

- a. Create Index
- b. Drop Index
- c. Unique Index
- d. Show Index
- e. Clustered Index
- f. Hands on Indexes

O6. Common Functions

- a. Date/time functions
- b. Math functions
- c. String functions
- d. Hands on functions

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