**SQL Course**

**Introduction to SQL**

(What is SQL? Purpose of SQL

Data Definition Language (DDL)

Data Manipulation Language (DML)

**Introduction**

(What is a Database?, Database Objects, Database Tables, Table Records, Types of Database Management Systems, Relational Database Management Systems, and SQL/Relational Databases vs. No SQL Databases)

SQL Server Management Studio

Create a new Database

Queries

DBMS 1 to many, many to many, 1 to 1 relationships

**SQL Syntax**

(Focus on SQL Syntax, SQL keywords, SQL is not case sensitive, SQL Comments, SQL Commands, and writing SQL Statements.)

CREATE TABLE

Database Modelling

Create Tables using the Designer Tools

SQL Constraints

PRIMARY KEY

FOREIGN KEY

NOT NULL / Required Columns

UNIQUE

CHECK

DEFAULT

AUTO INCREMENT or IDENTITY

ALTER TABLE

INSERT INTO

UPDATE

DELETE

SELECT

The ORDER BY Keyword

SELECT DISTINCT

The WHERE Clause

Operators

LIKE Operator

IN Operator

BETWEEN Operators

Wildcards

AND & OR Operators

SELECT TOP Clause

Alias

**SQL Data Types**

(SQL Numeric data types, Date and Time data types, Character and String data types, Unicode character string data types, Binary data types, and miscellaneous data types.)

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**SQL Operators**

(SQL Arithmetic Operators, Comparison Operators, Logical Operators, and Bitwise Operators)

**SQL Expressions**

(SQL Boolean Expression, SQL Numeric Expression, and SQL Date Expression)

**SQL Comments**

(SQL Comments, Comments are used to explain sections of SQL statements, or to prevent the execution of SQL statements. Single-Line Comments, and Multi-line Comments)

Single-line comment

Multiple-line comment

Variables

Built-in Global Variables

@@IDENTITY

Flow Control

IF – ELSE

WHILE

CASE

**SQL – Data Definition Language Commands and Operations.**

(SQL Data Definition Language Commands, Create, Alter, Drop, Truncate, and Rename.

Data Definition Language  Operations, Create a Database, Use Database, Rename a Database, Drop Database, Create a Table, Rename Table, Add a Column to exiting Table, Add multiple columns to existing Table, Modify an existing column, Rename a Column, Drop a Column, Truncate a Table, and Drop a Table.)

**SQL – Data Manipulation Language Commands and Operations**

(Data Manipulation Language Commands, SELECT, INSERT, UPDATE, and DELETE.

Data Manipulation Language Operations, Retrieving data from a table, inserting data into a table, updating existing data into a table, and deleting all records from a table.)

**SQL Functions**

Built-in Functions

String Functions

Date and Time Functions

Mathematics and Statistics Functions

AVG ()

COUNT ()

The GROUP BY Statement

The HAVING Clause

User-defined Functions.

**SQL Joins**

Dropping Constraints

Integrity Constraints

SQL ─ Using Joins

SQL – INNER JOIN

SQL ─ LEFT JOIN

SQL – RIGHT JOIN

SQL ─ FULL JOIN

SQL ─ SELF JOIN

SQL ─ CARTESIAN or CROSS JOIN

SQL ─ UNIONS CLAUSE

The UNION ALL Clause

SQL ─ INTERSECT Clause

SQL ─ EXCEPT Clause

SQL ─ NULL Values

SQL ─ Alias Syntax

Temp Tables

**Sub Queries**

**Ranking functions**

**Derived tables**

**Common table Expression**

**Windows functions**

**Store procedures**

**Functions**

**Indexes**

**Task**

**Interview Questions**