**SQL SERVER**

1. Introduction to DBMS / SQL-Server
   1. DBMS Vs RDBMS
   2. SQL standards and its flavour as MS-SQL
   3. T-SQL Base concepts
      1. Set theory
      2. Predicate Logic
   4. MS-SQL versions / Editions
2. DDL Statements
   1. Table creation
      1. CREATE
      2. SELECT INTO
   2. Alter / Update Table
   3. Drop Table

1. Data types to maintain unique records
   1. Identity
   2. UniqueIdentifier (newid())
   3. Timestamp or row version (will get updated for all insert/update)
2. Constraints / Keys (to maintain data integrity / Data validations)
   1. Primary key
   2. Foreign key
      1. On Delete Cascade
      2. On Update Cascade
   3. Unique
   4. Check
   5. Default
3. Select Query
   1. From Clause
   2. Select Clause
      1. Astric (\*)
      2. Distinct
      3. Column Expressions
   3. Alias Table / Columns
   4. Where
      1. And
      2. OR
      3. Between
      4. Like (for text filter)
         1. % - multi character
         2. \_ Single character
         3. [ABC] single character from list
         4. [a-z] range
         5. [^0-9] not from a range
      5. = / != / <> / > /< />= /<=
      6. IS NULL / IS NOT NULL
      7. ISNULL / COALESCE
      8. IN / NOT IN / Exists / Not Exists
   5. Group By
   6. Order By
   7. Having
4. Order of execution of select query
5. Windows Functions (partition by, Order by)
   1. Aggregate Functions
      1. Count
      2. Sum
      3. Min
      4. Max
      5. Avg
   2. Ranking Functions
      1. Row\_number()
      2. Rank()
      3. Dense\_Rank()
      4. Ntile(100)
   3. Windows offset Functions
      1. Lag(val)
      2. Lead(val)
      3. First\_value(val)
      4. Last\_value(val)
6. Top / OFFSET-FETCH
   1. Top
   2. Percent
   3. With TIES
   4. OFFSET (Order by Must)
      1. FETCH NEXT
      2. FETCH FIRST
7. Multitable Queries / Joins
   1. Cross Join
   2. Inner Join
   3. Left Outer Join
   4. Right Outer Join
   5. Full Outer Join
   6. Self Join
   7. Cross Apply
8. Type casting
   1. Cast
   2. Convert
   3. Try\_cast
   4. Try\_convert
9. Date Time Functions
   1. **GETDATE()**
   2. **DATEPART()**
   3. **DATEADD()**
   4. **DATEDIFF()**
10. **Inner / SUB Queries**
    1. **Self contained subQueries**
       1. **IN**
       2. **NOT IN**
       3. **Where**
    2. **Correlated Sub Queries**
       1. **WHERE Exists**
11. **Common Table Expression CTE’s**
    1. **Derived Tables**
    2. **Views**
    3. **Common table expressions**
    4. **In-line table valued functions**
12. **SET Operations**
    1. **Union**
    2. **Union ALL**
    3. **Intersect**
    4. **Except**
13. **Inserted / Deleted**
14. **Triggers Insert / update / Delete**
    1. **For/After**
    2. **InsteadOF**
15. **Programmability**
    1. **Variables**
       1. **Table variables**
    2. **Print**
    3. **Conditional statements**
       1. **IF**
       2. **CASE**
    4. **Loops**
       1. **While**
       2. **Cursor**
16. **Procedures / Functions**
17. **Information\_Schema**
18. **Pivot / UnPivot**
19. **Dynamic SQL**
20. **Performance tuning**