Day 53 30/04/2025

Numeric Data type

INT (whole number)
BIGINT (very large whole number)
Small INT (small range)(-32,768 to 32768)
TINYINT (very small- (0 to 255)
NUMERIC (7,2) / DECIMAL(7,2)

eg:- (12345.67)

FlOAT -> Folating point number

eg:- (3.141592)

REAL -> Lower -precision FLOAT

MONEY -currency (accurate to 4 decimal places)

eg: (1999.99)

SMAll MONEY

String Data type

number
CHAR(n) -> Fixed length string

eg: 'ABC — '

VARCHAR (n) -> variable - length ASSII string.

eg: 'Hello'

TEXT -> Depreciated large text (use VARCHAR (MAX))
maximum length

NCHAR (n)
NVARCHAR(n)
NTEXT
} -> unicode string.

eg:- N'தமிழ்''
N'[illegible]'

NTEXT ↓ same NVARCHAR(MAX)

eg:-

Create Table S1(Name NVARCHR(10))

INSERT INTO S1 value (N'[illegible]')

Data and Time Data type

DATE → Stores only data

eg:- '2025-04-22'

TIME → Stores only Time

eg:- '14:30:00'

DATE TIME → Date and time (legacy type)

eg:- '2025-04-22 14:30'

DATE TIME 2 → High precision datatime.

eg:- '2025-04-22 14:30:00.1234567'

SMALLDATE TIME → Rounded data time

eg:- '2025-04-22 14:00'

Binary Data type

BINARY (n) -> Fixed - length binary.

eg:- Flags, bitmaps.

VARBINARY (n) - variable - length binar

eg: Files, images.

VarBinary(max) - large binary storag

eg PDFs, videos, pictures.

Special Data type

BIT -> Boolean (0 or 1)

eg:- 1 = True & 0 = False.

UNIQUEIDENIFIER -> unique

eg:- 6F21AB - C1AZY - BA20-012 AC

XML - To store XML Formatte

GEOGRAPHY / GEOMETRY

↳ For spatial data like map.

eg:- coordinates / locations

SQL-VARIANT - Can store different data types in 1 coloumn

HIERARCHYID - used to represent Hierachial Data.

SQL Query types

DDL - Data Definition Language
↳ used to define and modify the structure of database

Commands :-
CREATE -> create new tables, Database, indexs, etc

ALTER - modify existing database objects.

DROP -> delete objects like tables or database.

TRUNCATE -> Remove all Rows from a table quickly

REName -> Rename database object (varies by SQL dialect).

example:-

ALTER TABLE S1 Add M3 NUMERIC (10)

↓

TO add a column

ALTER Table S1 DROP COLUMN TOTOL

↓

TO remove a column

SP_RENAME 'S1', 'STD'

↓

Store procedure

-> TO Rename the table

ALTER TABLE STD ALTER COLUMN SNO NVARCHAR(20)

To change the data type ← numeric

Int can conver to String or char

But Text can not converd to int.

DROP TABLE STD;

↓

To remove the table

DROP Database student;

↓

To remove the database;

DML - Data manipulation language

↳ used to manipulate data inside existing tables.

Commands:-

[illegible]

SELECT → Retrieve data.

INSERT → Add new records

UPDATE → modify existing records.

DELETE → remove records

Example :-

```
INSERT INTO STd (ID, Name)
        values (1, 'TOM')
```

↳ TO INSERT value.

```
SELECT * FROM STd.
```

↳ TO SELECT The table

```
UPDATE STd SET Name = 'AAM'
              where id = 1.
```

↳ TO update a table

```
DELETE FROM STD where
                 ID = 1
```

↳ TO delete a table.

```
UPDATE STD SET Total = M1+M2
```

↳ another example for update

SELECT *FROM STUD where Name ='TOM'

↳ To get specific record.

DELETE
Update
SELECT
} where used only.

DELETE FROM STUD

↳ Delete all record.

DELETE FROM STUD WHERE SNO = 1

↳ delete specific record

SELECT * FROM STUD WHERE M1 = 90 AND M2 = 80.

SELECT * FROM STUD WHERE M1 = 80 OR M2 = 90