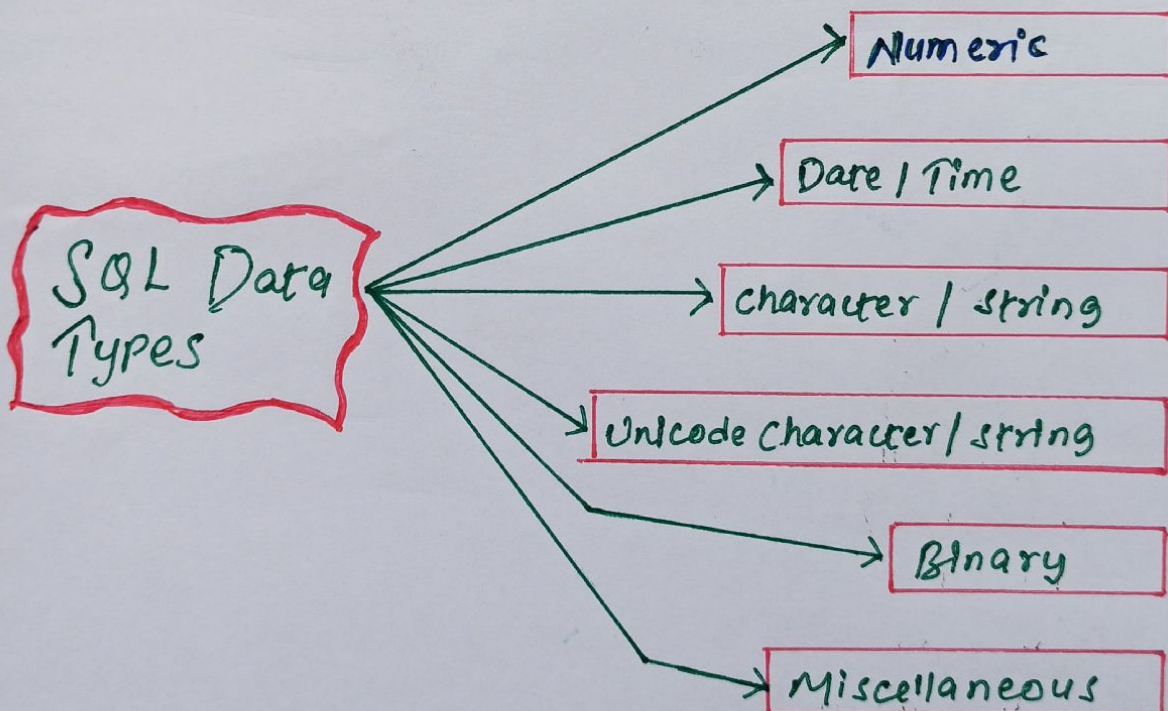# SQL DATA TYPES

★ **Sql data types :-**

1). SQL data types are used to represent the nature of data. that is stored in database.

2). There are mainly six data types of SQL.

3). If we want a column to store only integer value, then we can define its data type as <u>int.</u>

4). <u>In database each column has specific data type.</u> Data type specifies type of data that column can hold it. such as date, string, numeric value etc.

SQL data types :-

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1). **Numeric data type :-**

BIT (size) : The number of bits per value is specified in size. The size character can hold value from 1 to 64 And default value is 1.

- **INT (size):** The size character can hold maximum display width i.e. 255. It is used for integer value.

- **INTEGER :** It is equals to INT (size).

- **FLOAT (size, d):** The size parameter shows the total number of digits. Number of digit after decimal point denoted by d.

- **FLOAT (P):** It is used to denote floating point number. P determines to use **FLOAT / DOUBLE** for resulting data type. If P betn 0-24 then FLOAT & P is betn 25-53 then DOUBLE.

- **DOUBLE (size, d):**
  - Total number of digits specified in size.
  - Number of digit after decimal is denoted by 'd'.

- **DECIMAL (size, d):** To specify fixed point number.
  - size denotes total number of digits.
  - Number of digit after decimal is denoted by 'd'
  - Max value of size is 65 & default is 10.
  - Max value of 'd' is 30 & default is 0.

- **DEC (size, d):** It is equal to DECIMAL (size, d).

- **BOOL :** It is used to find boolean values true or false.
  - Zero value is false.
  - Non-zero value is true.

DATE / TIME

- **DATE :** Its format is YYYY-MM-DD.
  Its range from '1000-01-01' to '9999-12-31'.

- **DATETIME (fsp) :** - It is combination of date & time.
  - Format is YYYY-MM-DD, hh:mm:ss.
  - Range betn '1000-01-01 00:00:00
  to 9999-12-31 23:59:59'.

- **TIMESTAMP (fsp) :** To specify timestamp.
  - It stores value in second since unix epoch.
  - Format is YYYY-MM-DD hh:mm:ss.
  - Its range betn '1970-01-01 00:00:01' UTC
  to '2038-01-09 03:14:07' UTC.

- **TIME (fsp) :** It stores the time in format hh:mm:ss.
  - Range betn - '838:59:59' to '838:59:59'

- **YEAR :** - Stores year in 2 digits or 4 digits format.
  - Range 1901 to 2155 in 4 digit format.
  - Range 70 to 69 represents 1970 to 2069.

Unicode character / string :-

- **nchar :** Fixed length with maximum length of 4000 characters.

- **nvarchar :** - Variable length storage with maximum length of 4000 character.

- **nvarchar (max) :** - Variable length storage with provides max characters.
  - Max size is 536.870,912 characters.

- **ntext :** – Variable length storage with a maximum size of 1GB data.

Binary :-

- **binary (n):** – It is fixed length with maximum length of 8000 bytes.

- **Varbinary :-** – It is a variable length storage with provided max 8000 bytes.

- **Varbinary (max) :-** – It is a variable length storage with provided maximum 2 GB of size.

- **Image :-** – The variable – length storage with maximum size of 2 GB.

Miscellaneoys

- **XML** – It is used to store XML formatted data and we can store maximum 2 GB data.

- **Cursor** – It is used to store a reference to cursor object.

- **table** – Stores a result – set for later processing.

- **UniqueIdentifier** — It is used to store globally unique identifier (GUID).

- **SQL-Varient** – It stores upto 8000 bytes of data.
  – It is used to store values of various data types except text, ntext, varchar(max), xml etc.