**Day-08**

**20-03-2025**

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**Datatypes:**

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-> The data in how many ways we can manage in the oracle database software, to describe datatypes can be used.

-> There are different datatypes:

 1) Number type

 2) Text Type

 3) Date type

 4) Time stamp

 5) Special datatypes

1) Number type:

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 integers

 floating-values

-> Rather than other programming languages, in oracle we just have only one type of datatype which is commonly represent integers and floats both is called as "number type".

Ex: Whole number ==> 0 to n

natural number ==> 1 to n

negative numbers ==> -1, -10, etc.

floating-point values:

 1.0009, 100000.67 etc.

-> Number type can use in three ways:

 i) number

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 Ex: employee Id ==> 1021, 11002233

 age = 21, 32 etc.

 -> any integer with any length we can define with "number" type

 ii) number(size)

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 Ex: employee Id ==> number(4);

 121

 1023

 1

 12

 -> According to business requirements, some times we need to define the numbers with specified size or length, then we can use "number(size)".

 iii) number(precisions, size) ==> float

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 Ex: salary = 95000.00; number(7,2);

 ANSCII ==> American National Standard Code Information Interchange

 Ex: salary = number(10,2);

 Here:

 the total length of the data = 10

 out of the 10, the 2 places can be considered for fractional part (after the decimal point) and remaining will be for decimal part (before the decimal point).

2) Text Types:

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-> three different datatypes for text type data handling:

 1) char(size)

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 Ex: name = "Ravi"

 char(4)

 name = char(30);

 "Ravi"; (4-characters ==> 4-bytes)

 in the total 30 bytes of memory the 4-bytes can store with "ravi"

 remaining 26 bytes can be wasted.

 -> static type of data.

 it leads to waste the memory in every definition.

 -> we can store 1 to 2000 characters with char(size);

 2) varchar(size)

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 -> dynamic type

 according to the value which we have assigned the memory can be created.

 Ex: name = varchar(30);

 name = "ravi"

 -> using the varchar(size), we can store maximum of 4000 characters.

 -> it can create the total of 4-bytes of memory.

 3) varchar2(size)

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 -> same as varchar(size).

 Was introduced in SQL.

-> The command for getting the System date format:

 $ select sysdate from dual;

3) Date type:

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Ex: employee joining date

 employee relieving date

date of birt etc.

we can use "date datatype"

-> date can represent:

 'dd-Mon-yy';

Ex: employeeJoiningDate = date;

 '20-03-2025'

 System date = '20-Mar-25'

4) Timestamp:

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represent in the format of:

 'dd-Mon-yy hh:mm:ss';

Ex:

dateOfBook = '20-Mar-25 11:02:20';

5) Special Datatypes:

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1) Clob

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-> Character Large Object

-> we want to represent huge amount of the character data from 1G to 4G, we can use "clob"

2) Blob

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-> Binary Large Object

-> to handle the binary data like: images, audio, video files, zip file etc. we can use "blob"

-> size: 1g to 4g

3) BFile

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-> was introduced by sql

same as blob