

DATATYPES:

DATATYPE IS AN ATTRIBUTE WHICH SPECIFIES WHAT TYPE OF DATA IS STORED INTO A COLUMN. ORACLE SUPPORTS THE FOLLOWING DATATYPES ARE

- 1) NUMERIC DATATYPES
- 2) CHARACTER DATATYPES/ STRING DATATYPES
- 3) LONG DATATYPE
- 4) DATE DATATYPES
- 5) RAW & LONG RAW DATATYPES
- 6) LOB DATATYPES (LARGE OBJECTS DATATYPES)

1) NUMERIC DATATYPES:

- i) INT
- ii) NUMBER (P, S)

INT: STORING INTEGER FORMAT VALUES ONLY.

INT = NUMBER (38)

NOTE: WHEN WE USE "INT" DATATYPE ON COLUMN AT THE TIME OF TABLE CREATION THEN INTERNALLY ORACLE SERVER WILL CONVERT INTO "NUMBER" DATATYPE WITH MAXIMUM SIZE IS 38 DIGITS.

NUMBER (P, S): STORING BOTH INTEGER & FLOAT FORMAT VALUES. HERE THIS DATATYPE IS HAVING FOLLOWING TWO ARGUMENTS ARE PRECISION(P), SCALE(S).

WHEN WE USE ----> NUMBER(P)-----> STORE INTEGER VALUES WHEN WE

USE ----> NUMBER (P, S) ----> STORE FLOAT VALUES PRECISION(P):

> COUNTING ALL DIGITS INCLUDING LEFT & RIGHT SIDES OF GIVEN FLOAT EXPRESSION.

Ex: 25.12

PRECISION = 4

Ex: 856.45

PRECISION = 5

Ex: 9999.99

PRECISION = 6

SCALE(S):

> COUNTING ONLY RIGHT DIGITS OF A FLOAT EXPRESSION.

Ex: 25.12

SCALE = 2

PRECISION = 4

Ex:

7456.123

SCALE = 3

PRECISION = 7

2) CHARACTER DATATYPES: STORING "STRING" FORMAT DATA ONLY. IN DATABASE STRING IS REPRESENTED WITH SINGLE QUOTES ' <STRING> '. CHARACTER DATATYPES ARE STORING TWO TYPES STRING FORMAT DATA. THOSE ARE

i) CHARACTERS ONLY STRING DATA ii) ALPHANUMERIC STRING DATA.

Ex:

CHARACTER DATATYPES

|

< STRING FORMAT DATA >

|

||

CHARACTERS ONLY ALPHANUMERIC CHAR's STRING DATA STRING DATA [A - Z (or) a - z]

[A - Z (or) a - z & 0 - 9 & @, #, \$, %, &, _ ,etc]

Ex: 'SAI', 'ALLEN ',etc Ex: ' sai123@gmail.com ',etc.

NOTE: CHARACTER DATATYPES ARE AGAIN CLASSIFIED INTO TWO CATEGORIES THOSE ARE

1) NON - UNICODE DATATYPES: SUPPORTING TO STORE LOCALIZED DATA (ONLY ENGLISH LANGUAGE) THESE ARE AGAIN TWO TYPES.

1) CHAR(SIZE):

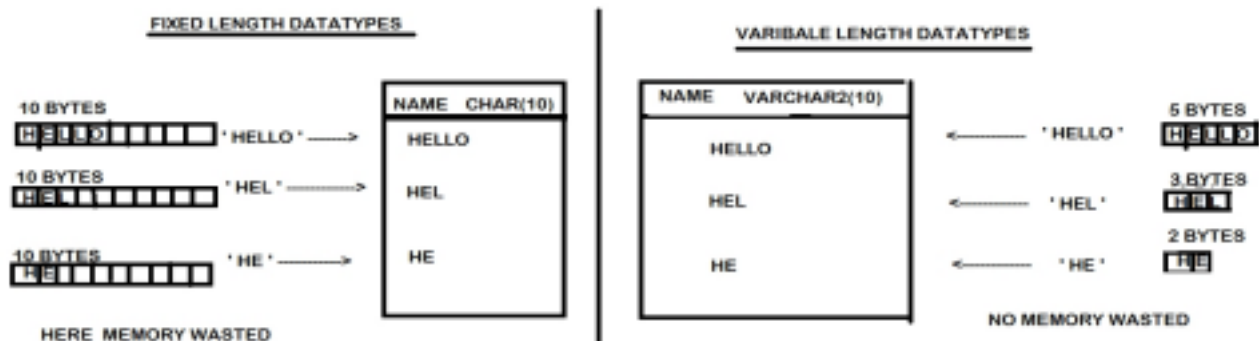
- IT IS A FIXED LENGTH DATATYPE (STATIC).

- WILL STORE NON-UNICODE CHAR's IN THE FORM OF 1 CHAR = 1 BYTE. -

MAXIMUM SIZE OF CHAR DATATYPE IS 2000 BYTES (2000 CHAR's). 2) VARCHAR2(SIZE):

- IT IS A VARIBALE LENGTH DATATYPE(DYNAMIC).
- WILL STORE NON-UNICODE CHAR's IN THE FORM OF 1 CHAR = 1 BYTE. - MAXIMUM SIZE OF VARCHAR2 DATATYE IS 4000 BYTES (4000 CHAR's).

DIFFERENCES BETWEEN FIXED LENGTH DATATYPES AND VARIABLE LENGTH DATATYPES:



2) **UNICODE DATATYPES:** THESE DATATYPES ARE STORING "GLOBALIZED DATA" SUPPORTING "ALL NATIONAL LANGUAGES". THESE ARE TWO TYPES,

1) NCHAR(SIZE):

- IT IS FIXED LENGTH DATATYPE(STATIC).
- WILL STORE UNICODE CHAR's (ALL NATIONAL LANG's) IN THE FORM OF 1 CHAR = 1 BYTE.
- MAXIMUM SIZE OF NCHAR DATATYE IS 2000 BYTES (2000 CHAR's). 2)

NVARCHAR2(SIZE):

- IT IS A VARIBALE LENGTH DATATYPE(DYNAMIC).
- WILL STORE UNICODE CHAR's IN THE FORM OF 1 CHAR = 1 BYTE. - MAXIMUM SIZE

OF nVARCHAR2 DATATYE IS 4000 BYTES (4000 CHAR's). 3) LONG:

- IT IS VARIBALE LENGTH DATATYPE(DYNAMIC).
- WILL STORE NON-UNICODE & UNICODE CHAR's IN THE FORM OF 1 CHAR = 1BYTE.
- MAXIMUM SIZE OF LONG DATATYE IS 2GB.

4) DATE DATATYPES:

- STORING DATE AND TIME INFORMATION OF A PARTICULAR DAY.

- RANGE OF DATE DATATYPES IS FROM "01-JAN-4712 BC " TO "31-DEC-9999 AD ".

i) DATE: STORING DATE & TIME INFORMATION BUT TIME IS OPTIONAL. IF NOT ENTERED TIME BY USER, THEN ORACLE "12:00:00AM". DEFAULT FORMAT OF DATE DATATYPE IS 'DD-MON-YYYY / YY HH: MI: SS '. IT OCCUPIED 7 BYTES OF MEMORY (FIXED MEMORY).

ii) TIMESTAMP: STORING DATE & TIME INFORMATION ALONG WITH MILLISECONDS. DEFAULT FORMAT OF DATE DATATYPE IS 'DD-MON-YYYY / YY HH: MI: SS.MS'. IT OCCUPIED 11 BYTES OF MEMORY (FIXED MEMORY).

5) RAW & LONG RAW: STORING IMAGE / AUDIO / VIDEO FILES IN THE FORM OF 010010101001 BINARY FORMAT. THE MAXIMUM SIZE OF RAW DATATYPE IS 2000 BYTES AND LONG RAW SIZE IS 2 GB.

6) LOB DATATYPES (LARGE OBJECTS):

i) BLOB (BINARY LARGE OBJECT): STORING IMAGE / AUDIO / VIDEO FILES IN THE FORM 010010101001 BINARY FORMAT. THE MAXIMUM SIZE IS 4GB.

ii) CLOB (CHARACTER LARGE OBJECT): STORING NON-UNICODE CHARACTERS. THE MAXIMUM SIZE IS 4GB.

iii) NCLOB (NATIONAL CHARACTERS LARGE OBJECT): STORING UNICODE CHARACTERS. THE MAXIMUM SIZE IS 4GB.

NOTE:

> CHAR IS UPTO 2000 BYTES > NCHAR IS UPTO 2000 BYTES > VARCHAR2 IS UPTO 4000 BYTES > NVARCHAR2 IS UPTO 4000 BYTES > CLOB IS UPTO 4 GB > NCLOB IS UPTO 4 GB

> RAW IS UPTO 2000 BYTES > LONG RAW IS UPTO 2GB > BLOB IS UPTO 4 GB.