" Data Types " ====>
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These categories are :-

* Character Data Types : CHAR, VARCHAR,VARCHAR2,LONG
* Numeric Data Types : NUMBER
* Date Data Types : DATE
* LOB Data Types : BLOB, CLOB , BFILE
* Binary Data Types: RAW , LONG RAW
* Id Data Types : ROWID

Character Data Types ===>
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* Character types are those which can store alpha-numeric values.
==> CHAR, VARCHAR, VARCHAR2, LONG

* The CHAR data type stores fixed-length character strings. When we create a table with a CHAR column, we can specify a string length (in characters) between 1 and 2000 bytes for the CHAR column width.

- The default size is 1 byte.

Syntax: (col_name) char(size)
Example: s_name char(10)

* The VARCHAR2 data type stores variable-length character strings. When we create a table with a VARCHAR2 column, we specify a maximum string length (in characters) between 1 and 4000 bytes for the VARCHAR2 column.

- No default size is there.

Syntax: (col_name) varchar2(size);
Example: s_name varchar2(10)

* Columns defined as LONG can store variable-length character data containing up to 2 GB of information. Oracle strongly suggest us to not create tables with LONG columns and in it’s place use CLOB data type

Syntax: (col_name) Long
Example: story Long

Numeric Data Types ===>
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* The numeric data types store positive and negative fixed and floating-point numbers. The NUMBER data type stores integers as well as floating-point numbers.

- The range of the value can be from -1*10-130 to 9.9*10125, up to 38 digits.

Syntax: (col_name) Number(size);
Example: Roll number(3)
          Per number(5,2)

DATE Data Types ===>
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* The DATE data type stores the year (including the century), the month, the day, the hours, the minutes, and the seconds (after midnight).

- Date data is stored in a fixed-length fields of 7 bytes , corresponding to century, year, month, day, hour, minute, and second.

- Oracle uses its own format to represent dates which is by default 'DD-MON-YY'.

- So today's date in Oracle will be represented as 10-feb-24.

Syntax: (col_name) Date
Example: DOB Date

LOB Data Types ===>
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* The LOB data types BLOB, CLOB and BFILE enable us to store and manipulate large blocks of unstructured data (such as text, graphic images, video clips, and sound waveforms) in binary or character format.

* Oracle recommends that we always use LOB data types over LONG data type because:

- A table can contain multiple LOB columns but only one LONG column.

- The maximum size of a LOB can be from 4GB to 128 TB depending on memory , while the maximum size of a LONG is only 2GB.

- Tables with LOB columns can be replicated, but tables with LONG columns cannot.

* The BLOB data type stores unstructured binary data in the database and can go up to maximum 128 TB.

* The CLOB data type can store up to 128 TB of character data in the database.

- Notice that LOB also does not allow us to mention the size.

Syntax: (col_name) BLOB
        (col_name) CLOB
Example: movie_scenes BLOB
         song_lyrics CLOB

* The BFILE data type stores unstructured binary data in operating-system files outside the database.

- A BFILE column or attribute stores a file locator that points to an external file containing the data.

Syntax: (col_name) BFILE
Example: movie_poster BFILE

Binary Data Types =====>

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* The RAW and LONG RAW data types are used for binary data

- For example, LONG RAW can be used to store graphics, sound, documents, of binary data.

- The LONG RAW datatype is provided for backward compatibility with old applications.

- For new applications, Oracle recommends us to use the BLOB and BFILE data types for large amounts of binary data.

ROWID Data Type =====>
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* Oracle uses a ROWID data type to store the physical address of every row in the database.

- Just as our home address uniquely identifies where we live, an Oracle ROWID uniquely identifies where a row resides on disk.

- The information in a ROWID gives Oracle everything it needs to find our row on the disk.