Oracle Interview questions:-

1. **Difference between char, varchar and varchar2?**

Ans:-

**1. CHAR Datatype:**

It is a datatype in SQL which is used to store character string of fixed length specified. If the length of the string is less than set or fixed-length then it is padded with extra blank spaces so that its length became equal to the set length when PAD\_CHAR\_TO\_FULL\_LENGTH SQL mode is enabled. The storage size of the CHAR datatype is n bytes(set length). We should use this datatype when we expect the data values in a column are of the same length.

**Example:**

Consider the Query:

CREATE TABLE Student(Name VARCHAR(30), Gender CHAR(6));

INSERT into Student VALUES('Herry', 'Male');

INSERT into Student VALUES('Mahi', 'Female');

SELECT LENGTH(Gender) FROM Student;

OUTPUT:

LENGTH(Gender)

6

6

**2. VARCHAR Datatype:**

It is a datatype in SQL which is used to store character string of variable length but a maximum of the set length specified. If the length of the string is less than set or fixed-length then it will store as it is without padded with extra blank spaces. The storage size of the VARCHAR datatype is equal to the actual length of the entered string in bytes. We should use this datatype when we expect the data values in a column are of variable length.

**Example:**

Consider the Query:

CREATE TABLE Student(Name VARCHAR(20), Gender CHAR(6));

INSERT into Student VALUES('Herry', 'Male');

INSERT into Student VALUES('Mahi', 'Female');

SELECT LENGTH(Name) FROM Student;

OUTPUT:

LENGTH(Name)

5

4

Note:- Varchar and Varchar2 both are same but it’s advisable to use Varchar2 as it is reserved for future development.

1. What is SQL Indexes?

Ans:- An index is a schema object. It is used by the server to speed up the retrieval of rows by using a pointer. It can reduce disk I/O(input/output) by using a rapid path access method to locate data quickly. An index helps to speed up select queries and where clauses, but it slows down data input, with the update and the insert statements. Indexes can be created or dropped with no effect on the data. In this article, we will see how to create, delete, and uses the INDEX in the database.

For example, if you want to reference all pages in a book that discusses a certain topic, you first refer to the index, which lists all the topics alphabetically and is then referred to one or more specific page numbers.

**Creating an Index:**

**Syntax:**

CREATE INDEX index ON TABLE column;

where the index is the name given to that index and TABLE is the name of the table on which that index is created and column is the name of that column for which it is applied.

**For multiple columns:**

Syntax:

CREATE INDEX index ON TABLE (column1, column2,.....);

**Unique Indexes:**

Unique indexes are used for the maintenance of the integrity of the data present in the table as well as for the fast performance, it does not allow multiple values to enter into the table.

Syntax:

CREATE UNIQUE INDEX index ON TABLE column;

When should indexes be created:

A column contains a wide range of values.

A column does not contain a large number of null values.

One or more columns are frequently used together in a where clause or a join condition.

**When should indexes be avoided:**

The table is small

The columns are not often used as a condition in the query

The column is updated frequently

**Removing an Index:**

To remove an index from the data dictionary by using the DROP INDEX command.

**Syntax:**

DROP INDEX index;

To drop an index, you must be the owner of the index or have the DROP ANY INDEX privilege.

**Internal works of Index:-**

**So, How indexing actually works?**

Well, first off, the database table does not reorder itself when we put index on a column to optimize the query performance. *An index is a data structure, (most commonly its B-tree****Its balanced tree, not binary tree****) that stores the value for a specific column in a table.*

The major advantage of B-tree is that the data in it is sortable. Along with it, B-Tree data structure is time efficient and operations such as searching, insertion, deletion can be done in logarithmic time.For more info please go through the below link:- <https://www.pankajtanwar.in/blog/how-database-indexing-actually-works-internally>

1. What is the cursor?

Ans:- A cursor in SQL is a temporary work area created in system memory when a SQL statement is executed. A SQL cursor is a set of rows together with a pointer that identifies a current row. It is a database object to retrieve data from a result set one row at a time. It is useful when we want to manipulate the record of a table in a singleton method, in other words, one row at a time. In other words, a cursor can hold more than one row but can process only one row at a time. The set of rows the cursor holds is called the active set.

1. What is View?

Ans:-

* + Views in SQL are considered as a virtual table. A view also contains rows and columns.
  + To create the view, we can select the fields from one or more tables present in the database.
  + A view can either have specific rows based on certain condition or all the rows of a table.