Oracle

What is Oracle table?

A table is the basic unit of data storage in an oracle database. The tables of a database hold all of the user accessible data. Table data is stored in rows and columns.

What are the Clusters?

Clusters are groups of one or more tables physically stores together to share common columns and are often used together.

What is an Index?

An Index is an optional structure associated with a table to have direct access to rows, which can be created to increase the performance of data retrieval. Index can be created on one or more column of a table.

What are the advantages of views?

Provide an additional level of table security,by restricting access to a predetermined set of rows and columns of a table.

Hide data complexity.

Simplify commands for the user.

Present the data in a different perspective from that of the base table.

Store complex queries.

What are the various types of queries?

The types of queries are

Normal queries

Sub Queries

Co-related queries

Nested queries

Compound queries

What is the difference between clustered and a non-clustered index?

A clustered index is a special type of index that reorders the way records in the table are physically stored. Therefore table can have only one clustered index. The leaf nodes of a clustered index contain the data pages.

A non clustered index is a special type of index in which the logical order of the index does not match the physical stored order or the rows on disk.

What is a tablespace?

A database is divided into logical storage unit called tablespace. A tablespace is used to grouped related logical structures together.

Why use materialized view instead of a table?

Materialized views are basically used to increase query performance since it contains results of a query. They should be used for reporting instead of a table for a faster execution.

What does ROLLBACK do?

ROLLBACK retracts any of the changes resulting from the SQL statements in the transaction.

Compare and contrast TRUNCATE and DELETE for a table?

Both the truncate and delete command have the desired outcome of getting rid of all the rows in a table. The difference between in a table. The difference between the two is that the truncate command is a DDL operation and just moves the high water mark and produces a now roll back. The Delete command, on the other hand, is a DML operation which will produce a rollback and thus make longer to complete.

What is null value?

Null value is neither zero nor it is a blank space. It is some unknown value which occupies 4 bytes of space of memory in SQL.

Define transaction?

A transaction is a sequence of SQL statements that Oracle Database treats as a single unit.

What is the difference between SQL & Oracle?

SQL is Structured Query Language. Oracle is a Database. SQL is used to write queries against Oracle DB.

What are different Oracle database objects?

Tables, Views, Indexes, Synonyms, Sequences, Tablespaces.

What is Hash Cluster?

A row is stored in a hash cluster based on the result of applying a hash function to the row’s cluster key value. All rows with the same hash key value or stores together on disk.

What is a User\_exit?

Calls the user exit named in the user\_exit\_string. Invokes a 3GI program by name which has been properly linked into your current oracle forms executable.

What is schema?

A schema is collection of database objects of a user.

What are Roles?

Roles are named groups of related privileges that are granted to users or other roles.

What are the dictionary tables used to monitor a database spaces?

DBA\_FREE\_SPACE

DBA\_SEGMENTS

DBA\_DATA\_FILES

What is a SNAPSHOT?

Snapshots are read-only occupies of a master table located on a remote node which is periodically refreshed to reflect changes made to the master table.

What is a database instance?

A database instance is a set of memory structure and background processes that access a set of database files. The processes can be shared by all the users.

What are parameters?

Parameters provide a simple mechanism for defining and setting the values of inputs that are required by a form at startup. Form parameters are variables of type char, number, date, that you define at design time.

What are the different file extensions that are created by oracle reports?

Rep file and Rdf file.

What are Clusters?

Clusters are groups of one or more tables physically stores together to share common columns and are often used together.

What is difference between SUBSTR and INSTR?

INSTR function search string for sub-string and retruns an integer indicating the position of the character in string that is the first character of this occurrence of this occurrence. SUBSTR function retruns a portion of string, beginning at character position, substring, substring\_length charcters long. SUBSTR calculates lengths using characters as defined by the input character set.

Define a View?

A view is a virtual table which is based on the one or more physical tables and views.

What is the difference between a view and a synonym?

Synonym is just a second name of table used for multiple link of database. View can be created with many tables, and with virtual columns and with conditions. But synonym can be on view.

SAVEPOINTS

SAVEPOINTS are used to subdivide a transition into smaller parts. It enables rolling back part of a transaction. Maximum of five save points are allowed.

PRECOMPILERS

A precompiler is a tool that allows programmers to embed SQL statements in high-level source programs like C, C++, COBOL, etc. The precompiler accepts the source program as input, translates the embedded SQL statements into standard Oracle runtime library calls, and generates a modified source program that one can compile link, and execute in the usual way.

When do you use WHERE clause and when do you use HAVING clause?

The WHERE condition lets you restrict the rows selected to thosee that satisfy one or more conditions. Use the HAVING clause to restrict the groups of returned rows to those groups for which the specified condition is TRUE.

What are the differences between Stored Procedures and Triggers?

A stored procedure are compiled collection of programs or SQL statements that live the database. A stored procedure can access and modify data present in many tables. Also a stored procedure is not associated with any particular database object. But triggers are event-driven special procedures which are attached to a specific database object.

What must be installed with ODBC on the client in order for it to work with Oracle?

SQLNET and PROTOCOL layers of the transport programs.

What is Trigger?

Triggers are special kind of stored procedures that get executed automatically when an INSERT,UPDATE or DELETE operation takes place on a table.

Explain the difference between a data block, an extent and a segment?

A data block is the smallest unit of logical storage for a database object. As objects grow they take chunks of additional storage that composed of contiguous data blocks. These groupings of contiguous data blocks are called extents. All the extents that an object takes when grouped together are considered the segment of the database object.

What is bind reference and how can it be created?

Bind reference are used to replace the single value in SQL, PL/SQL statements a bind reference can be created using a (:) before a column or a parameter name.

How many LONG columns are allowed in a table? Is it possible to use LONG columns in WHERE clause or ORDER BY?

Only one LONG column is allowed. It is not possible to use LONG column in WHERE or ORDER BY clause.

What are various types of joins?

Equi Joins,

Cartesian Joins

Self Join

Outer Join

What is the maximum number of triggers can apply to a single table?

12 triggers.

What command would you use to create a backup control file?

Alter database backup control file to trace.

What are the different index configurations a table can have?

A table can have one of the following index configurations.

No indexes

A clustered index

A clustered index and many nonclustered indexes

A non clustered index

Many nonclustered indexes.

What is difference between UNIQUE constraint and PRIMARY KEY constraint?

A column defined as UNIQUE can contain Nulls while a column defined as PRIMARY KEY can’t contain Nulls. A table can have only one primary keys.

What is BCP? When does it used?

BulkCopy is a toll used to copy huge amount of data from tables and views. BCP does not copy the structures same as source to destination.

How to know which index a table is using?

SELECT table\_name, index\_name from user\_constraints.

What is SYSTEM tablespace and when is it created?

Every Oracle database contains a tablespace named SYSTEM, which is automatically created when the database is created. The SYSTEM tablespace always contains the data dictionary tables for the entire database.

Which date function returns number value? Which date function returns number value?

months\_between

What is integrity constraints?

Integrity constraints are used to ensure accuracy and consistency of data in a relational database.

What is the difference between Explicit and Implicity Cursors?

An implicit cursor is one created “automatically” for you by Oracle when you execute a query. It is simpler to code An Explicit cursor is one you create yourself. It takes more code, but gives more control – for example, you can just open-fetch-close if you only want the first record and don’t care if there are others DBA\_DATA\_FILES.

What are primary keys?

Primary key are used to uniquely identify each row of the table. A table can have only one primary key.

What are the components of physical database structure of Oracle database?

Oracle database is comprised of three types of files. One or more data files, two are more redo log files, and one or more control files.

What is DECODE function used for?

DECODE is used to decode a CHAR or VARCHAR2 or NUMBER into any of several different character strings or numbers based on value. That is DECODE does a value-by-value substitution.

What is the default return value of a function?

The default return value from a function is int. In other words, unless explicitly specified the default return value by compiler would be integer value from function.

How you will avoid your query from using indexes?

By changing the order of the columns that are used in the index, in the where condition, or by concatenating the columns with some constant values.

What is a cluster key?

The related columns of the tables are called the cluster key. The cluster key is indexed using a cluster index and its value is stored only once for multiple tables in the cluster.

What is SGA?

The System Global Area in an Oracle database is the area in memory to facilitate the transfer or information between users. It holds the most recently requested structural information about the database, the structure is database buffers, dictionary cache, redo log buffer and shared pool area.

What is a data segment?

Data segment are the physical areas within a database block in which the data associated with tables and clusters are stored.

What is ROWID?

ROWID is a pseudo column attached to each row of a table. It is 18 characters long, blockno, row number are the components of ROWID.

PL/SQL is a transaction processing language that offers the following advantages:  
  
Support for SQL - SQL is flexible, powerful and easy to learn..

Support for object-oriented programming.

Better performance - with PL/SQL, an entire block of statements can be sent to Oracle at one time.  
Higher productivity - PL/SQL increases productivity by enabling use of better tools.  
Full portability - PL/SQL are portable to any operating system and platform on which Oracle runs.

Tight integration with Oracle  
 Security PL/SQL can achieve data abstraction, access control.

What is a union, intersect, minus?

UNION  
Union operator is used to return all rows from multiple tables and eliminate duplicate rows. The number of columns and the datatypes of the columns must be identical in all the SELECT statements used in the query. The names of the columns need not be identical.  
  
Syntax

SELECT column1, column2 FROM tablename1  
UNION  
SELECT column1, column2 FROM tablename2;

INTERSECT   
This operator is used to return all rows common to multiple queries. Intersect ignores NULL values  
  
Syntax

SELECT column1, column2 FROM tablename1  
INTERSECT  
SELECT column1, column2 FROM tablename2;

MINUS   
This operator returns all those rows from first query that are not present in the second query.  
  
Syntax

SELECT column1, column2 FROM tablename1  
MINUS  
SELECT column1, column2 FROM tablename2;

How many types of tables supported by Oracle? Explain them.

- Ordinary (heap-organized) table: This is the most basic type of table that stores data as heaps.

- Clustered table: A cluster is a collection of tables sharing the same data block in which the columns are shared as well.  
- Index-organized table: Here, the data is stored in the form of a Btree index structure in which each index entry is storing the non key column value.  
- Partitioned table: Here, the data is broken into partitions that can be managed and operated individually.

What are the types of constraints available in oracle?

Oracle constraints are used to maintain consistent of data and ensure the data is properly maintained. A constraint is more or less a restriction we try to apply on a table.  
  
Types of constraints:  
  
- Check constraints  
- NOT NULL constraint  
- PRIMARY KEY constraint  
- REFERENCES constraint  
- UNIQUE constraint

What is correlated query? Explain its uses.

In a correlated query, the outer query is related to the inner query. This means one or more columns in the outer query are referenced. It’s used when the outer queries value is being used by inner query. For example, we need to find which employee had more perks in the current month than they did in the previous month. The correlated subquery is executed for each row of perks information in the parent query to first determine what the perks were for each employee in the previous month. This data, in turn, is compared to perks for each employee in the current month, and only those employees whose perks in the current month were greater that their previous month's perks are returned.

Unix Shell Script:

Assume we create a test.sh script. Note all the scripts would have .sh extension. Before you add anything else to your script, you need to alert the system that a shell script is being started. This is done using the shebang construct. For example −

#!/bin/sh

This tells the system that the commands that follow are to be executed by the Bourne shell. It's called a shebang because the # symbol is called a hash, and the ! symbol is called a bang.

To create a script containing these commands, you put the shebang line first and then add the commands −

#!/bin/bash

pwd

ls