**oracle pl sql interview questions for 3+ years experience :-**

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**2. What is difference between TRUNCATE & DELETE?**

1. Truncate is a DDL command

2. We can remove bulk amount of records at a time

3. We can't rollback the records

4. Release the space in database

5. Truncate reset the high water mark

6. Truncate explicitly commit  
1. Delete is a DML command

2. We can delete record by record

3. We can rollback the records

4. Can’t release the memory in database

5. Delete can’t reset the water mark

6. Delete implicitly commit  
(OR)

Ans: Differences:

TRUNCATE commits after deleting entire table i.e., cannot be rolled back.

Database triggers do not fire on TRUNCATE DELETE allows the filtered deletion.

Deleted records can be rolled back or committed.Database triggers fire on DELETE.

**3. Difference between view and materialized view**

Difference

View is a logical table

View can hold the query

We can’t create indexes on view

View will create security purpose

Mv is a physical table

Mv can hold the query with refresh data

We can create indexes on mv

Mv will create performance issues

**4. Difference between procedure and function?**

**Procedure:**  
Procedure allow the DML statements without any restrictions

We can’t call procedure in sql language

We can store images in stored procedure

**Function:**  
Function not allow the DML statements (If you need to use we can use pragma)

We can call Function in sql language

Function can’t store images

**5. What is cursor?**

Cursor is private sql area which is used to execute sql statements and store processing information

**6. What is explicit and implicit cursor and examples?**

The implicit cursor is automatically declared by oracle every time an sql statement is executed whenever you issue a sql statement, the oracle server opens an area of memory in which the command is parsed and executed. Every implicit cursor attribute start with sql%.

An explicit cursor is created and managed by the user. And used for multi row select statement.

**7.What do u understand by database and what is objects in oracle**

Ans: A database is defined as a collection of meaningful data. Objects in oracle means Table, Views, Procedures, Triggers, Synonym etc

**8.What is a table, view, snapshot?**

**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.a

**Views:** A view is a virtual table. Every view has a query attached to it. (The query is a SELECT statement that identifies the columns and rows of the table(s) the view uses.)

**Snapshot:** A Snapshot is a recent copy of a table from database or in some cases ,a subset of rows/columns of a table. It is also known as Materialized view.

**9.Do a view contain data?**

Ans: Views do not contain or store data

What are the advantages of views?

Ans: 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.

**10.What is an Oracle sequence?**

Ans: A Sequence generates a serial list of unique numbers for numerical columns of a database's tables.

**11.What is a synonym?**

Ans: A synonym is an alias for a table, view, sequence or program unit.

**12.What are the types of synonyms?**

Ans: There are two types of synonyms private and public.

**13.What is a private synonym?**

Ans: Only its owner can access a private synonym.

**14.What is a public synonym?**

Ans: Any database user can access a public synonym

**15.What is an Oracle index?**

Ans: 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 columns of a table. Index may also be considered as a ordered list of content of a column.

**16.What is a schema?**

Ans: The set of objects owned by user account is called the schema.

**17.What is a join? Explain the different types of joins?**

Ans: Join is a query, which retrieves related columns or rows from multiple tables.

Self Join - Joining the table with itself.

Equi Join - Joining two tables by equating two common columns.

Non-Equi Join - Joining two tables by not equating two common columns.

Outer Join - Joining two tables in such a way that query can also retrieve rows that do not have corresponding join value in the other table.

**18.Difference between SUBSTR and INSTR?**

Ans: INSTR (String1, String2 (n, (m)), INSTR returns the position of the m-th occurrence of the string 2 in string1. The search begins from nth position of string1.

SUBSTR (String1 n, m) SUBSTR returns a character string of size m in string1, starting from n-th position of string1.

**19.What is difference between CHAR and VARCHAR2? What is the maximum SIZE allowed for each type?**

Ans: CHAR pads blank spaces to the maximum length. VARCHAR2 does not pad blank spaces. For CHAR the maximum length is 255 and 2000 for VARCHAR2

**20.How to access the current value and next value from a sequence?**

Ans: Current Value : Sequence name.CURRVAL

Next Value sequence name.NEXTVAL.

**21.What are the components of physical database structure of Oracle database?**

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

**22.Query to delete duplicate row from a table**

Ans: Delete from emp where rowid not in (Select min(rowid) from emp Groupby emp\_dept)

**23.What is a cursor its attribute and types?**

Ans: The Oracle Engine uses a work area for its internal processing in order to execute an SQL statement. This work area is private to SQL operation and is called Cursor.

**Types of Cursor:**

Implicit Cursor: If the Oracle engine opened a cursor for its internal processing then it is know as implicit cursor. It is invoked implicitly.

Explicit Cursor: A cursor which is opened for processing data through a PL/SQL block is know as Explicit Cursor.

**Attributes Of a Implicit Cursor:**

%ISOPEN —returns TRUE if cursor is open else FALSE.

Syntax is SQL%ISOPEN

%ROWCOUNT--- returns number of records processed from cursor syntax is SQL %ROWCOUNT %FOUND---- returns TRUE if record is fetched successfully else FALSE, syntax is SQL%FOUND %NOTFOUND-- returns TRUE if record is not fetched successfully else FALSE syntax is SQL%NOTFOUND Attributes Of a Explicit Cursor %ISOPEN—returns TRUE if cursor is open else FALSE. Syntax is cursorname%ISOPEN %ROWCOUNT--- returns number of records processed from cursor syntax is cursorname %ROWCOUNT %FOUND---- returns TRUE if record is fetched successfully else FALSE, syntax is cursorname %FOUND %NOTFOUND-- returns TRUE if record is not fetched successfully else FALSE syntax is cursorname %NOTFOUND

**24.What are inline views?**

Ans: Inline view is Sub-query(queries written in a where clause of SQL statements.). It is a query whose return values are used in filtering conditions of the main query.

**25.How can we refresh a snapshot?**

Ans: Refreshing Snapshots: A snapshot can be refreshed automatically or manually. If a snapshot has to be automatically refreshed then refresh clause must be specified in the CREATE SNAPSHOT. The FAST, COMPLETE or FORCE specifies the type of REFRESH used for automatic refresh. For automatic refresh we can specify the START WITH and NEXT parameter to decide the time interval for the next update.  
COMPLETE refresh: In complete refresh the snapshot query is executed and places the result in the snapshot.  
FAST refresh : In this only the changes made to the master table will be updated to the snapshot. The corresponding log file is used to update. Fast refresh will be done only if \* The snapshot is a simple snapshot. \* The snapshot's master table has a snapshot log \ \* The snapshot log was created before the snapshot was last refreshed or created.  
FORCE refresh : In this ORACLE decides how to refresh the snapshot at the scheduled refresh time. If a fast refresh is possible it performs a fast refresh else it does a complete refresh.

**26.What is a tablespace?**

Ans: A database is divided into Logical Storage Unit called tablespaces. A tablespace is used to grouped related logical structures together.

**27.Is sequence cyclic?**

Ans: Yes

**28.Select nth highest value from a list of values ?**

Ans: SELECT a.emp\_name,a.sal FROM emp a WHERE &n - 1= (SELECT COUNT(DISTINCT sal) FROM emp b WHERE b.sal > a.sal )

**29.What are triggers and its types?**

Ans: A trigger is a piece of code attached to a table that is executed after specified DML statements executed on that table. There are 12 types of triggers in PL/SQL that consist of combinations of the BEFORE, AFTER, ROW, STATEMENT, TABLE, INSERT, UPDATE, DELETE and ALL key words: For eg: BEFORE ALL ROW INSERT AFTER ALL ROW INSERT BEFORE INSERT AFTER INSERT

**30.What is the maximum number of triggers, can apply to a single table?**

Ans: 12 triggers(Oracle).

**31.Difference between rowid and rownum?**

Ans: ROWID is pseudo column in every table. The physical address of the rows is use to for the ROWID.IN HEXADECIMAL representation, ROWID is shown as 18 character string of the following format BBBBBBBBB.RRRR.FFFF (block, row, file) FFFF is the fileid of the datafile that contains the row. BBBBBBBBB is the address of the datablock within the datafile that contains the row. RRRR is the ROW NUMBER with the data block that contains the row. They are unique identifiers for the any row in a table. They are internally used in the construction of indexes.  
Rownum is the sequential number of rows in the result set object.

**32.What is the fastest query method for a table?**

Ans: By rowid

**33.What is the difference of a LEFT JOIN and an INNER JOIN statement?**

Ans: A LEFT JOIN will take ALL values from the first declared table and matching values from the second declared table based on the column the join has been declared on. An INNER JOIN will take only matching values from both tables

**34.How can I avoid a divide by zero error?**

Ans: Use the DECODE function. This function is absolutely brilliant and functions like a CASE statement, and can be used to return different columns based on the values of others.

**35.Is view updatable?**

Ans: Only if the view is a simple horizontal slice through a single table.

**36.What is Dual ?**

Ans: The DUAL table is a table with a single row and a single column used where a table is syntactically required.

**37.What is the difference between CHAR and VARCHAR ?**

Ans: CHAR is fixed length character type at storage level, and that VARCHAR will be variable length.

**38.Do we use commit in triggers.**

Ans: No

**39.How will the fetch the last inserted record in any table ?**

Ans: select column 1, column 2.... From where rowid = (select max(rowid) from table);

**40.What are constraints and its types?**  
Integrity Constraint : An integrity constraint is a declarative way to define a business rule for a column of a table. An integrity constraint is a statement about a table's data that is always true.

Types of integrity constraints : The following integrity constraints are supported by ORACLE:

1. NOT NULL : disallows nulls (empty entries) in a table's column

2. UNIQUE : disallows duplicate values in a column or set of columns

3. PRIMARY KEY : disallows duplicate values and nulls in a column or set of columns

4. FOREIGN KEY : requires each value in a column or set of columns match a value in a related table's UNIQUE or PRIMARY KEY.

5. CHECK : disallows values that do not satisfy the logical expression of the constrain

**41.What is Referential Integrity and Referential integrity constraint ?**

Ans: Referential Integrity : Referential integrity defines the relationships among different columns and tables in a relational database. It’s called referential integrity because the values in one column or set of columns refer to or must match the values in a related column or set of columns.

A referential integrity constraint requires that for each row of a table, the value in the foreign key matches a value in a parent key.

**42.What is groups by and having clause? Explain with example**

Ans: Group by clause tells oracle to group rows based on distinct values that exists for specified columns. The group by clause creates a data set , containing several sets of records grouped together based on condition.

Having Clause: Having clause can be used with GROUP BY clause. Having imposes a condition on the group by clause which further filters the group created by the GROUP BY clause. Select ename,empno From Empl Group by empno having empno > 10;

**43.What are LOCKS? What are types of different types of Lock?**

Ans: Locks are mechanisms intended to prevent destructive interaction between users accessing ORACLE data. ORACLE uses locks to control concurrent access to data. Locks are used to achieve two important database goals : Consistency : Ensures that the data a user is viewing or changing is not changed (by other users) until the user is finished with the data. Integrity : Ensures that the database's data and structures reflect all changes made to them in the correct sequence.

Types of Locks :

1. Data Locks (DML)

2. Dictionary Locks (DDL)

3. Internal Locks and Latches

4. Distributed Locks

5. Parallel Cache Management Locks

Data Locks : Row Level and Table Level Row Level : Exclusive Locks Table Level

1. Row Share Table Locks (RS)

2. Row Exclusive Table Locks (RX)

3. Share Table Locks (S)

4. Share Row Exclusive Table Locks (SRX)

5. Exclusive Table Locks (X)

Dictionary Locks :

1. Exclusive DDL Locks

2. Share DDL Locks

3. Breakable Parse Locks Restrictiveness of Locks : In general, two levels of locking can be used in a multi-user database: • Exclusive Locks : An exclusive lock prohibits the sharing of the associated resource. The first transaction to exclusively lock a resource is the only transaction that can alter the resource until the exclusive lock is released. • Share Locks : A share lock allows the associated resource to be shared, depending on the operations involved (e.g., several users can read the same data at the same time). Several transactions can acquire share locks on the same resource. Share locks allow a higher degree of data concurrency than exclusive locks.

**44.Difference between unique key,primary key and foreign key ?**

Ans: Foreign key: A foreign key is one or more columns whose values are based on the primary or candidate key values from another table. Unique key can be null; Primary key cannot be null.

**45.What are Advantages of TRUNCATE Command over DELETE/DROP TABLE Command ?**

Ans: The TRUNCATE command provides a fast, efficient method for deleting all rows from a table or cluster.

1. A TRUNCATE statement does not generate any rollback information and it commits immediately; it is a DDL statement and cannot be rolled back.

2. A TRUNCATE statement does not affect any structures associated with the table being truncated (constraints and triggers) or authorizations (grants).

3. A TRUNCATE statement also specifies whether space currently allocated for the table is returned to the containing tablespace after truncation.

4. As a TRUNCATE statement deletes rows from a table (or clustered table), triggers associated with the table are not fired.

5. Also, a TRUNCATE statement does not generate any audit information corresponding to DELETE statements if auditing is enabled. Instead, a single audit record is generated for the TRUNCATE statement being issued.

**46.What are steps involved in Execution of SQL statements?**

Ans: STEPS IN EXECUTION OF SQL STATEMENTS :

1. Create a cursor

2. Parse the statement

3. Describe Results

4. Defining outputs

5. Bind any variables

6. Execute the statement

7. Fetch rows of a query result

**47.What do you mean by Parsing?**

Ans: Parsing : Parsing is the process of: 1. Translating a SQL statement, verifying it to be a valid statement 2. Performing data dictionary lookups to check table and column definitions 3. Acquiring parse locks on required objects so that their definitions do not change during the statement's parsing 4. Checking privileges to access referenced schema objects 5. Determining the execution plan to be used when executing the statement 6. Loading it into a shared SQL area 7. For distributed statements, routing all or part of the statement to remote nodes that contain referenced data

**48.What is a HINT and what are types HINT?**

Ans: Hints are suggestions that you give the optimizer for optimizing a SQL statement. Hints allow you to make decisions usually made by the optimizer.

TYPES OF HINTS :

ALL\_ROWS : The ALL\_ROWS hint explicitly chooses the cost-based approach to optimize a statement block with a goal of best throughput.

FIRST\_ROWS : The FIRST\_ROWS hint explicitly chooses the cost-based approach to optimize a statement block with a goal of best response time.

FULL : The FULL hint explicitly chooses a full table scan for the specified table.

ROWID : The ROWID hint explicitly chooses a table scan by ROWID for the specified table.

CLUSTER : The CLUSTER hint explicitly chooses a cluster scan to access the specified table.

HASH : The HASH hint explicitly chooses a hash scan to access the specified table.

INDEX : The INDEX hint explicitly chooses an index scan for the specified table.

AND\_EQUAL: The AND\_EQUAL hint explicitly chooses an execution plan that uses an access path that merges the scans on several single-column indexes. (You can specify multiple indexes through this hint) INDEX\_ASC: The INDEX\_ASC hint explicitly chooses an index scan for the specified table. If the statement uses an index range scan, ORACLE scans the index entries in ascending order of their indexed values.

INDEX\_DESC: The INDEX\_DESC hint explicitly chooses an index scan for the specified table. If the statement uses an index range scan, ORACLE scans the index entries in descending order of their indexed values.

ORDERED : The ORDERED hint causes ORACLE to join tables in the order in which they appear in the FROM clause.

USE\_NL : The USE\_NL hint causes ORACLE to join each specified table to another row source with a nested loops join using the specified table as the inner table.

USE\_MERGE : The USE\_MERGE hint causes ORACLE to join each specified table with another row source with a sort-merge join.

**49.What do u mean by EXCEPTION\_INIT Pragma ?**

Ans: EXCEPTION\_INIT Pragma : To handle unnamed internal exceptions, you must use the OTHERS handler or the pragma EXCEPTION\_INIT. A "pragma" is a compiler directive, which can be thought of as a parenthetical remark to the compiler. Pragmas (also called "pseudoinstructions") are processed at compile time, not at run time. They do not affect the meaning of a program; they simply convey information to the compiler. The predefined pragma EXCEPTION\_INIT tells the PL/SQL compiler to associate an exception name with an Oracle error number. That allows you to refer to any internal exception by name and to write a specific handler for it. You code the pragma EXCEPTION\_INIT in the declarative part of a PL/SQL block, subprogram, or package

using the syntax PRAGMA EXCEPTION\_INIT(exception\_name, Oracle\_error\_number); where "exception\_name" is the name of a previously declared exception. For internal exceptions, SQLCODE returns the number of the associated Oracle error. The number that SQLCODE returns is negative unless the Oracle error is "no data found," in which case SQLCODE returns +100. SQLERRM returns the message associated with the Oracle error that occurred. The message begins with the Oracle error code. For user-defined exceptions, SQLCODE returns +1 and SQLERRM returns the message “User-Defined Exception” unless you used the pragma EXCEPTION\_INIT to associate the exception name with an Oracle error number, in which case SQLCODE returns that error number and SQLERRM returns the corresponding error message. The maximum length of an Oracle error message is 512 characters including the error code, nested messages, and message inserts such as table and column names.

What do u mean by JSP query?

Ans: JSP Query : The JSP Query is a standard query for number to words conversion, used especially for converting amount in number into equivalent amount in words. The query is as follows : Select to\_char ( to\_date ( ‘&no’, ‘J’ ), ‘JSP’ ) words from dual; For eg : Select to\_char ( to\_date ( '23949','j' ), 'JSP' ) "words" from dual; The value that can pass to &no cannot exceed 7 digits.

**50.Describe Oracle database’s physical and logical structure ?**

Ans: Physical: Data files, Redo Log files, Control file. Logical : Tables, Views, Tablespaces, etc.

**51.What is “Check Constraints” and “with check options” and “Default Specification”?**

Ans: CHECK Integrity Constraints: A CHECK integrity constraint on a column or a set of columns requires that a specified condition be true or unknown (ie. Not false) for every row of the table. If a DML statement is issued so that the condition of the CHECK constraint evaluates to false, the statement is rolled back. With check Option: With Check option restricts inserts and updates performed through the view to prevent them from creating rows that the view cannot itself select .based on where clause of the create view statement. For eg: Create or replace view Women As select name from Employee Where Sex= ‘Female’ With Check Option; Default Specification It supplies a default value if column value is not specified on INSERT It can contain literals (constants) and SQL functions, USER, SYSDATE, sequence It cannot include references to any columns.

**52.What is the maximum no. Of columns a table can have ?**

Ans: 254(Oracle)

**53.Can a trigger written for a view ?**

Ans: No

Consider a sequence whose currval is 1 and gets incremented by 1 by using the nextval reference we get the next number 2. Suppose at this point we issue an rollback and again issue a nextval. What will the output be ?

Ans: 3

**54.Can you create index on view ?**

Ans: No

**55.What is the difference between alias and synonym ?**

Ans: Alias is temporary and used with one query. Synonym is permanent and not used as alias.

What’s the length of SQL integer ?

Ans: 32 bit length

**56.What is tkprof and how is it used?**

Ans: The tkprof tool is a tuning tool used to determine cpu and execution times for SQL statements. You use it by first setting timed\_statistics to true in the initialization file and then turning on tracing for either the entire database via the sql\_trace parameter or for the session using the ALTER SESSION command. Once the trace file is generated you run the tkprof tool against the trace file and then look at the output from the tkprof tool . This can also be used to generate explain plan output.

**57.What is explain plan and how is it used?**

Ans: The EXPLAIN PLAN command is a tool to tune SQL statements. To use it you must have an explain\_table generated in the user you are running the explain plan for. This is created using the utlxplan.sql script. Once the explain plan table exists you run the explain plan command giving as its argument the SQL statement to be explained. The explain\_plan table is then queried to see the execution plan of the statement. Explain plans can also be run using tkprof.

**58.What is The Dynamic Performance Tables?**

Ans: Throughout its operation, ORACLE maintains a set of "virtual" tables that record current database activity. These tables are called Dynamic performance tables. Because dynamic performance tables are not true tables, they should not be accessed by most users. However, database administrators can query these tables and can create views on the tables and grant access to those views to other users. The dynamic performance tables are owned by SYS and their names all begin with V\_$. Views are created on these tables, and then synonyms are created for the views. The synonym names begin with V$.

**59.What is Savepoint ?**

Ans: Savepoints are intermediate markers that can be declared in long transactions that contain many SQL statements. By using savepoints, you can arbitrarily mark your work at any point within a long transaction. This allows you the option of later rolling back all work performed from the current point in the transaction to a declared savepoint within the transaction.

60.What is Deadlocks?

Ans: A deadlock is a situation that can occur in multi-user systems that causes some number of transactions to be unable to continue work. A deadlock can occur when two or more users are waiting for data locked by each other. It typically happens when each of two or more users are waiting to access a resource that another user has already locked. This creates a deadlock situation because each user is waiting for resources held by the other user. Eg Transaction 1 Time Point Transaction 2 UPDATE emp 1 UPDATE emp SET sal = sal\*1.1 SET sal = 1342 WHERE empno = 1000; WHERE empno = 2000; UPDATE emp 2 UPDATE emp SET sal = sal\*1.1 SET sal = 1342 WHERE empno = 2000; WHERE empno = 1000; ORA-00060 3 deadlock detected while waiting for resource

**61.What is Privilege ?**

Ans: A privilege is a right to execute a particular type of SQL statement or to access another user's object. Types of privileges : • system privileges • object privileges System Privileges : System privileges allow users to perform a particular systemwide action, or to perform a particular action on a particular type of object. E.g. Create Tablespace, Delete the row of any table, etc. Object Privileges : Object privileges allow users to perform a particular action on a specific object. E.g. Delete row of specific table, etc. Roles : Roles are named groups of related privileges that are granted to users or other roles. Advantages of Roles : 1. Reduced granting of privileges 2. Dynamic privilege management (Changing of privileges) 3. Selective availability of privileges (Enalbling/Disabling roles) 4. Application awareness (Enalbling/Disabling of roles by application)

**62.What is Two Phase Commit ?**

Ans: Two Phase Commit is a mechanism wherein ORACLE automatically controls and monitors the commit or rollback of a distributed transaction and maintains the integrity of the global database. The Phases of the Two-Phase Commit Mechanism :  
• Prepare phase : The global co-ordinator (initiating node) asks participants to prepare (to promise to commit or rollback the transaction, even if there is a failure).  
• Commit phase : If all participants respond to the co-ordinator that they are prepared, the co-ordinator asks all nodes to commit the transaction; if all participants cannot prepare, the co-ordinator asks all nodes to roll back the transaction.

**63.Explain about snapshots in detail?**

Ans: Snapshots are read-only copies of a master table (or multiple tables) located on a remote node. A snapshot can be queried, but not updated; only the master table can be updated. A snapshot is periodically refreshed to reflect changes made to the master table. A snapshot is a full copy of a table or a subset of a table that reflects a recent state of the master table. A snapshot is defined by a distributed query that references one or more master tables, view, or other snapshots. Simple vs. Complex Snapshots : Each row in a simple snapshot is based on a single row in a single remote table. Therefore, a simple snapshot's defining query has no GROUP BY or CONNECT BY clauses, or subqueries, joins, or set operations. If a snapshot's defining query contains any of these clauses or operations, it is referred to as a complex snapshot. Internals of Snapshot Creation: When a snapshot is created, several operations are performed internally by ORACLE: • ORACLE (at the snapshot node) creates a table to store the rows retrieved by the snapshot's defining query; this is the snapshot's base table. • ORACLE creates a read-only view on the SNAP$ table (base table) for queries issued against the snapshot. • ORACLE creates a second local view on the remote master table. It uses this view when it refreshes the snapshot. • Additionally, if the snapshot is a simple snapshot, ORACLE creates an index on the SNAP$ table. All of these internal objects are created in the schema of the snapshot. Do not alter, change data in, or delete these objects manually.

**64.What is Ref Cursor?**

Ans: A REF CURSOR is basically a data type. A variable created based on such a data type is generally called a cursor variable. A cursor variable can be associated with different queries at run-time. The primary advantage of using cursor variables is their capability to pass result sets between sub programs (like stored procedures, functions, packages etc.).

**65.What is row chaining, how does it happen?**

Ans: Row chaining occurs when a VARCHAR2 value is updated and the length of the new value is longer than the old value and won’t fit in the remaining block space. This results in the row chaining to another block. It can be reduced by setting the storage parameters on the table to appropriate values. It can be corrected by export and import of the effected table.

**66.Describe hit ratio as it pertains to the database buffers. What is the difference between instantaneous and cumulative hit ratio and which should be used for tuning?**

Ans: The hit ratio is a measure of how many times the database was able to read a value from the buffers verses how many times it had to re-read a data value from the disks. A value greater than 80-90% is good, less could indicate problems. If you simply take the ratio of existing parameters this will be a cumulative value since the database started. If you do a comparison between pairs of readings based on some arbitrary time span, this is the instantaneous ratio for that time span. An instantaneous reading gives more valuable data since it will tell you what your instance is doing for the time it was generated over.

**67.What is a Cartesian product?**

Ans: A Cartesian product is the result of an unrestricted join of two or more tables. The result set of a three table Cartesian product will have x \* y \* z number of rows where x, y, z correspond to the number of rows in each table involved in the join.

**68.What is a mutating table error and how can you get around it?**

Ans: This happens with triggers. It occurs because the trigger is trying to update a row it is currently using. The usual fix involves either use of views or temporary tables so the database is selecting from one while updating the other.

**69.What are SQLCODE and SQLERRM and why are they important for PL/SQL developers?**

Ans: SQLCODE returns the value of the error number for the last error encountered. The SQLERRM returns the actual error message for the last error encountered. They can be used in exception handling to report, or, store in an error log table, the error that occurred in the code. These are especially useful for the WHEN OTHERS exception.

**70.What are Transactional Triggers ? Give the uses of Transational Trigger ?**

Ans: Transactional Triggers fire in response to transaction processing events. These events represent points during application processing at which Oracle Forms needs to interact with the data source. Examples of such events include updating records, rolling back to savepoints, and committing transactions. By default, Oracle Forms assumes that the data source is an ORACLE database, and issues the appropriate SQL statements to optimize transaction processing accordingly. However, by defining

transactional triggers and user exits, you can build a form to interact with virtually any data source, including even non-relational databases and flat files. Calling User Exits When you define transactional triggers to interact with a non-ORACLE data source, you will usually include a call to a user exit in the appropriate triggers. The code in your user exit interacts with the non-ORACLE data source. Once the user exit has performed the appropriate function (as indicated by the trigger from which it was called), it returns control to Oracle Forms for subsequent processing. For example, a user exit called from an On-Fetch trigger might be responsible for retrieving the appropriate number of records from the non-ORACLE data source. Once the records are retrieved, Oracle Forms takes over the display and management of those records in the form interface, just as it would if the records had been fetched from an ORACLE database. Uses for Transactional Triggers • Transactional triggers, except for the commit triggers, are primarily intended to access certain data sources other than Oracle. • The logon and logoff transactional triggers can also be used with Oracle databases to change connections at run time.

**71.What is Autonomous transaction ? Where do we use it?**

Ans: In Oracle's database products, an autonomous transaction is an independent transaction that is initiated by another transaction. It must contain at least one Structured Query Language (SQL) statement. Autonomous transactions allow a single transaction to be subdivided into multiple commit/rollback transactions, each of which will be tracked for auditing purposes. When an autonomous transaction is called, the original transaction (calling transaction) is temporarily suspended. The autonomous transaction must commit or roll back before it returns control to the calling transaction. Once changes have been made by an autonomous transaction, those changes are visible to other transactions in the database. Autonomous transactions can be nested. That is, an autonomous transaction can operate as a calling transaction, initializing other autonomous transactions within itself.

**72.What is a package, procedure and function?**

Ans: Package : A package is a group of related program objects stored together as a unit in the database. A package is an encapsulated collection of related program objects stored together in the database. Program objects are: procedures, functions, variables, constants, cursors, exceptions. Procedure/Function : A procedure or function is a set of SQL and PL/SQL statements grouped together as an executable unit to perform a specific task. The main difference between a procedure and function is functions return a single variable by value whereas procedures do not return any variable by value. Rather they return multiple variables by passing variables by reference through their OUT parameter.

**73.What do u mean by overloading?**

Ans: Function Overloading : Packages allow you to overload procedures or functions. Overloading a procedure means creating multiple procedures with the same name in the same package, each taking arguments of different number or datatype.

**74.What are the constructs of a procedure, function or a package ?**

Ans: The constructs of a procedure, function or a package are : • variables and constants • cursors • exceptions

**75.What are cascading triggers? What is the maximum no of cascading triggers at a time?**

Ans: When a statement in a trigger body causes another trigger to be fired, the triggers are said to be cascading. Max = 32

**76.What is the significance of the & and && operators in PL/SQL ?**

Ans: The & operator means that the PL SQL block requires user input for a variable. The && operator means that the value of this variable should be the same as inputted by the user previously for this same variable.

**77.If all the values from a cursor have been fetched and another fetch is issued, the output will be?**

Ans: Last Record

**78.What is a forward declaration ? What is its use ?**

Ans: PL/SQL requires that you declare an identifier before using it. Therefore, you must declare a subprogram before calling it. This declaration at the start of a subprogram is called forward declaration. A forward declaration consists of a subprogram specification terminated by a semicolon.

**79.Any three PL/SQL Exceptions?**

Ans: Too\_many\_rows, No\_Data\_Found, Value\_Error, Zero\_Error, Others

**80.Describe the use of %ROWTYPE and %TYPE in PL/SQL**

Ans: %ROWTYPE allows you to associate a variable with an entire table row. The %TYPE associates a variable with a single column type.

**81.How can you call a PL/SQL procedure from SQL?**

Ans: By use of the EXECUTE (short form EXEC) command.

**82.What are the various types of Exceptions ?**

Ans: User defined and Predefined Exceptions.

**83.What is RAISE\_APPLICATION\_ERROR ?**

Ans: DBMS\_STANDARD provides a procedure named raise\_application\_error, which lets you issue user-defined error messages. That way, you can report errors to an application and avoid returning unhandled exceptions. The calling syntax is : raise\_application\_error(error\_number, error\_message); where error\_number is a negative integer in the range -20000...-20999 and error\_message is a character string up to 2048 bytes in length. An application can call raise\_application\_error only from an executing stored subprogram. When called, raise\_application\_error ends the subprogram, rolls back any database changes it made, and returns a user-defined error number and message to the application. The error number and message can be trapped like any ORACLE error. The calling application gets a PL/SQL exception, which it can process using the error-reporting functions SQLCODE and SQLERRM in an OTHERS handler. • The statement Raise\_Application\_Error can be called either from a procedure body or from an exception handler. • Irrespective of whether an error occurred or not, a raise\_application\_error command always raises an exception in the calling program (eg a forms trigger). If an exception handler is not written in that forms trigger, then a forms error occurs.

[**Top 65 PL/SQL Interview Questions**](http://career.guru99.com/top-50-plsql-interview-questions/)

1. **What is PL SQL ?**

**PL SQL is a procedural language which has interactive SQL, as well as procedural** [**programming**](http://career.guru99.com/category/programming-2/) **language constructs like conditional branching and iteration.**

1. **Differentiate between % ROWTYPE and TYPE RECORD.**

**% ROWTYPE is used when a query returns an entire row of a table or view.**

**TYPE RECORD, on the other hand, is used when a query returns column of different tables or views.**

**Eg.  TYPE r\_emp is RECORD (sno smp.smpno%type,sname smp sname %type)**

**e\_rec smp ROWTYPE**

**Cursor c1 is select smpno,dept from smp;**

**e\_rec c1 %ROWTYPE**

1. **Explain uses of cursor.**

**Cursor is a named private area in SQL from which information can be accessed. They are required to process each row individually for queries which return multiple rows.**

1. **Show code of a cursor for loop.**

**Cursor declares %ROWTYPE as loop index implicitly. It then opens a cursor, gets rows of values from the active set in fields of the record and shuts when all records are processed.**

**Eg.  FOR smp\_rec IN C1 LOOP**

**totalsal=totalsal+smp\_recsal;**

**ENDLOOP;**

1. **Explain the uses of** [**database**](http://career.guru99.com/category/database/) **trigger.**

**A PL/SQL program unit associated with a particular database table is called a database trigger. It is used for :**

**1)Audit data modifications.**

**2)Log events transparently.**

**3)Enforce complex business rules.**

**4)Maintain replica tables**

**5)Derive column values**

**6)Implement Complex security authorizations**

1. **What are the two types of exceptions.**

**Error handling part of PL/SQL block is called Exception. They have two types : user\_defined and predefined.**

1. **Show some predefined exceptions.**

**DUP\_VAL\_ON\_INDEX**

**ZERO\_DIVIDE**

**NO\_DATA\_FOUND**

**TOO\_MANY\_ROWS**

**CURSOR\_ALREADY\_OPEN**

**INVALID\_NUMBER**

**INVALID\_CURSOR**

**PROGRAM\_ERROR**

**TIMEOUT \_ON\_RESOURCE**

**STORAGE\_ERROR**

**LOGON\_DENIED**

**VALUE\_ERROR**

**etc.**

1. **Explain Raise\_application\_error.**

**It is a procedure of package DBMS\_STANDARD that allows issuing of user\_defined error messages from database trigger or stored sub-program.**

**9.Show how functions and procedures are called in a PL SQL block.**

**Function is called as a part of an expression.**

**total:=calculate\_sal(‘b644’)**

**Procedure is called  as a statement in PL/SQL.**

**calculate\_bonus(‘b644’);**

1. **Explain two virtual tables available at the time of database trigger execution.**

**Table columns are referred as THEN.column\_name and NOW.column\_name.**

**For INSERT related triggers, NOW.column\_name values are available only.**

**For DELETE related triggers, THEN.column\_name values are available only.**

**For UPDATE related triggers, both Table columns are available.**

1. **What are the rules to be applied to NULLs whilst doing comparisons?**

**1) NULL is never TRUE or FALSE**

**2) NULL cannot be equal or unequal to other values**

**3) If a value in an expression is NULL, then the expression itself evaluates to NULL except for concatenation operator (||)**

1. **How is a process of PL SQL compiled?**

**Compilation process includes syntax check, bind and p-code generation processes.**

**Syntax checking checks the PL SQL codes for compilation errors. When all errors are corrected, a storage address is assigned to the variables that hold data. It is called Binding. P-code is a list of instructions for the PL SQL engine. P-code is stored in the database for named blocks and is used the next time it is executed.**

1. **Differentiate between Syntax and runtime errors.**

**A syntax error can be easily detected by a PL/SQL compiler. For eg, incorrect spelling.**

**A runtime error is handled with the help of exception-handling section in an PL/SQL block. For eg, SELECT INTO statement, which does not return any rows.**

1. **Explain Commit, Rollback and Savepoint.**

**For a COMMIT statement, the following is true:**

* **Other users can see the data changes made by the transaction.**
* **The locks acquired by the transaction are released.**
* **The work done by the transaction becomes permanent.**

**A ROLLBACK statement gets issued when the transaction ends, and the following is true.**

* **The work done in a transition is undone as if it was never issued.**
* **All locks acquired by transaction are released.**

**It undoes all the work done by the user in a transaction. With SAVEPOINT, only part of transaction can be undone.**

1. **Define Implicit and Explicit Cursors.**

**A cursor is implicit by default. The user cannot control or process the information in this cursor.**

**If a query returns multiple rows of data, the program defines an explicit cursor. This allows the application to process each row sequentially as the cursor returns it.**

1. **Explain mutating table error.**

**It occurs when a trigger tries to update a row that it is currently using. It is fixed by using views or temporary tables, so database selects one and updates the other.**

1. **When is a declare statement required?**

**DECLARE statement is used by PL SQL anonymous blocks such as with stand alone, non-stored procedures. If it is used, it must come first in a stand alone file.**

1. **How many triggers can be applied to a table?**

**A maximum of 12 triggers can be applied to one table.**

1. **What is the importance of SQLCODE and SQLERRM?**

**SQLCODE returns the value of the number of error for the last encountered error whereas SQLERRM returns the message for the last error.**

1. **If a cursor is open, how can we find in a PL SQL Block?**

**the %ISOPEN cursor status variable can be used.**

1. **Show the two PL/SQL cursor exceptions.**

**Cursor\_Already\_Open**

**Invaid\_cursor**

1. **What operators deal with NULL?**

**NVL converts NULL to another specified value.**

**var:=NVL(var2,’Hi’);**

**IS NULL and IS NOT NULL can be used to check specifically to see whether the value of a variable is NULL or not.**

1. **Does SQL\*Plus also have a PL/SQL Engine?**

**No, SQL\*Plus does not have a PL/SQL Engine embedded in it. Thus, all PL/SQL code is sent directly to database engine. It is much more efficient as each statement is not individually stripped off.**

1. **What packages are available to PL SQL developers?**

**DBMS\_ series of packages, such as, DBMS\_PIPE, DBMS\_DDL, DBMS\_LOCK, DBMS\_ALERT, DBMS\_OUTPUT, DBMS\_JOB, DBMS\_UTILITY, DBMS\_SQL, DBMS\_TRANSACTION, UTL\_FILE.**

1. **Explain 3 basic parts of a trigger.**

* **A triggering statement or event.**
* **A restriction**
* **An action**

1. **What are character functions?**

**INITCAP, UPPER, SUBSTR, LOWER and LENGTH are all character functions. Group functions give results based on groups of rows, as opposed to individual rows. They are MAX, MIN, AVG, COUNT and SUM.**

1. **Explain TTITLE and BTITLE.**

**TTITLE and BTITLE commands that control report headers and footers.**

1. **Show the cursor attributes of PL/SQL.**

**%ISOPEN : Checks if the cursor is open or not**

**%ROWCOUNT : The number of rows that are updated, deleted or fetched.**

**%FOUND : Checks if the cursor has fetched any row. It is true if rows are fetched**

**%NOT FOUND : Checks if the cursor has fetched any row. It is True if rows are not fetched.**

1. **What is an Intersect?**

**Intersect is the product of two tables and it lists only matching rows.**

1. **What are sequences?**

**Sequences are used to generate sequence numbers without an overhead of locking. Its drawback is that the sequence number is lost if the transaction is rolled back.**

1. **How would you reference column values BEFORE and AFTER you have inserted and deleted triggers?**

**Using the keyword “new.column name”, the triggers can reference column values by new collection. By using the keyword “old.column name”, they can reference column vaues by old collection.**

1. **What are the uses of SYSDATE and USER keywords?**

**SYSDATE refers to the current** [**server**](http://career.guru99.com/category/server/) **system date. It is a pseudo column. USER is also a pseudo column but refers to current user logged onto the session. They are used to monitor changes happening in the table.**

1. **How does ROWID help in running a query faster?**

**ROWID is the logical address of a row, it is not a physical column. It composes of data block number, file number and row number in the data block. Thus, I/O time gets minimized retrieving the row, and results in a faster query.**

1. **What are database links used for?**

**Database links are created in order to form communication between various databases, or different environments like test, development and production. The database links are read-only to access other information as well.**

1. **What does fetching a cursor do?**

**Fetching a cursor reads Result Set row by row.**

1. **What does closing a cursor do?**

**Closing a cursor clears the private SQL area as well as de-allocates memory**

1. **Explain the uses of Control File.**

**It is a binary file. It records the structure of the database. It includes locations of several log files, names and timestamps. They can be stored in different locations to help in retrieval of information if one file gets corrupted.**

1. **Explain Consistency**

**Consistency shows that data will not be reflected to other users until the data is commit, so that consistency is maintained.**

1. **Differ between Anonymous blocks and sub-programs.**

**Anonymous blocks are unnamed blocks that are not stored anywhere whilst sub-programs are compiled and stored in database. They are compiled at runtime.**

1. **Differ between DECODE and CASE.**

**DECODE and CASE statements are very similar, but CASE is extended version of DECODE. DECODE does not allow Decision making statements in its place.**

**select decode(totalsal=12000,’high’,10000,’medium’) as decode\_tesr from smp where smpno in (10,12,14,16);**

**This statement returns an error.**

**CASE is directly used in PL SQL, but DECODE is used in PL SQL through SQL only.**

1. **Explain autonomous transaction.**

**An autonomous transaction is an independent transaction of the main or parent transaction. It is not nested if it is started by another transaction.**

**There are several situations to use autonomous transactions like event logging and auditing.**

1. **Differentiate between SGA and PGA.**

**SGA stands for System Global Area whereas PGA stands for Program or Process Global Area. PGA is only allocated 10% RAM size, but SGA is given 40% RAM size.**

1. **What is the location of Pre\_defined\_functions.**

**They are stored in the standard package called “Functions, Procedures and Packages”**

1. **Explain polymorphism in PL SQL.**

**Polymorphism is a feature of OOP. It is the ability to create a variable, an object or function with multiple forms. PL/SQL supports Polymorphism in the form of program unit overloading inside a member function or package..Unambiguous logic must be avoided whilst overloading is being done.**

1. **What are the uses of MERGE?**

**MERGE is used to combine multiple DML statements into one.**

**Syntax : merge into tablename**

**using(query)**

**on(join condition)**

**when not matched then**

**[insert/update/delete] command**

**when matched then**

**[insert/update/delete] command**

1. **Can 2 queries be executed simultaneously in a Distributed Database System?**

**Yes, they can be executed simultaneously. One query is always independent of the second query in a distributed database system based on the 2 phase commit.**

1. **Explain Raise\_application\_error.**

**It is a procedure of the package DBMS\_STANDARD that allow issuing a user\_defined error messages from the database trigger or stored sub-program.**

1. **What is out parameter used for eventhough return statement can also be used in pl/sql?**

**Out parameters allows more than one value in the calling program. Out parameter is not recommended in functions. Procedures can be used instead of functions if multiple values are required. Thus, these procedures are used to execute Out parameters.**

1. **How would you convert date into Julian date format?**

**We can use the J format string :**

**SQL > select to\_char(to\_date(‘29-Mar-2013’,’dd-mon-yyyy’),’J’) as julian from dual;**

**JULIAN**

1. **Explain SPOOL**

**Spool command can print the output of sql statements in a file.**

**spool/tmp/sql\_outtxt**

**select smp\_name, smp\_id from smp where dept=’accounts’;**

**spool off;**

1. **Mention what PL/SQL package consists of?**

**A PL/SQL package consists of**

* **PL/SQL table and record TYPE statements**
* **Procedures and Functions**
* **Cursors**
* **Variables ( tables, scalars, records, etc.) and constants**
* **Exception names and pragmas for relating an error number with an exception**
* **Cursors**

1. **Mention what are the benefits of PL/SQL packages?**

**It provides several benefits like**

* **Enforced Information Hiding: It offers the liberty to choose whether to keep data private or public**
* **Top-down design: You can design the interface to the code hidden in the package before you actually implemented the modules themselves**
* **Object persistence: Objects declared in a package specification behaves like a global data for all PL/SQL objects in the application. You can modify the package in one module and then reference those changes to another module**
* **Object oriented design: The package gives developers strong hold over how the modules and data structures inside the package can be used**
* **Guaranteeing transaction integrity: It provides a level of transaction integrity**
* **Performance improvement: The RDBMS automatically tracks the validity of all program objects stored in the database and enhance the performance of packages.**

1. **Mention what are different methods to trace the PL/SQL code?**

**Tracing code is a crucial technique to measure the code performance during the runtime. Different methods for tracing includes**

* **DBMS\_APPLICATION\_INFO**
* **DBMS\_TRACE**
* **DBMS\_SESSION and DBMS\_MONITOR**
* **trcsess and tkproof utilities**

1. **Mention what does the hierarchical profiler does?**

**The hierarchical profiler could profile the calls made in PL/SQL, apart from filling the gap between the loopholes and the expectations of performance tracing. The efficiencies of the hierarchical profiler includes**

* **Distinct reporting for SQL and PL/SQL time consumption**
* **Reports count of distinct sub-programs calls made in the PL/SQL, and the time spent with each subprogram call**
* **Multiple interactive analytics reports in HTML format by using the command line utility**
* **More effective than conventional profiler and other tracing utilities**

1. **Mention what does PLV msg allows you to do?**

**The PLV msg enables you to**

* **Assign individual text message to specified row in the PL/SQL table**
* **It retrieves the message text by number**
* **It substitutes automatically your own messages for standard Oracle error messages with restrict toggle**
* **Batch load message numbers and text from a database table directly PLV msg PL/SQL table**

1. **Mention what is the PLV (PL/Vision) package offers?**

* **Null substitution value**
* **Set of assertion routines**
* **Miscellaneous utilities**
* **Set of constants used throughout PL vision**
* **Pre-defined datatypes**

* **Mention what is the use of PLVprs and PLVprsps?**

* **PLVprs: It is an extension for string parsing for PL/SQL, and it is the lowest level of string parsing functionality**
* **PLVprsps: It is the highest level package to parse PL/SQL source code into separate atomics. It relies on other parsing packages to get work done.**

1. **Explain how you can copy a file to file content and file to PL/SQL table in advance PL/SQL?**

**With a single program call – “fcopy procedure”, you can copy the complete contents of one file into another file.  While to copy the contents of a file directly into a PL/SQL table, you can use the program “file2pstab”.**

1. **Explain how exception handling is done in advance PL/SQL?**

**For exception handling PL/SQl provides an effective plugin PLVexc.  PLVexc supports four different exception handling actions.**

* **Continue processing**
* **Record and then continue**
* **Halt processing**
* **Record and then halt processing**

**For those exceptions that re-occurs you can use the RAISE statement.**

1. **Mention what problem one might face while writing log information to a data-base table in PL/SQL?**

**While writing log information to a database table, the problem you face is that the information is only available only once the new rows are committed to the database.  This might be a problem as such PLVlog is usually deployed to track errors and in many such instances the current transaction would fail or otherwise needed a rollback.**

1. **Mention what is the function that is used to transfer a PL/SQL table log to a database table?**

**To transfer a PL/SQL table log a database log table function “PROCEDURE ps2db” is used.**

1. **When you have to use a default “rollback to” savepoint of PLVlog?**

**The default “rollback to” savepoint of PLVlog is used when the users has turned on the rollback activity and has not provided an alternative savepoint in the call to put\_line.  The default savepoint is initialized to the c none constant.**

1. **Why PLVtab is considered as the easiest way to access the PL/SQL table?**

**The PL/SQL table are the closest to arrays in PL/SQL, and in order to access this table you have to first declare a table type, and then you have to declare PL/SQL table itself. But by using PLVtab, you can avoid defining your own PL/SQL table type and make PL/SQL data-table access easy.**

1. **Mention what does PLVtab enables you to do when you showthe contents of PL/SQL tables?**

**PLVtab enables you to do following things when you show the contents of PL/SQL tables**

* **Display or suppress a header for the table**
* **Display or suppress the row numbers for the table values**
* **Show a prefix before each row of the table**

1. **Explain how can you save or place your msg in a table?**

**To save msg in a table, you can do it in two ways**

* **Load individual messages with calls to the add\_text procedure**
* **Load sets of messages from a database table with the load\_from\_dbms procedure**

1. **Mention what is the use of function “module procedure” in PL/SQL?**

**The “module procedure” enables to convert all the lines of code in a definite program unit with one procedure call.  There are three arguments for modules**

* **module\_in**
* **cor\_in**
* **Last\_module\_in**

1. **Mention what PLVcmt and PLVrb does in PL/SQL?**

**PL/Vision offers two packages that help you manage transaction processing in PL/SQL application. It is PLVcmt and PLVrb.**

* **PLVcmt: PLVcmt package wraps logic and complexity for dealing with commit processing**
* **PLVrb: It provides a programmatic interface to roll-back activity in PL/SQL**

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| Default**Re: PL/SQL interview questions for 4 years of experience**  :- **Technical Interview Round:-**  Tell me about yourself? What is a partition in Oracle? What is a trigger in SQL? What are the differences between a procedure and function in SQL? What is an Explain Plan? Write a SQL query to find second maximum salary in each department of a Company. Write a SQL query to delete all duplicate records in a table What is mutating table?  **Project Manager Interview Round:-** Tell me about yourself? Which technologies have you worked on in your previous companies? Would you like to work on Business Objects(BO)? Tell me the difference between Business Objects(BO) and Cognos?  **HR Discussion:-** Why did you want to change your current job? Why do you think should you be selected for this position? How much salary are you expecting?  **Some other Technical question:-** State the difference between implicit and explicit cursors.   How to avoid using cursors? What to use instead of cursor and in what cases to do so?   What is difference between stored procedures and application procedures,stored function and application function?   What is trigger,cursor,functions in pl-sql and we need sample programs about it?   What is Raise\_application\_error ?   What is pl/sql?what are the advantages of pl/sql?   Explain the usage of WHERE CURRENT OF clause in cursors?   **How we can create a table in PL/SQL block. Insert records into it??? Is it possible by some procedure or function?? Please give example...**  1) What is the starting "oracle error number"?  2) What is meant by forward declaration in functions?   **In a Distributed Database System Can we execute two queries simultaneously? Justify?**  Name the tables where characteristics of Package, procedure and functions are stored? |

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| Default**Re: PL/SQL interview questions for 4 years of experience**  As you want to get some interview question of PL / SQL, so here I am providing some interview question papers of Pl /SQL:  **PAPER: ORACLE PLACEMENT PAPER (SQL, PL/SQL)**  1. What does a COMMIT statement do to a CURSOR  a] Open the Cursor b] Fetch the Cursor c] Close the Cursor d] None of the above Ans : D  2. Which of the following is TRUE  1] Host variables are declared anywhere in the program 2] Host variables are declared in the DECLARE section a] Only 1 is TRUE b] Only 2 is TRUE c] Both 1 & 2are TRUE d] Both are FALSE Ans : B  3. Which of the following is NOT VALID is PL/SQL  a] Bool boolean; b] NUM1, NUM2 number; c] deptname dept.dname%type; d] date1 date := sysdate Ans : B  4. Declare fvar number := null; svar number := 5 Begin goto << fproc>> if fvar is null then << fproc>> svar := svar + 5 end if; End;  What will be the value of svar after the execution ? a] Error b] 10 c] 5 d] None of the above  Ans : A  5. Which of the following is not correct about an Exception ?  a] Raised automatically / Explicitly in response to an ORACLE\_ERROR b] An exception will be raised when an error occurs in that block c] Process terminates after completion of error sequence. d] A Procedure or Sequence of statements may be processed.  Ans : C  6. Which of the following is not correct about User\_Defined Exceptions ?  a] Must be declared b] Must be raised explicitly c] Raised automatically in response to an Oracle error d] None of the above  Ans : C  7. A Stored Procedure is a  a] Sequence of SQL or PL/SQL statements to perform specific function b] Stored in compiled form in the database c] Can be called from all client environments d] All of the above  Ans : D  8. Which of the following statement is false  a] Any procedure can raise an error and return an user message and error number b] Error number ranging from 20000 to 20999 are reserved for user defined messages c] Oracle checks Uniqueness of User defined errors d] Raise\_Application\_error is used for raising an user defined error.  Ans : C  9. Is it possible to open a cursor which is in a Package in another procedure ?  a] Yes b] No  Ans : A  10. Is it possible to use Transactional control statements in Database Triggers ?  a] Yes b] No  Ans : B  11. Is it possible to Enable or Disable a Database trigger ?  a] Yes b] No  Ans : A  12. PL/SQL supports datatype(s)  a] Scalar datatype b] Composite datatype c] All of the above d] None of the above  Ans C  13. Find the ODD data type out  a] VARCHAR2 b] RECORD c] BOOLEAN d] RAW  Ans : B  14. Which of the following is not correct about the "TABLE" data type ?  a] Can contain any no of columns b] Simulates a One-dimensional array of unlimited size c] Column datatype of any Scalar type d] None of the above  Ans : A  15. Find the ODD one out of the following  a] OPEN b] CLOSE c] INSERT d] FETCH  Ans C  16. Which of the following is not correct about Cursor ?  a] Cursor is a named Private SQL area b] Cursor holds temporary results c] Cursor is used for retrieving multiple rows d] SQL uses implicit Cursors to retrieve rows  Ans : B  18. Which of the following is NOT VALID in PL/SQL ?  a] Select ... into b] Update c] Create d] Delete  Ans : C  19. What is the Result of the following 'VIK'||NULL||'RAM' ?  a] Error b] VIK RAM c] VIKRAM d] NULL  Ans : C  20. Declare a number := 5; b number := null; c number := 10; Begin if a > b AND a < c then a := c \* a; end if; End; What will be the value of 'a' after execution ? a] 50 b] NULL c] 5 d] None of the above  Ans : C  21. Does the Database trigger will fire when the table is TRUNCATED ?  a] Yes b] No  Ans : B  22. SUBSTR(SQUARE ANS ALWAYS WORK HARD,14,6) will return  a] ALWAY b} S ALWA c] ALWAYS Ans : C  23. REPLACE('JACK AND JUE','J','BL') will return  a] JACK AND BLUE b] BLACK AND JACK c] BLACK AND BLUE d] None of the above  Ans : C  24. TRANSLATE('333SQD234','0123456789ABCDPQRST','01234 56789') will return  a] 333234 b] 333333 c] 234333 d] None of the above  Ans : A  25.. EMPNO ENAME SAL A822 RAMASWAMY 3500 A812 NARAYAN 5000 A973 UMESH 2850 A500 BALAJI 5750  Use these data for the following Questions  Select SAL from EMP E1 where 3 > ( Select count(\*) from Emp E2 where E1.SAL > E2.SAL ) will retrieve a] 3500,5000,2500 b] 5000,2850 c] 2850,5750 d] 5000,5750  Ans : A  26. Is it possible to modify a Data type of a column when column contains data ?  a] Yes b] No  Ans B  27. Which of the following is not correct about a View ?  a] To protect some of the columns of a table from other users b] Occupies data storage space c] To hide complexity of a query d] To hide complexity of a calculations  Ans : B  28. Which is not part of the Data Definition Language ?  a] CREATE b] ALTER c] ALTER SESSION  Ans : C  29. The Data Manipulation Language statements are  a] INSERT b] UPDATE c] SELECT d] All of the above  Ans : D  30. EMPNO ENAME SAL A822 RAMASWAMY 3500 A812 NARAYAN 5000 A973 UMESH A500 BALAJI 5750  Using the above data Select count(sal) from Emp will retrieve a] 1 b] 0 c] 3 d] None of the above  Ans : C  31. If an UNIQUE KEY constraint on DATE column is created, will it accept the rows that are inserted with SYSDATE ?  a] Will b] Won't  Ans : B   32. What are the different events in Triggers ?  a] Define, Create b] Drop, Comment c] Insert, Update, Delete d] All of the above  Ans : C  33. What built-in subprogram is used to manipulate images in image items ?  a] Zoom\_out b] Zoom\_in' c] Image\_zoom d] Zoom\_image  Ans : C  34. Can we pass RECORD GROUP between FORMS ?  a] Yes b] No  Ans : A  36. SHOW\_ALERT function returns  a] Boolean b] Number c] Character d] None of the above  Ans : B  37. What SYSTEM VARIABLE is used to refer DATABASE TIME ?  a] $$dbtime$$ b] $$time$$ c] $$datetime$$ d] None of the above  Ans : A  38. :SYSTEM.EFFECTIVE.DATE varaible is  a] Read only b] Read & Write c] Write only d] None of the above  Ans : C  39.. How can you CALL Reports from Forms4.0 ?  a] Run\_Report built\_in b] Call\_Report built\_in c] Run\_Product built\_in d] Call\_Product built\_in  Ans : C  85. When do you get a .PLL extension ? a] Save Library file b] Generate Library file c] Run Library file d] None of the above  Ans : A  40. What is built\_in Subprogram ?  a] Stored procedure & Function b] Collection of Subprogram c] Collection of Packages d] None of the above  Ans : D  41. GET\_BLOCK property is a  a] Restricted procedure b] Unrestricted procedure c] Library function d] None of the above  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Answered By StudyChaCha Member |

# Oracle interview questions and answers

In this post we will discuss some basic Oracle Interview questions and answers. Answers given are very precise. Please help me to improve the answer if you think so. I will be regularly updating this post.

**1. What is the difference between Procedure and Function ?**

Ans:-

a) Function  must return a value and procedure need not.

b) Function can be used in SQL with some restrictions. Procedure cannot be called directly from SQL.

**2. What is the difference between Anonymous blocks and sub programs ?**

Ans :-

a)  Anonymous blocks are unnamed blocks which are not stored anywhere while sub programs are compiled and stored in database.

b) Anonymous blocks compile at run time.

**3. What is the difference between DELETE and TRUNCATE ?**

Ans:-

a) DELETE is a DML command and TRUNCATE is a DDL command.

b) TRUNCATE re-set the memory blocks after execution and much faster than DELETE in most of the circumstances.

**4. What is Implicit Cursor and Explicit Cursor ?**

a) Implicit Cursor is defined and controlled by Oracle Internally.

Example :-

declare  
v\_ename varchar2(50);  
begin  
select ename into v\_ename from emp where empno = 10;  
end;

select query used in above PL/SQL block is an implicit cursor

b) Explicit Cursor is defined and controlled programatically.

Example :-

declare  
v\_ename varchar2(50);  
Cursor Cur\_ename is select ename into v\_ename from emp where empno = 10;  
begin  
Open Cur\_ename;  
Fetch Cur\_ename into v\_ename;  
Close Cur\_ename;  
end;

**5. Difference between DECODE and CASE**

Ans :- [Click here](https://sqlandplsql.com/2012/05/29/difference-between-decode-and-case-in-oracle/)

**6. How to find Nth highest salary ?**

Ans :- [Click here](https://sqlandplsql.com/2012/04/19/nth-highest-salary/)

**7. Difference between UNION and UNION ALL clause**

Ans :- [Click here](https://sqlandplsql.com/2012/06/22/difference-between-union-and-union-all-clause-oracle/)

**8. What is Autonomous Transaction ?**

Ans :- [Click here](https://sqlandplsql.com/2012/06/11/autonomous-transaction-in-oracle/)

**9. Difference between REPLACE and TRANSLATE functions**

Ans:- [Click here](https://sqlandplsql.com/2012/10/07/difference-between-replace-and-translate/)

**10.  What is LEAD and LAG function used for ?**

Ans:- [Click here](https://sqlandplsql.com/2013/01/21/lead-function-oracle/)

**11.  Explain function or procedure overloading**

Ans:- [Click here](https://sqlandplsql.com/2013/01/13/polymorphism-in-oracle/)

**12.  What is MERGE used for ?**

Ans:- [Click here](https://sqlandplsql.com/2012/09/25/merge-statement-oracle/)

**13.  What is GREATEST and LEAST function used for ?**

Ans:- [Click here](https://sqlandplsql.com/2012/07/27/greatest-and-least-function-oracle-2/)

**14. Where we use SOUNDEX function ?**

Ans:- [Click here](https://sqlandplsql.com/2012/10/30/soundex-function-oracle/)

**15.  What is COALESCE function ?**

Ans:- [Click here](https://sqlandplsql.com/2012/06/01/oracle-coalesce-function/)

**16. Difference between TRUNC and ROUND function**

Ans:- [Click here](https://sqlandplsql.com/2012/07/16/difference-between-trunc-and-round-functions-oracle/)

**17. How to convert Julian Date to date ?**

Ans :- Using ‘JSP’ format string

SQL >select to\_char(to\_date(2456317,’JSP’),’dd-Mon-yyyy’) as day  from dual;

DAY  
————  
24-Jan-2013

**18. How to convert date to Julian Date format ?**

Ans :- Using ‘J’ format string

SQL >select to\_char(to\_date(’24-Jan-2013′,’dd-mon-yyyy’),’J’) as julian from dual;

JULIAN  
——-  
2456317

**19. What is the difference between PRIMARY KEY and UNIQUE KEY constraints ?**

1. UNIQUE KEY columns can have null values but PRIMARY KEY column cannot accept null values.

2. A table can have only one PRIMARY KEY column but many UNIQUE KEY columns allowed.

( I can spot only two. Any more difference ? )

**20. What is PRAGMA ?**

PRAGMA is Oracle keyword to telling the compiler to do some special work.

Examples :-

[PRAGMA AUTONOMOUS TRANSACTION](https://sqlandplsql.com/2012/06/11/autonomous-transaction-in-oracle/)

[PRAGMA RESTRICT\_REFERENCE](https://sqlandplsql.com/2013/02/23/pragma-restrict_references-oracle/)

**21. What is Constraint ? How many constraints are available ?**

Ans :- [Explained in another post](https://sqlandplsql.com/2013/02/26/oracle-constraints/)

**22. What is Cartesian Product ?**

If two or more tables are joining without join condition will result into Cartesian products.

If table A has 2 rows and table B has 4 rows then Cartesian product between A and B will return 8 rows ( 2 multiply by 4 )

# PL/SQL Interview Questions and Answers

**Q1. How can you Rollback a particular part of a procedure or any PL/SQL Program?**  
It can be done using Savepoints during definition of a PL/SQL program.

**Q2. Is there a PL/SQL Engine in SQL\*Plus?**  
Unlike Oracle Forms, SQL\*Plus does not have an SQL Engine.  Thus, all your PL/SQL are sent directly to the database engine for execution. This makes it comparatively more efficient as SQL statements are not uncovered and sent to the database individually.

**Q3. What are the different types of Exceptions?**  
User-Defined and System Exceptions.

**Q4. What is the basic use of a Cursor?**  
A Cursor is basically used to access values from multiple records in the database or a table.

**Q5. What is the basic difference between a Procedure and a Function?**  
Both Procedures and Functions have the capability of accessing parameters but Functions return a value to the PL/SQL Block whereas Procedures do not return any value.

**Q6. What are the modes of parameters in a PL/SQL Procedure?**  
In, Out and In-Out are different modes of a PL/SQL Procedure.

**Q7. What are the different components of a PL/SQL trigger?**  
Trigger Action, Trigger Restriction and Trigger Action are the different components of a PL/SQL Trigger.

**Q8. Describe the disadvantage of Database Trigger over Stored Procedures?**  
We cannot control the execution of a Trigger whereas a Stored Procedure Execution can be controlled by the programmer.

**Q9. What are the properties of a Database?**  
The properties of a Database are also known as ACID Properties. These are Atomicity, Consistency, Isolation and Durability.

**Q10. How can you take an Input from a User of the Database?**  
You can take it using the Input Operator. This is as follow:  
val1:=&val1;

**Q11. What is %rowcount used for?**  
This is used if you want to create new variable which needs to fetch in a variable value from the database and you don’t know the Datatype of that variable. %rowcount will automatically change its datatype to the one in the database.

**Q12. What are the Parameters for raise\_application\_errror()?**  
The parameters are: Error Code and an Error Message.  
The Syntax is: raise\_application\_error(Error Code, Error Message);

**Q13. What is the difference between a Rollback Command and a Commit Command?**  
A Commit command is used to save the current transaction in the database in which modification is done to the database using Database Manipulation Language (DML) commands. A Rollback command is however used to undo the modifications done by the DML commands previously.

**Q14. What is a Statement Level Trigger?**  
A Statement Level trigger is executed when a statement or a command affects the whole table which is independent of a row in any table.

**Q15. What are the different parts of an Explicit Cursor?**  
The different parts in the process of making an Explicit Cursor are as follows:  
1. Declaring the Cursor  
2. Opening the Cursor  
3. Fetching the Cursor  
4. Closing the Cursor

**Q16. Enlist various types of PL/SQL Exceptions?**  
The PL/SQL  Exceptions are as follows:  
1. Zero\_Divide  
2. No\_Data\_Found  
3. Cursor\_Already\_Open  
4. Login\_Denied

**Q17. How can you enable or disable a trigger?**  
To Enable a Trigger, the Syntax is: Alter Trigger Trigger\_Name Enable;  
To Disable a Trigger, the Syntax is: Alter Trigger Trigger\_Name Disable;

**Q18. How can you assign a Name to an Un-Named PL/SQL Exception Block?**  
You can assign a name to an Un-Named Exception using Pragma, also known as Exception\_init.

**Q19. What is the range of the Error Codes in PL/SQL Exceptions?**  
The range of Error Code in PL/SQL Exception is between -20000 and -20899.

**Q20. What is Context Area in PL/SQL?**  
Oracle processes the executed SQL Statement in a separate memory zone called as Context Area. It contains information regarding SQL Query, number of rows accessed by it, information retrieved from database tables/records and many more.

**Q21. Which is the Default Cursor in Oracle PL/SQL?**  
Implicit Cursors are the Default Cursor in PL/SQL. These cursors are automatically activated when DML statements are encountered such as Insert, Delete or Update.

**Q22. Why is closing the Cursor required during explicit cursor development?**  
It is important because it will consume system memory while it is in active state and if it is not closed or terminated then it won’t let the other things in the memory as memory will be occupied and later on it will be full. Hence, deletion is necessary.

**Q23. Enlist various loops in PL/SQL Database.**  
The various loops used in PL/SQL are as follows:  
1. Simple Loop  
2. For Loop  
3. Nested Loop  
4. While Loop

**Q24. Explain about SQLERRM and SQLCODE and their importance.**  
SQLERRM Returns the Error Message for the Last Error that came across. SQLERRM is useful for WHEN OTHERS Exception. They can be used for Reporting purpose in Error Handling. They can also store the Error in the Code and store it in the Error Log Table. SQLCODE Returns the Value of the Error Number for the previous error.

**Q25. What rules are to be taken care of when doing comparisons using NULL?**  
1. A NULL should never be TRUE or FALSE.   
2. If a value in an expression is NULL, then the expression itself evaluates to NULL except for Concatenation Operator.  
3. A NULL is never equal or unequal to other values.  
4.NULL is not a value, it represents absence of data. So NULL is something UNIQUE

**Q26. What is the Difference between Runtime Errors and Syntax Errors?**  
A Runtime Error is handled with the help of Exception Handling Mechanism in a PL/SQL Block whereas a Syntax Error such as a spelling mistake is efficiently detected by the SQL Compiler.

**Q27. Explain about Pragma Exception\_Init.**  
It allows us to handle Oracle Pre Defined Messages wherein we can replace our own Message. We can therefore instruct the compiler to link the user specified message to Oracle Pre Defined Message during Compilation Time.  
Syntax:  Pragma Exception\_Init (Exception\_Name, Error\_Code)

**Q28. What is Mutating Table Error?**  
It occurs when a Trigger tries to update a row that is currently in execution stage. So it is solved out by using temporary tables and views.

**Q29. What is the maximum limit of applying Triggers to a Table?**  
The maximum number of Triggers that can be applied to one table is 12.

**Q30. What is the method to find out whether a Cursor is open or not?**  
The Cursor Status Variable can be used to find out whether the Cursor is open or not. It is %ISOPEN.

**Q31. What is a Row Level Trigger?**  
A Statement Level Trigger is executed whenever a statement or a command affects a row in a table by Database Manipulation Command (DML) statements like Delete, Insert or Update.

**Q32. What is an Active Set?**  
The set of rows that a Cursor holds at a single point of time is called as an Active Set.

**Q33. What are the different Loop Control Structures used in PL/SQL?**  
The different Loop Control Structures in PL/SQL are as follows:  
1. Exit  
2. Exit-When  
3. Continue  
4. Goto

**Q34. What is set serveroutput function used for in PL/SQL?**  
In PL/SQL, we frequently require to produce the Output on the console. We generally do it using dbms\_output.put\_line() function. For this to work properly and display the output on the console screen, we need to first set the server output to ON state. For this, the command is: set serveroutput on;

**Q35. Which Datatypes are available in PL/SQL?**  
There are mainly two main Datatypes available in PL/SQL which are further sub-divided into many datatypes and these are:  
1. Composite Datatypes: Record, Table, etc.  
2. Scalar Datatypes: Date,Number, Boolean, Varchar, Long, Varchar2, etc.

**Q36. Explain the difference between Truncate and Delete?**  
Truncate is much faster than Delete Command. It basically resets the Memory Blocks after Execution. Delete is a Database Manipulation Language (DML) Command whereas Truncate is a Data Definition Language (DDL) Command and it is comparatively slower.

**Q37. Explain about Package in short.**  
A Package is a Schema Object which assembles logically relate PL/SQL Datatypes and Sub-Programs.  It is actually a combination of Procedures, Functions, Record Type and Variables. It enhances Application Development and this provides Modular Programs. It also provides Encapsulation which hides data from Unauthorized Users.

**Q38. What are the disadvantages of Cursors and is there any alternative to it?**  
The processing of Cursors is very slow as compared to Joins. Hence, Joins can be an alternative to Cursors.

**Q39. What is the method to display messages in Output Files and Log Files?**  
The Output Files and Log Files can be used to display messages by using the following: Fnd\_file.put\_line.

**Q40. What is the difference between Grant command and Revoke command?**  
A Grant command permits the End-User to perform certain activities onto the database whereas a Revoke command prevents the End-User from making any changes to the Database.

**Q41. Enlist the Attributes of a Cursor in PL/SQL.**  
%Rowcount: This attribute checks the number of rows that are updated, deleted or fetched.  
%Isopen: This attribute checks whether the Cursor you want to access is currently open or closed.  
%Found: This attribute checks if the Cursor fetched a row. It returns a TRUE  if any row is fetched.                                                                             %NotFound: This attribute checks if the Cursor fetched any row or not. It returns a TRUE value if any row is not fetched.

**Q42. What is raise\_application\_error?**  
It is a Procedure which is included in the Dbms\_Standard Package that allows User-Defined Messages to be issued from the Database Stored Sub-program or a Trigger.

**Q43. Explain the difference between Varchar and Char?**  
Varchar doesn’t sets aside memory location during declaration of a variable. It stores the value only after a variable is defined or assigned a value. Its storage capacity is 32767 Bytes.

Char however preserves the memory location mentioned in the variable declaration even if it is not used. The maximum storage capacity for a Character variable is 255 Bytes.

**Q44. Explain Union, Union All, Intersect and Minus in PL/SQL.**  
Union: It returns all the distinct rows selected by either of the Queries.  
Union All: It returns all the rows selected by one of the queries which includes all the duplicates.  
Intersect: It returns all the distinct rows selected by both the queries.  
Minus: It returns all the distinct rows selected by the first query and not by the second one.

**Q45. What is the difference between Varchar2 and Varchar?**  
Varchar2 Datatype is memory efficient as it variable memory storage datatype whereas a Varchar Datatype variable is not memory efficient as it has fixed memory storage. Varchar occupies space for NULL values whereas Varchar2 variable does not. Varchar can store upto 2KB whereas a Varchar2 Datatype can store upto 4KB.

**Q46. What is a Mutating Table Error and how can you solve it?**  
It occurs if the Trigger tries to update a row that is currently being used. This is solved either by using the Temporary Tables or by the Views.

**Q47. Enlist the packages provided by the Oracle for use by the Developers?**  
Oracle provides the packages such as Dbms\_Transaction, Dbms\_Alert, Dbms\_Job, Dbms\_Ddl, Dbms\_Output, Dbms\_Utility, Dbms\_Lock, Dbms\_Sql, Dbms\_Pipe and Utl\_File.

**Q48. Explain the difference between SQL and SQL \*PLUS.**  
SQL represents Structured Query Language and is used to manage the database. It is a Non Procedural Programming Language and a Standard Language for Relational Database Management System (RDBMS). However, SQL \*PLUS is an Oracle specific program that executes SQL commands using PL/SQL blocks.

**Q49. Explain Bulk Collect.**  
It is a way of fetching a very big collection of data. With the help of Oracle Bulk Collect, the PL/SQL Engine indicates the SQL Engine to collect more than one row at a single point of time and stores them into a collection. Then it switches back to the PL/SQL Engine. During the Bulk Collect, Context Switch at one point. The performance improvement would be better with the more number of rows fetched into the collection.

**Q50. Enlist the Types of Triggers and its combinations.**  
There can be various types of combinations used in Triggers which are After, Before, Insert, Update, Delete, Row, Table and other such combinations.

**Q51. Enlist the methods to recover from Deadlock**  
Selection of a Victim, Rollback and Starvation are the methods to recover from a Deadlock.

**Q52. Enlist Concurrency Control Schemes.**  
The various Concurrency Control Schemes are Lock Based Protocol, Validation Base Protocol, Time Stamp Based Protocol and Multi-version Schemes.

So this was the list of all the important PL/SQL interview questions and answers that are very frequently asked in the interviews. If you found any information incorrect or missing in above list then please mention it by commenting below.

## PL/SQL interview Questions and Answers :-

http://interviewquestionsanswerspdf.com/2014/03/pl-sql-interview-questions-and-answers/

[1. Explain the structure of PL/SQL in brief.](http://www.iqspdf.com/2014/06/explain-structure-of-plsql-in-brief.html)

[2. Differentiate between % ROWTYPE and TYPE RECORD.](http://www.iqspdf.com/2014/06/differentiate-between-rowtype-and-type.html)

[3. Explain uses of cursor.](http://www.iqspdf.com/2014/06/explain-uses-of-cursor.html)

[4. Show code of a cursor for loop.](http://www.iqspdf.com/2014/06/show-code-of-cursor-for-loop.html)  
  
[5. Explain the uses of database trigger.](http://www.iqspdf.com/2014/06/explain-uses-of-database-trigger.html)  
  
[6. What are the two types of exceptions.](http://www.iqspdf.com/2014/06/what-are-two-types-of-exceptions.html)  
  
[7. Show some predefined exceptions.](http://www.iqspdf.com/2014/06/show-some-predefined-exceptions.html)  
  
[8. Explain Raise\_application\_error.](http://www.iqspdf.com/2014/06/explain-raiseapplicationerror.html)  
  
[9.Show how functions and procedures are called in a PL/SQL block.](http://www.iqspdf.com/2014/06/show-how-functions-and-procedures-are.html)  
  
[10. Explain two virtual tables available at the time of database trigger execution.](http://www.iqspdf.com/2014/06/explain-two-virtual-tables-available-at.html)  
  
[11. What are the rules to be applied to NULLs whilst doing comparisons?](http://www.iqspdf.com/2014/06/what-are-rules-to-be-applied-to-nulls.html)  
  
[12. How is a process of PL/SQL compiled?](http://www.iqspdf.com/2014/06/how-is-process-of-plsql-compiled.html)  
  
[13. Differentiate between Syntax and runtime errors.](http://www.iqspdf.com/2014/06/differentiate-between-syntax-and.html)  
  
[14. Explain Commit, Rollback and Savepoint.](http://www.iqspdf.com/2014/06/explain-commit-rollback-and-savepoint.html)  
  
[15. Define Implicit and Explicit Cursors.](http://www.iqspdf.com/2014/06/define-implicit-and-explicit-cursors.html)  
  
[16. Explain mutating table error.](http://www.iqspdf.com/2014/06/explain-mutating-table-error.html)  
  
[17. When is a declare statement required?](http://www.iqspdf.com/2014/06/when-is-declare-statement-required.html)  
  
[18. How many triggers can be applied to a table?](http://www.iqspdf.com/2014/06/how-many-triggers-can-be-applied-to.html)  
  
[19. What is the importance of SQLCODE and SQLERRM?](http://www.iqspdf.com/2014/06/what-is-importance-of-sqlcode-and.html)  
  
[20. If a cursor is open, how can we find in a PL/SQL Block?](http://www.iqspdf.com/2014/06/if-cursor-is-open-how-can-we-find-in.html)  
  
[21. Show the two PL/SQL cursor exceptions.](http://www.iqspdf.com/2014/06/show-two-plsql-cursor-exceptions.html)  
  
[22. What operators deal with NULL?](http://www.iqspdf.com/2014/06/what-operators-deal-with-null.html)  
  
[23. Does SQL\*Plus also have a PL/SQL Engine?](http://www.iqspdf.com/2014/06/does-sqlplus-also-have-plsql-engine.html)  
  
[24. What packages are available to PL/SQL developers?](http://www.iqspdf.com/2014/06/what-packages-are-available-to-plsql.html)  
  
[25. Explain 3 basic parts of a trigger.](http://www.iqspdf.com/2014/06/explain-3-basic-parts-of-trigger.html)  
  
[26. What are character functions?](http://www.iqspdf.com/2014/06/what-are-character-functions.html)  
  
[27. Explain TTITLE and BTITLE.](http://www.iqspdf.com/2014/06/explain-ttitle-and-btitle.html)  
  
[28. Show the cursor attributes of PL/SQL.](http://www.iqspdf.com/2014/06/show-cursor-attributes-of-plsql.html)  
  
[29. What is an Intersect?](http://www.iqspdf.com/2014/06/what-is-intersect.html)  
  
[30. What are sequences?](http://www.iqspdf.com/2014/06/what-are-sequences.html)  
  
[31. How would you reference column values BEFORE and AFTER you have inserted and deleted triggers?](http://www.iqspdf.com/2014/06/how-would-you-reference-column-values.html)  
  
[32. What are the uses of SYSDATE and USER keywords?](http://www.iqspdf.com/2014/06/what-are-uses-of-sysdate-and-user.html)  
  
[33. How does ROWID help in running a query faster?](http://www.iqspdf.com/2014/06/how-does-rowid-help-in-running-query.html)  
  
[34. What are database links used for?](http://www.iqspdf.com/2014/06/what-are-database-links-used-for.html)  
  
[35. What does fetching a cursor do?](http://www.iqspdf.com/2014/06/what-does-fetching-cursor-do.html)  
  
[36. What does closing a cursor do?](http://www.iqspdf.com/2014/06/what-does-closing-cursor-do.html)  
  
[37. Explain the uses of Control File.](http://www.iqspdf.com/2014/06/explain-uses-of-control-file.html)  
  
[38.  Explain Consistency](http://www.iqspdf.com/2014/06/explain-consistency.html)  
  
[39. Differ between Anonymous blocks and sub-programs.](http://www.iqspdf.com/2014/06/anonymous-blocks-and-sub-programs.html)  
  
[40. Differ between DECODE and CASE.](http://www.iqspdf.com/2014/06/differ-between-decode-and-case.html)  
  
[41. Explain autonomous transaction.](http://www.iqspdf.com/2014/06/explain-autonomous-transaction.html)  
  
[42. Differentiate between SGA and PGA.](http://www.iqspdf.com/2014/06/differentiate-between-sga-and-pga.html)  
  
[43. What is the location of Pre\_defined\_functions.](http://www.iqspdf.com/2014/06/what-is-location-of-predefinedfunctions.html)  
  
[44. Explain polymorphism in PL/SQL.](http://www.iqspdf.com/2014/06/explain-polymorphism-in-plsql.html)  
  
[45. What are the uses of MERGE?](http://www.iqspdf.com/2014/06/what-are-uses-of-merge.html)  
  
[46. Can 2 queries be executed simultaneously in a Distributed Database System?](http://www.iqspdf.com/2014/06/can-2-queries-be-executed.html)  
  
[47. Explain Raise\_application\_error.](http://www.iqspdf.com/2014/06/explain-raiseapplicationerror_25.html)  
  
[48.  What is out parameter used for eventhough return statement can also be used in pl/sql?](http://www.iqspdf.com/2014/06/what-is-out-parameter-used-for.html)  
  
[49. How would you convert date into Julian date format?](http://www.iqspdf.com/2014/06/how-would-you-convert-date-into-julian.html)  
  
[50. Explain SPOOL](http://www.iqspdf.com/2014/06/explain-spool.html)

**51. What are the system privileges that are required by a schema owner (user) to create a trigger on a table?**  
**52. What are the different types of triggers?**  
**53. How can triggers be used for the table auditing?**  
**54. What are INSTEAD OF triggers?**  
**55. What is the difference between database trigger and stored procedure?**  
**56. How can the performance of a trigger be improved?**  
**57. What are the events on which a database trigger can be based?**  
**58. What is a CALL statement? Explain with an example.**  
**59. What is a mutating table?**  
**60. Which data dictionary views have the information on the triggers that are available in the database?**  
**62. What are schema-level triggers?**  
**63. What is a database event trigger?**  
**64. In what condition is it good to disable a trigger?**  
**65. Which column of the USERJTRIGGERS data dictionary view displays the database event that will fire the trigger?**  
**66. What is the meaning of disabling a trigger?**  
**67. Can triggers stop a DML statement from executing on a table?**  
**68. Can a view be mutating? If yes, then how?**  
**69. Can a COMMIT statement be executed as part of a trigger?**  
**70. What is the difference between ALTER TRIGGER and DROP TRIGGER statements?**  
**71. Do  triggers  have  restrictions  on the  usage  of large datatypes, such as LONG and LONG RAW?**  
**72. Are  DDL triggers fired for DDL statements within a PL/SQL code executed using the DBMS.SQL package?**  
**73. Does a USER\_OBJECTS view have an entry for a trigger?**  
**74. How can you view the errors encountered in a trigger?**  
**75. Does USERJTRIGGERS have entry for triggers with compilation errors?**  
**76. Is it possible to pass parameters to triggers?**  
**77. Can a SELECT statement fire a trigger?**  
**79. Can cursors be part of a trigger body?**  
**81. Is it possible to create STARTUP or SHUTDOWN trigger for ON-SCHEMA?**  
**83. What does the BASE\_OBJECT\_TYPE column shows in the USER.TRIGGERS data dictionary view?**  
**84. BEFORE OR AFTER UPDATE trigger FOR EACH ROW?**  
**85. Can INSTEAD OF triggers be used to fire once for each statement on a view?**  
**86. Is it possible to include an INSERT statement on the same table to which the trigger is assigned?**  
**88. What are conditional predicates?**  
**89. Write the ALTER statement to enable all the triggers on the T.STUDENTS table.**  
**90. Which column in the USER.TRIGGERS data dictionary view shows that the trigger is a PL/SQL trigger?**

**ORACLE INTERVIEW QUESTION AND ANSWER**

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#### [What are Schema Objects?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a Table?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a View?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is an Index?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a Data file?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the difference between UNIQUE or PRIMARY KEY Constraint?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

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#### [What is the difference between %ROWTYPE and TYPE RECORD ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a cursor ? Why cursor is required ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Explain the two types of cursors ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is Raise\_application\_error ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

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#### [What is difference between TRUNCATE and DELETE?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a join? Explain the different types of joins?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a Subquery?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is correlated sub-query?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Difference between SUBSTR and INSTR?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Explain UNION, MINUS, UNION ALL, INTERSECT?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the Usages of SAVEPOINTS?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is ROWID?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is PRIMARY KEY, UNIQUE KEY, FOREIGN KEY?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is ON DELETE CASCADE?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is difference between CHAR and VARCHAR2? What is maximum SIZE allowed for each type?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [How to store the results of a query into a file?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Which two statements about subqueries are true? (Choose two.)](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Which three functions can be used to manipulate character, number, or date column values? (Choose three.)](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Which statement about a table is true?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What will be returned from SIGN(ABS(NVL(-32,0)))?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Which functions could you use to strip leading characters from a character string. Select two.](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [All the operators are used in single row subquery except one](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [All the commands executes in iSQLplus except one](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Ascript file which will be executed automatically in iSQLPlus is](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [A command in iSQL plus is used to give the status of old and new value of variable](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [All commands are used to save the changes of the transaction except one](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [A Clause which is used in joining two tables other than equality operator is](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [A Clause which is the pseudocolumn used to know the current value of the sequence](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [A Query which is used in top-N analysis is](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [An operator is used to get and display the redundant records](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [All the datatypes with respect to Oracle 9i is true except one](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is database?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select records from the given row?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To check the leap year](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To delete duplicate records](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To keep latest single record](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select second max salary](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select nth max salary](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select nth min salary](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select top(n) max salaries](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select top(n) min salaries](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [To select records from particular row(the remaining rows)](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [to select first n rows](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Explain the difference between trigger and stored procedure.](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Differences between DATE and TIMESTAMP in Oracle](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Create a copy of EMP table without any data?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Delete the 10th record of EMP table?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Find all the departments which have more than 3 employees?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Display the manager who is having maximum number of employees working under him?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Display the name of employees who joined on the same date?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Delete those employees who joined the company 10 years back from today?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Display those employees whose salary is ODD value?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Find out the number of employees whose salary is greater than their manager salary?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Select the count of employees in each dept where count is greater than 3?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Display name of those employees who are getting the highest salary?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a transaction ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is implicit cursor and how is it used by Oracle ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Which of the following is not a schema object : Indexes, tables, public synonyms, triggers and packages ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Is there a PL/SQL Engine in SQL\*Plus?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Can one read/write files from PL/SQL?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

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#### [Can one use dynamic SQL within PL/SQL? OR Can you use a DDL in a procedure ? How ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the various types of parameter modes in a procedure ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the constructs of a procedure, function or a package ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Why Create or Replace and not Drop and recreate procedures ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Can you pass parameters in packages ? How ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the parts of a database trigger ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the various types of database triggers ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the advantage of a stored procedure over a database trigger ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are cascading triggers? What is the maximum no of cascading triggers at a time?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are mutating triggers ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are constraining triggers ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Describe Oracle database's physical and logical structure ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Can you increase the size of a tablespace ? How ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the use of Control files ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the use of Data Dictionary ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the states of a rollback segment ? What is the difference between partly available and needs recovery ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the maximum no.of columns a table can have ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [Can you pass a parameter to a cursor ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the various types of RollBack Segments ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are the disadvantages of SQL ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [When to create indexes ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [How can you avoid indexes ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the difference between a view and a synonym ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is the difference between foreign key and reference key ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What is a package cursor ?](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

#### [What are snap shots and views](http://www.besanttechnologies.com/oracle-interview-questions-and-answers)

<http://www.globalguideline.com/interview_questions/Questions.php?sc=Oracle_PL-SQL_Interview_Questions_and_Answers_>

**PL/SQL INTERVIEW QUESTION AND ANSWERS**

## SQL Query Interview Questions and Answers

**Question 1: SQL Query to find second highest salary of Employee**

Answer: There are many ways to find second highest salary of Employee in SQL, you can either use SQL Join or Subquery to solve this problem. Here is SQL query using Subquery:

select MAX(Salary) from Employee WHERE Salary NOT IN (select MAX(Salary) from Employee );

See [How to find second highest salary in SQL](http://javarevisited.blogspot.com/2012/12/how-to-find-second-highest-or-maximum-salary-sql.html) for more ways to solve this problem.

**Question 2: SQL Query to find Max Salary from each department.**

Answer: You can find the maximum salary for each department by grouping all records by DeptId and then using MAX() function to calculate maximum salary in each group or each department.

SELECT DeptID, MAX(Salary) FROM Employee GROUP BY DeptID.

These questions become more interesting if Interviewer will ask you to print department name instead of department id, in that case, you need to join Employee table with Department using foreign key DeptID, make sure you do LEFT or RIGHT OUTER JOIN to include departments without any employee as well.  Here is the query

SELECT DeptName, MAX(Salary) FROM Employee e RIGHT JOIN Department d ON e.DeptId = d.DeptID GROUP BY DeptName;

In this query, we have used RIGHT OUTER JOIN because we need the name of the department from Department table which is on the right side of JOIN clause, even if there is no reference of dept\_id on Employee table.  **Question 3: Write SQL Query to display the current date.**

Answer: SQL has built-in function called GetDate() which returns the current timestamp. This will work in Microsoft SQL Server, other vendors like Oracle and MySQL also has equivalent functions.

SELECT GetDate();

**Question 4: Write an SQL Query to check whether date passed to Query is the date of given format or not**.

Answer: SQL has IsDate() function which is used to check passed value is a date or not of specified format, it returns 1(true) or 0(false) accordingly. Remember ISDATE() is an MSSQL function and it may not work on Oracle, MySQL or any other database but there would be something similar.

SELECT ISDATE('1/08/13') AS "MM/DD/YY";

It will return 0 because passed date is not in correct format.

**Question 5: Write an SQL Query to print the name of the distinct employee whose DOB is between 01/01/1960 to 31/12/1975.**

Answer: This SQL query is tricky, but you can use BETWEEN clause to get all records whose date fall between two dates.

SELECT DISTINCT EmpName FROM Employees WHERE DOB BETWEEN ‘01/01/1960’ AND ‘31/12/1975’;

**Question 6: Write an SQL Query find number of employees according to gender whose DOB is between 01/01/1960 to 31/12/1975.**

Answer : 

SELECT COUNT(\*), sex from Employees WHERE DOB BETWEEN '01/01/1960' AND '31/12/1975' GROUP BY sex;

**Question 7: Write an SQL Query to find an employee whose Salary is equal or greater than 10000**.

Answer : 

SELECT EmpName FROM Employees WHERE Salary>=10000;

**Question 8: Write an SQL Query to find name of employee whose name Start with ‘M’**

Answer : 

SELECT \* FROM Employees WHERE EmpName like 'M%';

**Question 9: find all Employee records containing the word "Joe", regardless of whether it was stored as JOE, Joe, or joe.**

Answer :

SELECT \* from Employees WHERE UPPER(EmpName) like '%JOE%';

**Question 10: Write an SQL Query to find the year from date.**

Answer:  Here is how you can find Year from a Date in SQL Server 2008 

SELECT YEAR(GETDATE()) as "Year";

**Question 11: Write SQL Query to find duplicate rows in a database? and then write SQL query to delete them?**  
Answer: You can use the following query to select distinct records:

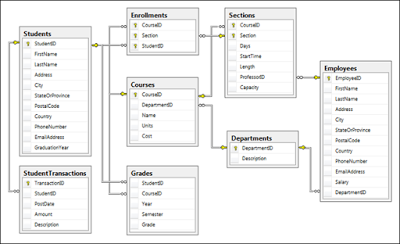
SELECT \* FROM emp a WHERE rowid = (SELECT MAX(rowid) FROM EMP b WHERE a.empno=b.empno)

to Delete:

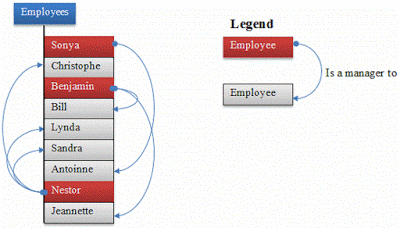
DELETE FROM emp a WHERE rowid != (SELECT MAX(rowid) FROM emp b WHERE a.empno=b.empno);

**Question 12: There is a table which contains two column Student and Marks, you need to find all the students, whose marks are greater than average marks i.e. list of above average students.**  
Answer: This query can be written using subquery as shown below:

SELECT student, marks from table where marks > SELECT AVG(marks) from table)

[](http://1.bp.blogspot.com/-EBP7clmjL1Q/VXrjOw_yTVI/AAAAAAAADAs/n_pQ6j7vkZw/s1600/SQL+Schema+Interview+Questions.png)

**Question 13: How do you find all employees which are also manager? .**  
You have given a standard employee table with an additional column mgr\_id, which contains employee id of the manager.

[](http://1.bp.blogspot.com/-A8OVkcRMrsM/VXrj9FBPKvI/AAAAAAAADA0/XZvHQHDVaNQ/s1600/Employee+Manager+query.gif)

Answer: You need to know about self-join to solve this problem. In Self Join, you can join two instances of the same table to find out additional details as shown below

SELECT e.name, m.name FROM Employee e, Employee m WHERE e.mgr\_id = m.emp\_id;

this will show employee name and manager name in two column e.g.  
  
name  manager\_name  
John   David  
  
One follow-up is to modify this query to include employees which don't have a manager. To solve that, instead of using the inner join, just use left outer join, this will also include employees without managers.  
  
**Question 14: You have a composite index of three columns, and you only provide the value of two columns in WHERE clause of a select query? Will Index be used for this operation?** For example if Index is on EmpId, EmpFirstName, and EmpSecondName and you write query like

SELECT \* FROM Employee WHERE EmpId=2 and EmpFirstName='Radhe'

If the given two columns are secondary index column then the index will not invoke, but if the given 2 columns contain the primary index(first column while creating index) then the index will invoke. In this case, Index will be used because EmpId and EmpFirstName are primary columns.

Hope this article will help you to take a quick practice whenever you are going to attend any interview and not have much time to go into the deep of each query, but if you have good time to prepare then I suggest you to read and solve SQL queries from **Joe Celko's** [SQL Puzzles and Answers](http://www.amazon.com/Puzzles-Answers-Edition-Kaufmann-Management/dp/0123735963?tag=javamysqlanta-20)**, Second edition**, one of the best book for SQL query lovers and enthusiastic.

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| --- |
| ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the various types of queries ? Answer: The types of queries are: Normal Queries  Sub Queries  Co-related queries  Nested queries  Compound queries  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is a transaction ? Answer: A transaction is a set of SQL statements between any two COMMIT and ROLLBACK statements.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is implicit cursor and how is it used by Oracle ? Answer: An implicit cursor is a cursor which is internally created by Oracle.It is created by Oracle for each individual SQL.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Which of the following is not a schema object : Indexes, tables, public synonyms, triggers and packages ? Answer: Public synonyms  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is PL/SQL? Answer: PL/SQL is Oracle's Procedural Language extension to SQL.The language includes object oriented programming techniques such as encapsulation, function overloading, information hiding (all but inheritance), and so, brings state-of-the-art programming to the Oracle database server and a variety of Oracle tools.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Is there a PL/SQL Engine in SQL\*Plus? Answer: No.Unlike Oracle Forms, SQL\*Plus does not have a PL/SQL engine.Thus, all your PL/SQL are send directly to the database engine for execution.This makes it much more efficient as SQL statements are not stripped off and send to the database individually.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Is there a limit on the size of a PL/SQL block? Answer: Currently, the maximum parsed/compiled size of a PL/SQL block is 64K and the maximum code size is 100K.You can run the following select statement to query the size of an existing package or procedure. SQL> select \* from dba\_object\_size where name = 'procedure\_name'    ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can one read/write files from PL/SQL? Answer: Included in Oracle 7.3 is a UTL\_FILE package that can read and write files.The directory you intend writing to has to be in your INIT.ORA file (see UTL\_FILE\_DIR=...parameter).  Before Oracle 7.3 the only means of writing a file was to use DBMS\_OUTPUT with the SQL\*Plus SPOOL command. DECLARE fileHandler UTL\_FILE.FILE\_TYPE;  BEGIN fileHandler := UTL\_FILE.FOPEN('/home/oracle/tmp', 'myoutput','W');  UTL\_FILE.PUTF(fileHandler, 'Value of func1 is %sn', func1(1));  UTL\_FILE.FCLOSE(fileHandler);  END;  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  How can I protect my PL/SQL source code? Answer: PL/SQL V2.2, available with Oracle7.2, implements a binary wrapper for PL/SQL programs to protect the source code.This is done via a standalone utility that transforms the PL/SQL source code into portable binary object code (somewhat larger than the original).This way you can distribute software without having to worry about exposing your proprietary algorithms and methods.SQL\*Plus and SQL\*DBA will still understand and know how to execute such scripts.Just be careful, there is no "decode" command available. The syntax is:                      wrap name=myscript.sql  oname=xxxx.yyy  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can one use dynamic SQL within PL/SQL? OR Can you use a DDL in a procedure ? How ? Answer: From PL/SQL V2.1 one can use the DBMS\_SQL package to execute dynamic SQL statements. Eg: CREATE OR REPLACE PROCEDURE DYNSQL AS cur integer;  rc integer;  BEGIN cur := DBMS\_SQL.OPEN\_CURSOR;  DBMS\_SQL.PARSE(cur,'CREATE TABLE X (Y DATE)',  DBMS\_SQL.NATIVE);  rc := DBMS\_SQL.EXECUTE(cur);  DBMS\_SQL.CLOSE\_CURSOR(cur);  END;  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are the various types of Exceptions ? Answer: User defined and Predefined Exceptions.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can we define exceptions twice in same block ? Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the difference between a procedure and a function ? Answer: Functions return a single variable by value whereas procedures do not return any variable by value.Rather they return multiple variables by passing variables by reference through their OUT parameter.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you have two functions with the same name in a PL/SQL block ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you have two stored functions with the same name ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you call a stored function in the constraint of a table ? Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the various types of parameter modes in a procedure ? Answer: IN, OUT AND INOUT.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is Over Loading and what are its restrictions ? Answer: OverLoading means an object performing different functions depending upon the no.of parameters or the data type of the parameters passed to it.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can functions be overloaded ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can 2 functions have same name & input parameters but differ only by return datatype  Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are the constructs of a procedure, function or a package ? Answer: The constructs of a procedure, function or a package are :  variables and constants  cursors  exceptions  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Why Create or Replace and not Drop and recreate procedures ? Answer: So that Grants are not dropped.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you pass parameters in packages ? How ? Answer: Yes.You can pass parameters to procedures or functions in a package.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the parts of a database trigger ? Answer: The parts of a trigger are:  A triggering event or statement  A trigger restriction  A trigger action  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are the various types of database triggers ? Answer: There are 12 types of triggers, they are combination of :  Insert, Delete and Update Triggers.  Before and After Triggers.  Row and Statement Triggers.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is the advantage of a stored procedure over a database trigger ? Answer: We have control over the firing of a stored procedure but we have no control over the firing of a trigger.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the maximum no.of statements that can be specified in a trigger statement ? Answer: One.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can views be specified in a trigger statement ? Answer: No  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the values of :new and :old in Insert/Delete/Update Triggers ? Answer: INSERT : new = new value, old = NULL DELETE : new = NULL, old = old value UPDATE : new = new value, old = old value  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are cascading triggers? What is the maximum no of cascading triggers at a time? Answer: When a statement in a trigger body causes another trigger to be fired, the triggers are said to be cascading.Max = 32.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are mutating triggers ? Answer: A trigger giving a SELECT on the table on which the trigger is written.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are constraining triggers ? Answer: A trigger giving an Insert/Updat e on a table having referential integrity constraint on the triggering table.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Describe Oracle database's physical and logical structure ? Answer:  Physical : Data files, Redo Log files, Control file.  Logical : Tables, Views, Tablespaces, etc.    ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Can you increase the size of a tablespace ? How ? Answer: Yes, by adding datafiles to it.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you increase the size of datafiles ? How ? Answer: No (for Oracle 7.0) Yes (for Oracle 7.3 by using the Resize clause )  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the use of Control files ? Answer: Contains pointers to locations of various data files, redo log files, etc.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the use of Data Dictionary ? Answer: It Used by Oracle to store information about various physical and logical Oracle structures e.g.Tables, Tablespaces, datafiles, etc  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the advantages of clusters ? Answer: Access time reduced for joins.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the disadvantages of clusters ? Answer: The time for Insert increases.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can Long/Long RAW be clustered ? Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can null keys be entered in cluster index, normal index ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can Check constraint be used for self referential integrity ? How ? Answer: Yes.In the CHECK condition for a column of a table, we can reference some other column of the same table and thus enforce self referential integrity.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the min.extents allocated to a rollback extent ? Answer: Two  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the states of a rollback segment ? What is the difference between partly available and needs recovery ? Answer: The various states of a rollback segment are :  ONLINE  OFFLINE  PARTLY AVAILABLE  NEEDS RECOVERY  INVALID.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is the difference between unique key and primary key ? Answer: Unique key can be null; Primary key cannot be null.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ An insert statement followed by a create table statement followed by rollback ? Will the rows be inserted ? Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you define multiple savepoints ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you Rollback to any savepoint ? Answer: Yes.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the maximum no.of columns a table can have ? Answer: 254.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the significance of the & and && operators in PL SQL ? Answer: The & operator means that the PL SQL block requires user input for a variable.The && operator means that the value of this variable should be the same as inputted by the user previously for this same variable  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you pass a parameter to a cursor ? Answer: Explicit cursors can take parameters, as the example below shows.A cursor parameter can appear in a query wherever a constant can appear.  CURSOR c1 (median IN NUMBER) IS SELECT job, ename FROM emp WHERE sal > median;  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are the various types of RollBack Segments ? Answer: The types of Rollback sagments are as follows :  Public Available to all instances  Private Available to specific instance  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Can you use %RowCount as a parameter to a cursor ? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Is the query below allowed :  Select sal, ename Into x From emp Where ename = 'KING' (Where x is a record of Number(4) and Char(15))  Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Is the assignment given below allowed :  ABC = PQR (Where ABC and PQR are records)  Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Is this for loop allowed : For x in &Start..&End Loop  Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ How many rows will the following SQL return : Select \* from emp Where rownum < 10;  Answer: 9 rows  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ How many rows will the following SQL return : Select \* from emp Where rownum = 10;  Answer: No rows  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Which symbol preceeds the path to the table in the remote database ? Answer: @  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Are views automatically updated when base tables are updated ? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can a trigger written for a view ? Answer: No  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ If all the values from a cursor have been fetched and another fetch is issued, the output will be : error, last record or first record ? Answer: Last Record  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ A table has the following data : [[5, Null, 10]].What will the average function return ? Answer: 7.5  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Is Sysdate a system variable or a system function? Answer: System Function  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Consider a sequence whose currval is 1 and gets incremented by 1 by using the nextval reference we get the next number 2.Suppose at this point we issue an rollback and again issue a nextval.What will the output be ? Answer: 3  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Definition of relational DataBase by Dr.Codd (IBM)? Answer: A Relational Database is a database where all data visible to the user is organized strictly as tables of data values and where all database operations work on these tables.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is Multi Threaded Server (MTA) ? Answer: In a Single Threaded Architecture (or a dedicated server configuration) the database manager creates a separate process for each database user.But in MTA the database manager can assign multiple users (multiple user processes) to a single dispatcher (server process), a controlling process that queues request for work thus reducing the databases memory requirement and resources.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Which are initial RDBMS, Hierarchical & N/w database ? Answer:  RDBMS - R system  Hierarchical - IMS  N/W - DBTG  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  Difference between Oracle 6 and Oracle 7  Answer:  **ORACLE 7**                                 **ORACLE 6** Cost based optimizer                   Rule based optimizer   Shared SQL Area                        SQL area allocated for each user   Multi Threaded Server                  Single Threaded Server   Hash Clusters                             Only B-Tree indexing   Roll back Size                            Adjustment No provision   Truncate command                      No provision   Distributed Database                   Distributed Query   Table replication & snapshots       No provision   Client/Server Tech                       No provision  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is Functional Dependency? Answer: Given a relation R, attribute Y of R is functionally dependent on attribute X of R if and only if each X-value has associated with it precisely one -Y value in R  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is Auditing ? Answer: The database has the ability to audit all actions that take place within it. a) Login attempts, b) Object Accesss, c) Database Action Result of Greatest(1,NULL) or Least(1,NULL) NULL  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ While designing in client/server what are the 2 imp.things to be considered ? Answer: Network Overhead (traffic), Speed and Load of client server  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the disadvantages of SQL ? Answer: Disadvantages of SQL are :  Cannot drop a field  Cannot rename a field  Cannot manage memory  Procedural Language option not provided  Index on view or index on index not provided  View updation problem  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  When to create indexes ? Answer: To be created when table is queried for less than 2% or 4% to 25% of the table rows.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ How can you avoid indexes ? Answer: To make index access path unavailable Use FULL hint to optimizer for full table scan Use INDEX or AND-EQUAL hint to optimizer to use one index or set to indexes instead of another. Use an expression in the Where Clause of the SQL.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is the result of the following SQL : Select 1 from dual UNION Select 'A' from dual;  Answer: Error  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can database trigger written on synonym of a table and if it can be then what would be the effect if original table is accessed. Answer: Yes, database trigger would fire.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you alter synonym of view or view ? Answer: No  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can you create index on view  Answer: No.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the difference between a view and a synonym ? Answer: 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.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What's the length of SQL integer ? Answer: 32 bit length  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is the difference between foreign key and reference key ? Answer: Foreign key is the key i.e.attribute which refers to another table primary key. Reference key is the primary key of table referred by another table.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Can dual table be deleted, dropped or altered or updated or inserted ? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ If content of dual is updated to some value computation takes place or not ? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ If any other table same as dual is created would it act similar to dual? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ For which relational operators in where clause, index is not used ? Answer: <> , like '%...' is NOT functions, field +constant, field||''  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ Assume that there are multiple databases running on one machine.How can you switch from one to another ? Answer: Changing the ORACLE\_SID  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are the advantages of Oracle ?  Answer: Portability : Oracle is ported to more platforms than any of its competitors, running on more than 100 hardware platforms and 20 networking protocols. Market Presence : Oracle is by far the largest RDBMS vendor and spends more on R & D than most of its competitors earn in total revenue.This market clout means that you are unlikely to be left in the lurch by Oracle and there are always lots of third party interfaces available. Backup and Recovery : Oracle provides industrial strength support for on-line backup and recovery and good software fault tolerence to disk failure.You can also do point-in-time recovery. Performance : Speed of a 'tuned' Oracle Database and application is quite good, even with large databases.Oracle can manage > 100GB databases. Multiple database support : Oracle has a superior ability to manage multiple databases within the same transaction using a two-phase commit protocol.    ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What is a forward declaration ? What is its use ? Answer: PL/SQL requires that you declare an identifier before using it.Therefore, you must declare a subprogram before calling it.This declaration at the start of a subprogram is called forward declaration.A forward declaration consists of a subprogram specification terminated by a semicolon.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------ What are actual and formal parameters ? Answer: Actual Parameters : Subprograms pass information using parameters.The variables or expressions referenced in the parameter list of a subprogram call are actual parameters.For example, the following procedure call lists two actual parameters named emp\_num and amount:  Eg.raise\_salary(emp\_num, amount);Formal Parameters : The variables declared in a subprogram specification and referenced in the subprogram body are formal parameters.For example, the following procedure declares two formal parameters named emp\_id and increase:  Eg.PROCEDURE raise\_salary (emp\_id INTEGER, increase REAL) IS current\_salary REAL;  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are the types of Notation ?  Answer: Position, Named, Mixed and Restrictions.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What all important parameters of the init.ora are supposed to be increased if you want to increase the SGA size ? Answer: In our case, db\_block\_buffers was changed from 60 to 1000 (std values are 60, 550 & 3500) shared\_pool\_size was changed from 3.5MB to 9MB (std values are 3.5, 5 & 9MB) open\_cursors was changed from 200 to 300 (std values are 200 & 300) db\_block\_size was changed from 2048 (2K) to 4096 (4K) {at the time of database creation}. The initial SGA was around 4MB when the server RAM was 32MB and The new SGA was around 13MB when the server RAM was increased to 128MB.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  If I have an execute privilege on a procedure in another users schema, can I execute his procedure even though I do not have privileges on the tables within the procedure ? Answer: Yes  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What are various types of joins ? Answer: Types of joins are:  Equijoins  Non-equijoins  self join  outer join  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  What is a package cursor ? Answer: A package cursor is a cursor which you declare in the package specification without an SQL statement.The SQL statement for the cursor is attached dynamically at runtime from calling procedures.  ------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------  If you insert a row in a table, then create another table and then say Rollback.In this case will the row be inserted ? Answer: Yes.Because Create table is a DDL which commits automatically as soon as it is executed.The DDL commits the transaction even if the create statement fails internally (eg table already exists error) and not syntactically. |
| Define PL/SQL.  - PL/SQL is a procedural language and is an extension to standard SQL. - It enables us to execute procedural logic on the database. - We use PL/SQL to perform processing on the server. - We can also use PL/SQL to create stored procedure and functions.  PL/SQL is Procedural Language SQL that is an extension of SQL that results in a more structural language composed of blocks. It is mainly used in writing applications that needs to be structured and has error handling.  Main Features of PL/SQL  1) Offers conditional blocks of code having if else etc 2) Offers error handling. It can handle exceptions. 3) The blocks can be nested within each other. 4) The PL/SQL engine processes the statements in blocks.  The block typically looks like DECLARE BEGIN EXCEPTION END  PL/SQL Architecture  The architecture consists of PL/SQL block, PL/SQL engine and an oracle server in which the PL/SQL engine is embedded. PL/SQL block of statements are sent to the PL/SQL engine for processing. The PL/SQL engine executes procedural statements but sends SQL statements to the SQL engine in the Oracle database.  Basic Structure of PL/SQL  A PL/SQL block consists of:- DECLARATIVE section- This is where all variables are declared. BEGIN section- This section contains the PL/SQL block. The statements of code are written in this block. EXCEPTION- Any exceptions that are anticipated are written here.  Variables and Types  Just like in any other language, PL/SQL constants and variables need to be declared before using them in your statements. The variables are declared in the BEGIN section. Variables can take data types as CHAR, DATE, or NUMBER.  Example for declaring variables:  DECLARE    Student\_id NUMBER(6);    student\_name VARCHAR2(20); |
| Advantages of PL/SQL  - PL/SQL is a development tool and is an extension to standard SQL. - We can use conditional checking, branching and looping in PL/SQL. - In PL/SQL, we can send a block of statement to the server which reduces network traffic. - PL/SQL provides rich set of error handling mechanism. - PL/SQL supports portability i.e. code written in DOS version can run on unix version.  Because of the block nature, multiple statements are processed at once thereby improving performance. PL/SQL handles exceptions on catching which, action can be taken. The block can be stored and reused. PL/SQL is highly portable as it works with all procedural languages and is highly secured because of privileges.  Simple PL/SQL Programs  a)To give 10% hike in current salary from employee table and insert into appraisal table.  DECLARE     salary NUMBER(8,2);     emp\_id NUMBER(6) := 100; BEGIN    SELECT salary \* 0.10 INTO appraisal FROM employees           WHERE employee\_id = emp\_id; END;  b)To display employees with id < 100.  BEGIN FOR someone IN (SELECT \* FROM employees WHERE employee\_id < 100 ) LOOP DBMS\_OUTPUT.PUT\_LINE('First name = ' || someone.first\_name || ', Last name = ' || someone.last\_name); END LOOP; END; |
| Explain the concept of exception.  An exception occurs when unwanted situation arises. The situation can be exceptional to normal functioning of the program. It can occur due to system error, user error and application error.  In PL/SQL, we can anticipate and trap these errors by means of exception handling code.  Types of Exceptions:   Predefined oracle exceptions User-defined exceptions  Defined user defined exceptions.  We use user defined exception only when oracle doesn't raise its own exception. In this procedure we raise an exception by using RAISE command. |
| What is a cursor? Define explicit and implicit cursor.  The oracle engine opens a work area for each SQL's operations for its internal processing in order to execute SQL statements. This area is private to SQL's operations and is called as a cursor.  Implicit cursor - If the oracle engine has opened a cursor for its internal processing, then it is implicit cursor.  Explicit cursor - It is also known as user defined cursor. When a user opens a cursor for processing data, the cursor is explicit cursor. |
| Explain about the cursor attributes.  Each cursor or cursor variable has four attributes:  %FOUND, %ISOPEN, %NOTFOUND and %ROWCOUNT  When appended to the cursor, these attributes return useful information about the execution of a data manipulation statement.  What are the restrictions of using cursor variables?  -PL/SQL tables cannot store cursor variables. -Remote subprogram cannot return the value of a cursor variable. |
| What is a trigger in PLSQL?  A trigger is a PLSQL block that is executed whenever an event occurs. It fires implicitly whenever the triggering event happens, a trigger never accepts argument. A trigger cannot be used for a SELECT statement.  What are the triggers supported in oracle?  -DML triggers -Instead of triggers -DDL triggers -Database event triggers  DML triggers  It is defined on a table and fires in response to an event like   - When a row is inserted to a table - When a row is updated  - When a row is deleted  Instead of trigger  This trigger is created on views. You can either use Insert or Update or Delete or all three actions.  What are triggering attributes?  Triggering attributes are used to catch event when you want to identify or to perform certain actions.  They are as follows:  Inserting  Updating  Deleting |
| What is the difference between a function and a procedure in oracle?  A function always returns a value back to the calling block.  What are packages?  A package is an encapsulated collection of related schema objects. A package is compiled and then stored in the database's data dictionary as a schema objects. These objects can be procedure, functions, variables, constants, cursors and exceptions. |
| Explain the difference between GRANT and REVOKE command.  GRANT command is used to allow a user to perform certain activities on the database. The REVOKE command disallows the user from performing certain activities.  Explain the difference between ROLLBACK and COMMIT commands.  The COMMIT command is used to save the modifications done to the database values by the DML commands.  ROLLBACK command is used to undo the changes made by the DML commands. This ensures the values that existed prior to the changes can be achieved. |
| Define Row level trigger.  Row level trigger is fired each time a row is affected by DML statements like Insert, Update and Delete. When no rows affected, the trigger is not executed at all.  Define Statement level triggers.  It is fired when statement affects rows in a table but the processing required is completely independent of the number of rows affected. |
| Define Joins and its types.  A join is a query that extracts corresponding rows from two or more tables, views or snapshots.  Types:  Equi-joins  Non-equi joins Self joins Outer joins  Equi-join - information from two or more tables are retrieved by using equality conditions.  Self joins - Self join is a join that relates to itself.  Outer joins - Outer join fetch the rows from two tables which matches the join condition and the rows which don't match the join condition. |
| Create Pl/SQL block dynamically and then execute it by calling 'DBMS\_SQL.EXECUTE'  DBMS\_SQL.EXECUTE function is used to execute cursor. It accepts the id of the cursor and returns the number of rows processed.  Syntax: DBMS\_SQL.EXECUTE ( c IN INTEGER) RETURN INTEGER;  Where c is the id of cursor. |
| Explain the statement provided by PL/SQL, i.e. Conditional Control Statements, Iterative Statements, Sequential Control Statements  Conditional control statements: they are the typical IF/ELSE statements. IF clause checks a condition, the THEN clause defines what to do if the condition is true and the ELSE clause defines what to do if the condition is false or null. Example:  IF sal < 3000 THEN sal\_increment := .12; ELSE sal\_raise := .09; END IF;  Iterative statements: Iterative statements uses loops to execute statements in iterations. The FOR loop for instance, lets you specify a range and then execute the statements. Example:  FOR i in 1..100 LOOP      SOME STATEMENTS  END LOOP;  Sequential Control Statements:- GOTO is an example of Sequential control statements. GOTO statement transfers control to the labeled statement. Example:  IF total > 25000 THEN GOTO print\_total;     ELSE GOTO calc\_total; |
| SQL vs. PL/SQL  SQL is a structured query language while PL/SQL is an extension of SQL by introducing a procedural flow. PL/SQL has blocks of statements. PL/SQL works like other procedural languages and has concepts like control statements, sequential statements, exception handling etc. |
| Both PL/SQL and Java/.NET code can be used to create Oracle stored procedures and triggers. Which of the one should be used and why?  Even though both PL/SQL and Java/.NET can be used, PL/SQL stands above these two in terms of integration overhead. This is because Java is an open source proprietary and Data manipulation is slightly faster in PL/SQL than in Java. |
| Explain how to see modified code in oracle, i.e. using Oracle Data Dictionary  Data dictionary in oracle is a read only set of tables providing information about changed schema objects, default values and lot more. The data dictionary is stored in database’s SYSTEM tablespace. We can use SQL statements (select only) to view data of data dictionary. |
| Explain how to keep a history of PL/SQL code changes.  Using AFTER CREATE schema trigger, once can keep a history of changes to code.  Example:  CREATE OR REPLACE TRIGGER change\_hist -- Store code in hist table     AFTER CREATE ON TEST.SCHEMA -- TEST IS schema name DECLARE BEGIN IF ORA\_DICT\_OBJ\_TYPE in ('PROCEDURE', 'FUNCTION', 'PACKAGE', 'PACKAGE BODY', 'TYPE', 'TYPE BODY') THEN     -- Store old code in SOURCE\_HIST table     INSERT INTO SOURCE\_HIST     SELECT sysdate, all\_source.\* FROM ALL\_SOURCE          WHERE TYPE = ORA\_DICT\_OBJ\_TYPE -- DICTIONARY\_OBJ\_TYPE IN 8i          AND NAME = ORA\_DICT\_OBJ\_NAME; -- DICTIONARY\_OBJ\_NAME IN 8i END IF; EXCEPTION     WHEN OTHERS THEN     raise\_application\_error(-20000, SQLERRM); END; |
| Explain the purpose of binary wrapper utility in oracle. How can we protect PL/SQL source code?  PL/SQL code can be protected using the binary wrapper utility. It is located in the ORACLE\_HOME/bin directory.  Syntax:  wrap iname=myscript.pls oname=xxxx.plb  There is no way to unwrap the \*.pls files and hence must be backed up. |
| Explain how to debug PL/SQL program.  One can debug PL/SQL program by printing the output using DBMS\_OUTPUT package. Put\_line can be used to display a line as shown below: set serveroutput on //displays buffer  begin     dbms\_output.put\_line(‘Sample line'); end; |
| How can we read and write operating system files from PL/SQL program?  The UTL\_FILE database package can be used to read and write operating system files. You need to have read /write access rights in that directory before the package can be used.  Example to write file: Fhandler is a variable of type UTL\_FILE.FILE\_TYPE  UTL\_FILE.PUTF(fHandler, 'Im writing to a file\n'); Example to read file:  UTL\_FILE.GET\_LINE(fHandler, buf); |
| How can we call DDL statements like CREATE, DROP, TRUNCATE, etc. from PL/SQL? Show in an example  EXECUTE IMMEDIATE command can be used to call DDL statements.   Example: begin execute Immediate 'TRUNCATE TABLE employee'; end; |

## How can we use dynamic SQL statements from PL/SQL?

EXECUTE IMMEDIATE command can be used to call DDL statements. This is available after oracle 8i.  
  
**Example:**  
EXECUTE IMMEDIATE 'CREATE TABLE employee (id NUMBER)';

|  |
| --- |
| How can we execute an operating system command from PL/SQL? Example There is no direct way to execute an OS command from PL/SQL. Indirect methods like database pipes, external procedure listeners can be used. The commands can be executed within the pipe and the listener picks it up and run the requests. Results are passed back on a different database pipe. |
| Illustrate how to loop through table in PL/SQL. Cursors can be used to loop through tables in PL/SQL.  **Example:** Employee cursor all employees for subject.  CURSOR emp\_cur (v\_sub\_no subject.subjectno%TYPE) IS      SELECT employeename FROM emp WHERE subjectno = v\_ subjectno; |
| What is a mutating and constraining table? A mutating table is a table that is being modified by an INSERT, UPDATE or DELETE statement. When any such table is targeted by a trigger, oracle throws an error because it is under a mutated state. Such error also occurs if a trigger attempts to change the primary, foreign or unique key columns of the table. Such tables are constraining tables. |
| Difference between stored procedures and functions Stored procedures don’t return any value while functions return values.  Stored procedures are mainly used to process a task while functions are used to calculate. Functions can be called from procedures while the other way is not possible |

Top of Form

Bottom of Form