

1.

a- Question:

What is a DBA in the context of database management systems?

Answer: (couldn't find a direct answer to this, so I am gonna leave this as is)

- A database administrator is the information technician responsible for directing or performing all activities related to maintaining a successful database environment
- Makes sure an organization's database and its related applications operate functionally and efficiently
- When adopting a new DBMS, the DBA is responsible for designing, implementing and maintaining the database

b- Question:

List at least 5 activities performed by a DBA

Answer:

[Common Oracle DBA Tasks \(from Oracle website\)](#)

As an Oracle DBA, you can expect to be involved in the following tasks:

1. Installing Oracle software
2. Creating Oracle databases
3. Performing upgrades of the database and software to new release levels
4. Starting and shutting down the database instance
5. Managing the storage structures of the database
6. Managing users and security
7. Managing database objects, such as tables, indexes, and views
8. Backing up the database and performing recovery operations when necessary
9. Monitoring the state of the database and taking preventive or corrective action as required
10. Monitoring and tuning database performance
11. Diagnosing and reporting critical errors to Oracle Support Services

c- Question:

What is the difference between a "role" and a "profile"

Answer:

Roles	Profiles
Collection of privileges	Collection of settings that limit resources and define use of passwords
Cannot be assigned when user created	Can be assigned when user created
Assign to user or role	Only assigned to user (not to role) (A profile can be assigned to any number of users, and a user can be assigned only one profile at a time. A newly assigned profile overrides the old one)
Acquired automatically and immediately	
Cannot assign a role to itself	

d- Question:

What is the difference between "authentication" and "authorization"

Answer:

Authentication	Authorization
Who is it?	Who can do it?
Cannot authorize without authentication	Granting and revoking authority Grant - assigns a permission to a database user Revoke - removes a permission from a database user
User accounts(userIDs) and passwords(sometimes same as OS)	DBA controls database security and authorization using Data Control Language (DCL)

e- Question:

What is a "data warehouse" and what is it used for?

Answer:

- Is a system that pulls together data from many different sources within an organization for reporting and analysis
- Reports created from complex queries within a data warehouse are used to make business decisions
- Organize and disambiguate repetitive data
- Maintain data history

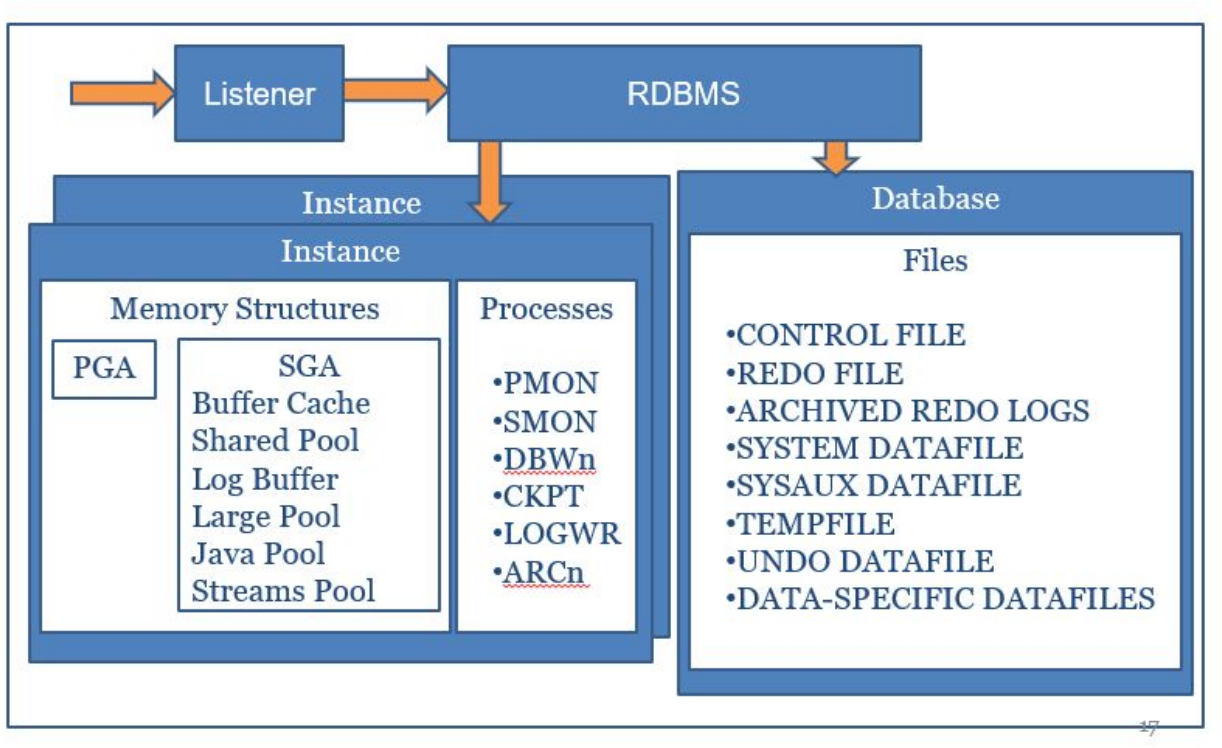
- Restructure data so that it delivers excellent query performance, even for complex analytic queries without impacting the operational system

2.

a- Question:

Draw a diagram to show the high-level system architecture of an ORACLE database. Make sure you clearly indicate the different functions performed by the components

Answer:

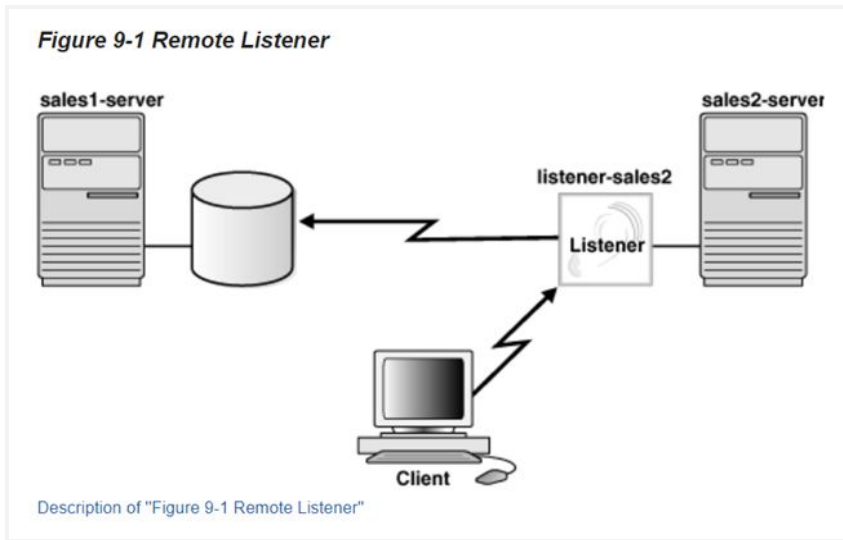


b- Question:

What does a database "listener" process do?

Answer:

- Receives incoming client connection requests and manages the traffic of these requests to the database server **will come back to it later



- I think that's all

c-Question:

What are each of the “SGA” and “PGA” used for in an ORACLE database? What are the main differences between the SGA and PGA

Answer:

- SGA(System/ Shared Global Area)
 - read/ write memory area that stores information shared by all database process and by all users of the database
 - Is allocated in memory and virtual memory
 - Has the following mandatory memory structures
 - Buffer Cache
 - Shared Pool
 - Log Buffer
 - Large Pool
 - Java Pool
 - Streams Pool
- PGA(Program Global Area)
 - Is a nonshared memory region that contains data and control information exclusively for use by an Oracle process
 - Is created by Oracle Database when an Oracle process is started
 - One PGA exists for each Server Process and each Background Process
 - Stores data and control information for a single Server Process or a single Background Process
- Differences
 - PGA cannot be shared between multiple processes
 - It is used only for requirements of a particular process
 - SGA is used for the whole instance and it is shared

3.

a-Question:

What is the difference between an “incremental” and a “full” backup?

Answer:

Incremental Backup	Full Backup
RMAN backup in which only modified blocks are backed up	Non-incremental RMAN backup
An incremental backup can be either a differential incremental backup or a cumulative incremental backup	The word "full" does not refer to how much of the database is backed up, but to the fact that the backup is not incremental
Speed of backup operation is faster than the speed of backup for Whole backup	Speed of backup operation depends on the amount it needs to be backed up
Less than 20% of the data change/day	More than 20% of the data change/day

b-Question:

List the steps taken by a DBA when recovering a database using one or more incremental backups

Answer:

****Am I stupid? I can't find shit. Maybe im just really bad at googling**

This is all I found from here:

To recover a restored datafile is to update it by applying archived redo logs and online redo logs, that is, records of changes made to the database after the backup was taken. If you use RMAN, then you can also recover datafiles with incremental backups, which are backups of a datafile that contain only blocks that changed after a previous incremental backup.

c-Question:

List the steps taken by a DBA when recovering a database using one or more full backups

Answer:

****Ald;kjfal;kdjfal;kdsjfl;aj**

d-Question:

Expand the acronyms “MTTF” and “MTTR” and describe the difference in importance and how it affects reliability calculations

Answer:

MTTF	MTTR
Mean Time To Failure	Mean Time To Repair
Is used to predict a product's failure rate	Is used to predict how long it will take to get a failed product running again
Used only for replaceable or non-repairable products, such as: <ul style="list-style-type: none"> ● Keyboards ● Mice ● Batteries ● Desk telephones ● Motherboards 	Items that are not repaired, that may have an MTTF number, will not have an MTTR prediction - because they will be replace, not repaired
Replaceable products that cannot be repaired	
Replaceable subsystem product within a repairable product	

4.

a-Question:

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b-Question:

What kind of backup strategy would you use for this system and why?

Answer:

c-Question:

What database roles are required?

Answer:

1. User-application user
2. Driver-application driver
3. User-application admin
4. Driver-application admin
5. sysdba

d-Question:

How would you assign database user accounts, and what privileges would those accounts have?

Answer: check the privileges for admin please

User accounts	Privileges
1. User-application user	Register, make an order
2. Driver-application driver	Register, accept an order
3. User-application admin	Block user with bad credit
4. Driver-application admin	Block driver with bad credit