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1) Write a conceptual narrative on the creation of an Oracle database.

To Create a New Database: -

1. **Create and Edit new parameter files** (init.ora): The instance System Global Area and background processes for any Oracle database is started using a parameter file. To create a new database, inspect and edit the following parameters of the new parameter file:

> DB_NAME
> DB_DOMAIN
> CONTROL_FILES
> DB_BLOCK_SIZE
> DB_BLOCK_BUFFERS
> PROCESSES
> ROLLBACK_SEGMENTS

2. **Check the instance identifier for your system:** The Oracle instance identifier should match the name of the database (the value of DB_NAME) to avoid confusion with other Oracle instances that are running concurrently on your system.

3. **Start SQL*Plus** and connect to Oracle as **SYSDBA**: Connect to the database as SYSDBA. Use the command below.

> $ SQLPLUS /nolog
> connect username/password as sysdba

4. **Start an instance:** Start the instance without mounting the database by using the STARTUP command

Create the database: Use this command to create the database SQL CREATE DATABASE statement,

5. **Back up the database**: Make a full backup of the system to make sure you have a complete set of files if media failure occurs.

2) Explain what the Pfile, Spfile and initialization parameters are. Pick five initialization parameters and describe them.

Initialization Parameters configuration parameters that affect the basic operation of the instance.

Pfile: Parameter file is a text or binary to store the database initialization parameters. The oracle instance reads the parameter file during startup which are then used to control the behavior of database instance and many other aspects as well.

Spfile: In Oracle9i, a new feature called SPFILE (server parameter file) was introduced. SPFILE is a binary file that contains the same information as the old PFILE. SPFILE permits dynamic changes without requiring you to restart that instance.

Initialization Parameters configuration parameters that affect the basic operation of the instance.

UNDO_TABLESPACE - specifies the undo tablespace to be used when an instance starts up. If this parameter is specified when the instance is in manual undo management mode, then an error will occur and startup will fail.

SESSIONS - specifies the maximum number of sessions that can be created in the system. Because every login requires a session, this parameter effectively determines the maximum number of concurrent users in the system. You should always set this parameter explicitly to a value equivalent to your estimate of the maximum number of concurrent users, plus the number of background processes, plus approximately 10% for recursive sessions.

DB_RECOVERY_FILE_DEST - specifies the default location for the flash recovery area. The flash recovery area contains multiplexed copies of current control files and online redo logs, as well as archived redo logs, flashback logs, and RMAN backups.

DB_NAME - specifies a database identifier of up to 8 characters. This parameter must be specified and must correspond to the name specified in the CREATE DATABASE statement. If you have multiple databases, the value of this parameter should match the Oracle instance identifier of each one to avoid confusion with other databases running on the system. The value of DB_NAME should be the same in both the standby and production initialization parameter files.

CONTROL FILES - which contains entries that describe the structure of the database (such as its name, the timestamp of its creation, and the names and locations of its datafiles and redo files). CONTROL_FILES specifies one or more names of control files, separated by commas.

3) Explain what the 'redo log is. How is it created and used?

The database maintains redo log files to protect against data loss. Specifically, after an instance failure, the online redo log files enable Oracle Database to recover committed data that it has not yet written to the data files. **It is created** as server processes writes every transaction synchronously to the redo log buffer, which the LGWR process then writes to the **online redo log**.

4. Explain UNDO and automatic UNDO management are.

Automatic UNDO Management: Oracle provides a fully automated mechanism, referred to as automatic undo management, for managing undo information and space. With automatic undo management, the database manages undo segments in an undo tablespace. **Beginning with Release 11g, automatic undo management is the default mode for a newly installed database**. An auto-extending undo tablespace named UNDOTBS1 is automatically created when you create the database with Database Configuration Assistant (DBCA).

UNDO Management: A mode of the database in which undo blocks are stored in user-managed undo Segments. It
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