DATA BASE

SQL
Structured Query Language

- SQL stand for "Structured Query Language Every relational database Software Intract with a Language know as SQL because it's a Simple english like Langage which guideline are provided by a Standard organization "ANSI".
  Adopted by all database like microsoft Oracle. my SQL etc...

- An SQL is very complex Language to reduce Into 5- sub language
  1. DDL ② DML ③ DQL ④ DCL ⑤ TCL

① DDL
(Data (defintion Language)
↳ Create, Drop, Truncate
Alter, Rename

(ii) DML (Data Manipulation Language)
↳ INSERT, UPDATE, DELE

(iii) DQL (Data Query Language)
↳ SELECT

(iv) DCL (Data control Language)
↳ Grant, Revoke

(v) TCL (Transuction control Language)
↳ Commit Rollback
Save Point

DDL. DML. DQL. DCL TCL.

TCL = (Transuction control Language)
↳ commit Rool back
Save point.

DBMS Types of DBMS.

(Data base Management System)

⇒ Data base Management System is the collection of data and set of Program to access to store those data in an easy efficient manner.

⇒ DBMS is a Software which is used to manage data base.

Ex
MySQL, Oracle etc

Types of Data Base Management System.

There are five type

1. Hierarchical DBMS.
2. Network DBMS.
3. Relational DBMS.
4. Object Oriented DBMS.
5. Distributed DBMS.

1. Hierachical DBMS.

In hierachical DBMS. the relationships among data are established so that one data element

2. Network DBMS

Network DBMS is one where the relationship among the data is the database of type many to many in the ~~network~~ from network

3. Relational DBMS.

In relational database the database is represented in the form of relation each relation modles

4 Object Oriented DBMS

. Object-oriented DBMS is derived from the model of the object-oriented programming paradigm. they are helpful in representing both consisted data

5. Distributed DBMS

A distributed database is a set of interconnected that is distributed over the Computer network of Computer

17) Sub Language of SQL.

SQL contains the following Sub Language. there are 5- Sub Language

DDL (Data definiction Language)
L) Create, Drop, truncate, Alter, Rename.

- DML (Data Manipulation Language)
  - INSERT, UPDATE, DELETE

- DQL (Data Query Language)
  - Select

- DCL (Data Control Language)
  - Grant, Revoke

- TCL (Transaction control Language)
  - commit, Roll back, Save point

- Table Constraints.

```
Create table Student(
Student integer Primary key,
S Name varachar (50) not null,
CPn: float,
location varachar (50), default 'Lahore'
```

Table Constraints

```
Create table Student(
S. Name varachar (50),
Student integer Primary key,
S. Name varchar (50) not null
CPn: float,
Location varachar (50), default 'Karachi'
```

Oracle Instance

When a database is started on a database server Oracle allocates a memory area called System Global Area (SGA) and start one or more process.

- This combination of the SGA and the oracle process is called an oracle Instance.

Responsibilities of DBA (Database Administrator)

Create and administer database. Database operates efficiently and without error. Making modification to the database structure.

- Maintaining the database and updating permissions.
- Merging old database into new ones.

Backing up and restoring data to prevent data loss.

Data Normalisation.

- a technique of organizing the data into multiple related tables to minimize

Student Table
Basic Table

rollno	name	branch	hod	office
	Ali	Cs	M.x	456
1	Hyder	Cs	M.x	456
2	Saad	CS	M.x	456
3	Maaz	Cs	M.x	456
4	Fayz	Cs	M.x	456

- Normalization reduce the Table in two type

roll	name	branch
2	Ali	CS
2	Alishy	Cs
3	Sadd	cs

branch	hod	office
CS	M.Y	3456
Cs	M.Y	3456
Cs	M.Y	3456

System global area / oracle.

In the data base management System developed by the oracle Corporation the System Global Area (SGA) forms the part of the System memory (RAM) Shared by all the processess belonging to a Single oracle Instance. the SGA contains all information nessary for the Instance operation.

background Processes.

Process

PMON: Process Monitor. Monitors backgrond

SMON:

P MON

DBWN

LGWR

CKPT

MMON and MMNL

RECO

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PMON :- Process Monitor.
- Monitors background process
- Clean up failed process
- Roll back the transaction
- Releases the resources held up the faild process.

SMON :- System monitor
- System level clean up activites
- Acts during crash recovery

DBWN :- Data base Writer
- writes modified blocks from the data base buffer cache to the datafile.

LGWR - log writer
- writes before the DBWn writes and only confirms that a commit operation has saccesed. when log buffer ted.

CKPT - Checkpoint Process
writes info to update
DB control files and headers
of data files

~~MA~~

MMON and MMUL = Manageability
monitor process.
MMON - Performs tasks related
AWR.
MMUL - Manageability Monitor
Lite Process - writes statistics
from the active session history

RECO - Recover Process.
optional background Process.
ARCn
CI00
Dnnn