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ROLL NO - 22 CSE 190

SEC - A

Course Title - DBMS

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A) Define and discuss data constraints?

Ans:- Constraints enforce limit to the data or type of data that can be inserted, updated, deleted, from a table.

→ The whole purpose of database constraints is to maintain integrity.

Some constraints are :-

→ Not Null

→ Unique

→ Default

→ Check

→ Key constraint (Primary key, Foreign key)

→ Domain constraint

B) Describe the components of DBMS?

The components of DBMS are :-

1. Hardware

2. Software

3. Data

4. users

5. Procedures

C) Create a table for student with following attributes
std::Number, sname varchar(2), Marks number, and Average
number (3,2). Enter 5 students details into it.

Query:- create database details;

use details;

create table student (std int , sname varchar(30),
marks int , Average int);

insert into student values (1 , "Abinash" , 60 ,),

(2 , "Romil" , 55 ,),

(3, "Avii", 65,),
(4, "omkar", 50,),
(5, "Ritesh", 30,);

desc student;

select * from student;

Table:-

sid	sname	marks	Average
1	Abinash	70	
2	Romit	55	
3	Avii	65	
4	Omkar	50	
5	Ritesh	30	

E) what is a Data Dictionary?

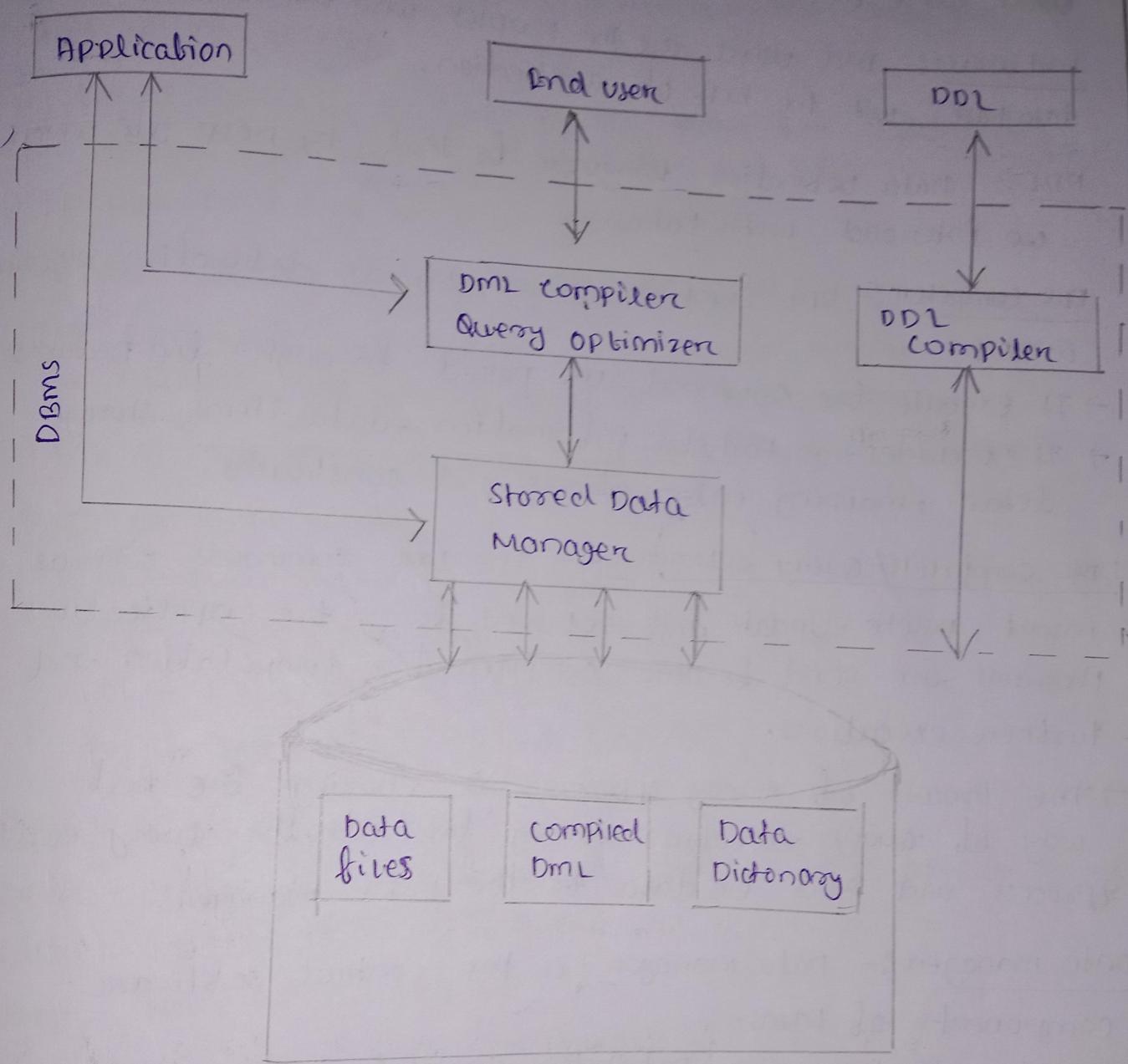
Data Dictionary is repository of description of data in Database.

It contains data relationship, constraints, storage structure, Access authorization, users details etc.

PART-II

1) Explain the structure of DBMS with neat diagram?

Ans:-



- DBMS act as an interface between end user and Database. where we can perform operations like insertion, deletion, updation, retrieval on the Database.
- The components of DBMS perform these required operations on the Database and provides necessary results to the users.

Application: Application components is visible to users where and who will enter their queries.

End users:- End users are the peoples who interact with the database with the help of application.

DDL:- Data definition Language so that by help of which we interact with Database.

DDL Compiler:- DDL compiler process schema definition describe in DDL.

- It execute the command we passed through the Database
- It includes metadata information, data items storage details, mapping informations and constraints.

DML compiler/Query optimizers:- The DML commands such as insert, delete, update and retrieved from the application programs are send to DML compiler for compilation and further executions.

- The process of query optimizer is choosing the best way of query execution among the all the query execution process and send the data to the Data manager.

Data manager:- Data manager is the central software components of DBMS.

- It is also known as Database control system.
- It controls DBMS information it also control handling buffers in main memory.
- It enforce constraint to maintain consistency and integrity.
- Synchronise the simultaneous operation perform by the users. It also control backup and recovery mechanism.

Data dictionary :- Data Dictionary is repository of description of data in database. It contains data relationship, contains storage structure, access authorization, users details.

Data files :- It contains data portion of the database.

Compiled DML :- The DML compiler converts the DML command which is high level language to low level code that is called as compiled DML.

Data models :- The Data model defines how the logical structure of a Database model and defines how data will be stored, accessed and updated. The purpose of Data model is to represent the data and make the data understandable.

Types of Datamodel :-

- 1) Hierarchical model
- 2) Network model
- 3) Entity-Relationship (ER) model
- 4) Relational model.

Discuss different Data models of Database ?

The types of datamodels are :-

- 1) Hierarchical model
- 2) Network model
- 3) Entity-Relationship model
- 4) Relational model

Hierarchical model : Data is organised even though a tree like structure with each record is having one parent and many children.

→ Drawback of this model is it follows on to many relationships and searching is difficult.

Network model :- Extension of hierarchical model. Data are represented in graph like structure.

→ Accessing all the data is easier and fast compare to hierarchical model.

Entity Relationship model :- In this Database models - Data are represent in the form of entity and their relationship Entity :- It is a real world object which is distinguishes from other objects.

Relational model :- In this model data are organised in two dimensional tabel by using rows and columns.
→ IT was developed in 1970 By E.F Codd.

3) Define database language? write its types?

The communication medium of interaction medium between the Database and user is called a database language.

→ SQL is the most friendly and mostly used Language.

Types of DBMS Language :-

DDL - Data Definition Language

DML - Data Manipulate Language

DCL - Data control Language

TCL - Transaction control Language

DPL :-

Create - Create is used to create database and database name

Alter - modification a database.

Drop - Help in deleting objects.

Truncate - erase all the records.

Comment - provide the comment line into the data dictionary.

Rename - Rename all object

DML :-

DML is used for accessing and manipulate the data

→ select - access the data from data from the database

Update - updating the data

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Delete the record from the database.

Insert :- inserting data to the database.

merge :- merge two tables.

call :- calls the SQL Language / Java Programs

Explain plan :- Explaining the data by using parameters.

Lock table :- for controlling concurrency.

DCL :- (Data control Language)

DCL is used for grant and revoke user access on a database on a Database

Grant - granting the permission and Providing the

Revoke - withdraw the permission

TCL :- (Transaction control Language) :

TCL has commands which are used to manage the transaction.

Commit :- used to set positive work

Save point :- helps in identifying a point where we save

Roll back :- It means the compiler can be roll back to the identifying point

Set transaction :- Parameters of changing setting like isolation and rollback point.

Q) What do you mean as mapping cardinalities and explain?

Mapping constraints can be explained in terms of mapping cardinality.

→ one to one

→ one to many

→ many to one

→ many to many

one to one :- A entity of entity A can be associated with almost one entity of entity set B and reverse.

Example :- Department - HOD

Department - Principal

one-to-many :- An entity of entity set A can be associated with any number of entity of entity set B and entity of entity set B can be associated with at most one entity of entity set A.

Department - student

Database - student

many-to-one :- An entity of entity set A can be associated with almost one entity of entity set B and an entity of entity set B associated with all entity of entity set A.

Example:- Subject - student

many-to-many :- An entity of entity set A can be associated with all entity of entity set B and same.

Example:- Student - subject

Student - sports

- 5) 1) write a query to create a table employee with empno, ename, designation, and salary.

Ans:- Create Database Details;

use details;

create table ~~Employee~~ employee (empno int , ename varchar (30) , designation varchar (30) , salary int);

desc employee;

- 2) write a query to display the column name and data type of the table employee.

Ans:- Create Database Details;

use details;

create table employee (empno int , ename varchar (30) , designation varchar (30) , salary int);

desc employee;

select * from employee;

g) write a query to create a table from an existing table with all the fields.

4) write a query to add multiple columns in to employee.

Create Database Details:

use details;

use default ,
create table employee (emp-no int , emp-name varchar(30),
designation varchar(30));

dese employee;

desc employee;
alter table student add salary int , age int;

desc employee;

Select * from employee;