SQL Assignment - 01

Q.1) What is Relational Database Management system (RDBMS)? What are the advantages of a database management system over a file system?

→ A Relational database management system is a program that allows us to create, updata and administer a Relational database. Most RDBMS systems use the SQL language to access the database

- Advantage of DBMS over file system

1.) Data Redundancy and inconsistency
The file system cannot control the redundancy of data where as DBMS controls redeindancy by maintaining a single repository of data and is accessed by many users.

2.) Data sharing
The file system does not allow sharing of data or shering is too complex, Whereas in DBMS, data can be shared easily due to centralized system.

3) Data searching
for every search operation performed on the file system, a diffrent application program has to be written, while DBMS provides inbuilt searching operations.

4) System crashing
Ones the system gets crashed there will be no recovery of data that is been lost in file system. but in DBMS we have a recovery manager which retrieves the data

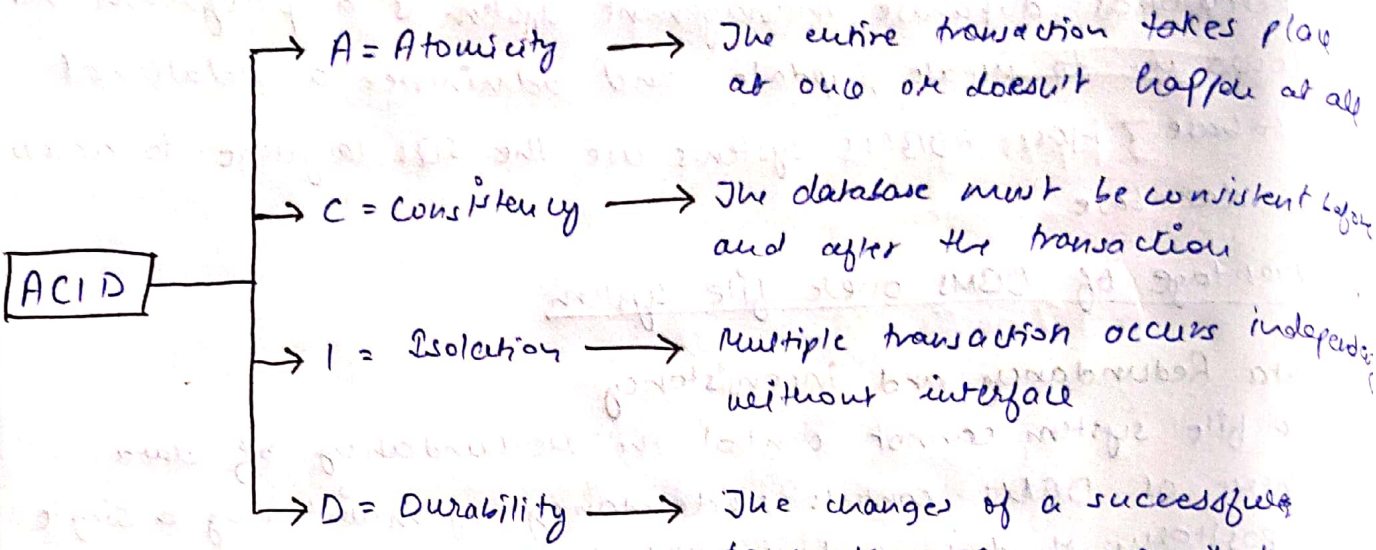
5.) Easily Maintanance

6) Backup

7.) Interface - It provide different multiple user interfaces like graphical user interface and application user interface.

Ques 02 In a DBMS, explain the ACID properties?

→ In order to maintain consistency in a database, before & after transaction, certain properties are followed. These are called ACID properties.

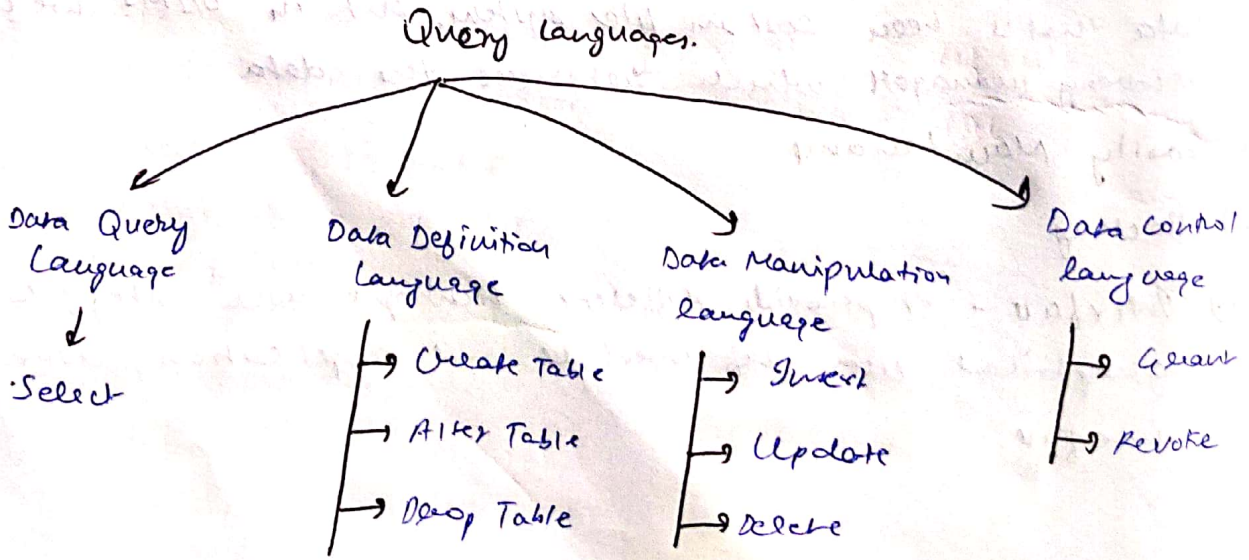


Ques 03 Explain the concept of normalization

→ • Normalization is the process to ~~diminate~~ eliminate data redundancy and enhance data entigrity in the table
• It also helps to organize data in the database
• It is a multistep process that sets the data into ~~tabular~~ tabular form and removes the duplicated data from the relational tables

Ques 04 Explain the many type of query languages used in relational database, DQL, DML, and DDL

→



• DDL

It consists of the SQL commands that can be used to define the database schema.

1.) Creating Table

```
Create Table "table name"
( "column1" "data type",
"column2" "data type",
"column 3" "data type" );
```

2.) Alter Table

```
ALTER TABLE
table name
ADD columnname
datatype;
```

```
ALTER TABLE
table name
DROP columnname
datatype;
```

• DQL

DQL statements are used for performing queries on the data within schema objects.

```
Select * from "Table name"
```

• DML

It deals with the manipulation of data present in the database

→ Insert

```
Insert into "table name"
( first column,...last column) values (first value,...last value)
```

→ Update

```
Update "table name" set "columnname" = "new value"
[, "next column" = "new value 2" ...] where
"column name" OPERATOR "value" [and/OR "column"
operator "value" ];
```

→ Deleting

```
delete from "table name" where "column name" operator
"value" [and/or "column" operator "value"]
```

Ques5 What is the difference between the main key and a composite key? give instances of how primary key and composite are used

→ Primary key

A primary key constraint uniquely identifies each record in a table.

A Primary keys column must contain unique values and cannot have null values

A Table can have only one primary key, which may consist of single or multiple columns

Composite key

A composite key is a combination of two or more columns in a table that can be used to uniquly identify each row in the table when the columns are combined uniqueness is guaranteed. But when it taken individually it does not guarantee uniqueness

Syntax

Primary key

```
create table "table_name"(
column1, datatype1,
column2 datatype2,
column1 datatype1,

primary key (column_name)
)
```

composite key

```
create table table_name(
column1 datatype1,
column1 datatype1,
column1 datatype1,
primary key( column1name,
             column2name);
```

Ques6 create a table primary key, a column default value, and a column unique constraints in SQL

```
create Table student(
student_id int not null,
student_name varchar(50) unique,
age int,
gender varchar(1),
location varchar(100),
PRIMARY KEY (student_id)
);
alter table students
alter location set default 'delhi';
```