**SQL Assignment 1**

1. What is a relational database management system (RDBMS)? What are the advantages of a database management system over a file system?

**Ans.** An RDBMS is a type of database management system (DBMS) that stores data in a row-based table structure which connects related data elements. An RDBMS includes functions that maintain the security, accuracy, integrity and consistency of the data.

**Advantages**-

1. Can handle large amount of data
2. Store data in tabular format that is easy to use
3. Can be accessed through multiple users at a time.
4. Can be normalized.
5. Uses ACID model to store data.
6. In a database management system, explain the ACID properties.

Ans. ACID – Atomicity, consistency, Isolation and Durability.

1. Atomicity- The entire transaction takes place at once or doesn’t happen at all
2. Consistency- The database must be consistent before and after the transaction.
3. Isolation- Multiple Transactions occur independently without interference.
4. Durability- The changes of the successful transaction occur even if the system failure occurs.
5. Explain the concept of normalization.

Ans. Normalization divides the larger table into smaller and links them using relationships. The normal form is used to reduce redundancy from the database table. Normalization is the process of organizing the data in the database. Normalization is used to minimize the redundancy from a relation or set of relations. It is also used to eliminate undesirable characteristics like Insertion, Update, and Deletion Anomalies.

1. Explain the many types of query languages used in relational databases. DQL, DML, DCL, and DDL are some examples.

Ans. Different type of query languages are as follows-

1. DDL-Data definition language- DDL allows users to create, modify, and destroy the schema of the database objects
2. DML- Data Manipulation language - it is used to manipulate the data base. (Eg- Select, insert, update, Delete command)
3. DCL-Data control language- Allow DBA to manage the rights and permissions of the data in the database. types- Grant DCL command & Revoke DCL command.
4. DQL- Data query language. This is used for retrieving the data. The DQL statements perform queries on the data and info within schema subjects. It gets the schema relation on the basis of the query that gets passed to it.
5. What is the difference between the main key and a composite key? Give instances of how primary key and composite are used.

Ans. A composite key is also a primary key, but the difference is that it is made by the combination of more than one column to identify the particular row in the table. Main key is also called as primary key.

Primary key can be used to uniquely identify a row at time where is no such key we can define a combination of column for such task that is called as composite key.

1. Create a table with a primary key, a column default value, and a column unique constraint in SQL.

Ans. Create table task( S.No int primary key, Name varchar (25) unique, address varchar(200) DEFAULT ‘India’);