**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?

The software used to store, retrieve, query data that is stored in relational database is called relational database management system.

Advantages:

* Data Redundancy
* Data Sharing
* Data Concurrency
* Data Searching
* Easy Maintenance
* Backup
* Interfaces
* Data Security
* System Crashing

1. In a database management system, explain the ACID properties.

ACID properties stand for atomicity, consistency, isolation and durability.

* Atomicity: The entire transaction takes place at once or doesn’t happen at all.
* Consistency: The database must be consistent before and after the transaction.
* Isolation: Multiple transactions occur independently without any interference.
* Durability: Even if the system fails, the changes of a successful transaction occur.

1. Explain the concept of normalization.

It’s the process of organizing the data in a database. It includes creating tables, establishing relationship between those tables according to rules designed both to protect the data and to make database more flexible by eliminating redundancy and inconsistent dependency.

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

DQL stands for data query language and will include select command. It is used to retrieve data from the database.

DML stands for data manipulation language and includes insert, update and delete commands. They are used to make any changes to the tables in the database.

DDL stands for data definition language. It includes create, alter and drop commands.

1. What is the difference between the main key and a composite key? Give instances of how primary key and composite are used.

Every table will have primary key. It’s a good habit to have primary key for every table.

Foreign key is used to refer to other table. Its not compulsory that every table must have foreign key.

Primary key example:

create table emp\_info

(

first\_name varchar(20),

last\_name varchar(20),

id int not null,

age int,

city varchar(20),

state varchar(20),

primary key (id)

);

Foreign key example:

Create table department

(

Depid int not null,

Depname varchar(50),

Empid int,

Primary key (depid),

Foreign key (empid) references emp\_info(id)

);

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

create table emp\_info

(

emp\_name varchar(20) unique,

id int not null,

age int,

city varchar(20),

state varchar(20),

primary key (id)

);