Final project(data base )

Ans 1 : a) Query

Ans 2 :  c) Relational algebra

Ans 3 :  b) Join

Ans 4 : a) Union

Ans 5 : c) Select

Ans 6 : c) Select

Ans 7 :  a) Schema diagram

Ans 8 : b) Relational algebra

Ans 9 :Data models define how the logical structure of a database is modeled. Data Models are fundamental entities to introduce abstraction in a DBMS. Data models define how data is connected to each other and how they are processed and stored inside the system.

Ans 10 :Normalization is the process of organizing data in a database. This includes creating tables and establishing relationships between those tables according to rules designed both to protect the data and to make the database more flexible by eliminating redundancy and inconsistent dependency.

Ans 11 :

1. Greater overall database organization.

2. Reduction of redundant data.

3. Data consistency within the database.

4 . A much more flexible database design.

5 . A better handle on database security.

Ans 12 :Denormalization is a database optimization technique in which we add redundant data to one or more tables. For example, in a normalized database, we might have a Courses table and a Teachers table. Each entry in Courses would store the teacherID for a Course but not the teacherName.

Ans 13 : A data warehouse is a relational database that is designed for query and analysis rather than for transaction processing. It usually contains historical data derived from transaction data, but it can include data from other sources.

Ans 14 : Indexing is a way to optimize the performance of a database by minimizing the number of disk accesses required when a query is processed. It is a data structure technique which is used to quickly locate and access the data in a database. Indexes are created using a few database columns.

Ans 15 :

1 . No indexes.

2 . Stored procedures are excessively compiled.

3 . Triggers and procedures are without SET NOCOUNT ON.

4 . Complicated joins making up inadequately written query.

5 . Cursors and temporary tables showcase a bad presentation.

Ans 16 :

1 .User input should not be allowed while transactions.

2 . While browsing, transactions must not be opened of data.

3 . Transactions must be kept as small as possible.

4 .Lower transaction segregation levels.

5 .Least information of data must be accessed while transacting.

Ans 17 : A table scan is the reading of every row in a table and is caused by queries that don't properly use indexes. Table scans on large tables take an excessive amount of time and cause performance problems . on the other hand An index scan or table scan is when SQL Server has to scan the data or index pages to find the appropriate records. A scan is the opposite of a seek, where a seek uses the index to pinpoint the records that are needed to satisfy the query.

Ans 18 : Fragmentation most generally means the process of fragmenting—breaking into pieces or being divided into parts. It can also refer to the state or result of being broken up or having been divided.

Ans 19 :

“Nested Loops” is the simplest operator of the bunch.

The “Merge” algorithm is the most efficient way to join between two very large sets of data which are both sorted on the join key.

The “Hash” join type is what I call “the go-to guy” of the join operators. It’s the one operator chosen when the scenario doesn’t favor in any of the other join types. This happens when the tables are not properly sorted, and/or there are no indexes. When SQL Server Optimizer chooses the Hash join type, it’s usually a bad sign because something probably could’ve been done better (for example, adding an index). However, in some cases (complex queries mostly), there’s simply no other way.

Ans 20 :SQL Server supports table and index partitioning. The data of partitioned tables and indexes is divided into units that may optionally be spread across more than one filegroup in a database. The data is partitioned horizontally, so that groups of rows are mapped into individual partitions.