

Final project

1. a) Query
2. c) Relational algebra
3. b) join
4. a) union
5. c) select
6. c) select
7. a) Schema diagram
8. b) Relational algebra
9. A data model (or datamodel) is an abstract model that organizes elements of data and standardizes how they relate to one another and to the properties of real-world entities.
10. Normalization is the process of reorganizing data in a database so that it meets two basic requirements: There is no redundancy of data, all data is stored in only one place. Data dependencies are logical, all related data items are stored together.
11. Benefits of Normalization
 - Greater overall database organization.
 - Reduction of redundant data.
 - Data consistency within the database.
 - A much more flexible database design.
 - A better handle on database security.
12. Denormalization is a database optimization technique in which we add redundant data to one or more tables
13. Data warehousing is the electronic storage of a large amount of information by a business or organization. A data warehouse is designed to run query and analysis on historical data derived from transactional sources for business intelligence and data mining purposes.
14. Index hunting is the process of boosting the collection of indexes which help in improving the query performance as well as the speed of the database.
15. The disadvantages of query are:
 - No indexes.
 - Stored procedures are excessively compiled.
 - Triggers and procedures are without SET NOCOUNT ON.
 - Complicated joins making up inadequately written query.
 - Cursors and temporary tables showcase a bad presentation.
16. . Ways to efficiently code transactions: User input should not be allowed while transactions. While browsing, transactions must not be opened of data.
17. A table scan is performed on a table which does not have an Index upon it (a heap) – it looks at the rows in the table and an Index Scan is performed on an indexed table – the index itself.
18. the act or process of fragmenting; state of being fragmented. the disintegration, collapse, or breakdown of norms of thought, behavior, or social relationship. the pieces of an exploded fragmentation bomb or grenade.
19. Sort merge join is used to join two independent data sources. They perform better than nested loop when the volume of data is big in tables but not as good as hash joins in general. They perform better than hash join when the join condition columns are already sorted or there is no sorting required.

20. Table partitioning enables you to divide the rows of large tables into smaller units, called partitions, and manage each partition individually. The table appears as one single unit to the application, but it is physically divided into multiple partitions in the database.