PART I

1. (a)Slow access time

(b) Presence of redundant

(c) Inconsistent data

(d) Data Integrity Problems

(e) Difficulty in recovery of corrupt data

1. (A)(DBMS) database management system is a computer program used to create, process, and administer the database.

(B)Advantages of DBMS

1. Redundancy problem solved

DBMS, all the files are integrated in a single database. Therefore, there is no chance of duplicate data.

(b) It has a very high security level

Data security level is high by protecting your precious data from unauthorized access.

(c) Presence of data integrity

Data integrity makes unification of so many files into a single file. DBMS allows data integrity, which makes it easy to decrease data duplicity Data integration, and reduces redundancy as well as data inconsistency.

(d) Support Multiple Users

DBMS allows multiple users to access the same database at a time.

(e) Avoidance of inconsistency

DBMS controls data redundancy and also controls data consistency

Disadvantages of DBMS

(a)Size

The functionality of DBMS makes use of a large piece of software which occupies megabytes of disk space

1. Performance

May not run as fast as desired

1. Increased cost

Database system requires sophisticated hardware and software and highly skilled personnel

1. Complexity

DBMS adds an additional layer of complexity to the data.

1. Reliability

A database system is more vulnerable to failure since the complete structure is dependent on the database.

3.(a) Hardware

(b) Software

(c)Data

(d) Procedure

(e) Data access language

4.(a)Update anomaly.

An update anomaly is a data inconsistency that results from data redundancy and a partial update

(b) Insert anomaly

An insertion anomaly is the inability to add data to the database due to the absence of other data

(c) Delete anomaly

A deletion anomaly is the unintended loss of data due to deletion of other data.

1. A hierarchical database is a data model in which data is stored in the form of records and

Organized into a tree like structure.

1. Relational database model is a data model that is used to organize, manage and store data

In a database.

1. Entity relational model is a data model used to define data elements and relationship for a specified system
2. A table is a relation that contains rows and column

Characteristics of a table

1. A cell must contain only a value.
2. Rows contains data about entities.
3. Columns contains attributes of rows.
4. All values in a column must be of same kind.
5. Each column must have a unique name Each column has a unique name
6. The order of columns is unimportant.
7. The order of rows is unimportant.
8. No two rows must be identical
9. (a) Primary key- This is a column that is unique and does not have any repeated values.

(b)Foreign key – This is a column that is unique and exists in two tables. In one table as the primary key and the other table as the foreign key.

(c) Candidate key – This are two or more column capable of becoming a primary key in a table. Only one can become the primary key.

(d) Composite key- This is a key that consist of two or more column.

(d) Surrogate key – This is a unique column created by the computer . Which serve as a primary key for the table.

10. (a) Data integrity constraint - Value in a column are of the same kind.

(b) Entity integrity constraint – The primary key must have unique values inserted into each rows in a table

(C) Referential integrity constraint – The values in the foreign key must be the same in the primary key

11. Types of join

Explicit join- This is when you use the word join you your query to join two or more tables.

Implicit join – This is where the join operator is not used in the query instead, a comma is used to join two more tables. .

12. Functional dependency – this is when one set of attributes determines two or more set of attributes.

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14. Union rule

A 🡪 B , A 🡪 C 🡪 A 🡪 (B,C).

Decomposition rule

A 🡪 (B,C) 🡪 A 🡪B, A 🡪 C

PART II

1. Business rule allows the creator to develop relationship participation rules and constraints and to create correct data model.

Entity

Suppliers

Staff

Patient

Carriers

BUSINESS RULE.

Many staff can have different patient..

One carrier can have many Suppliers.

One carrier can give supplies to many staff.

1. .Entity

Course

Student

Interview

Company

Position

BUSINESS RULE

One student can offer many courses

Many student and be interviewed many times.

One company can do many interviews

One company can have many positions.