Summary:

1. \*\*Database:\*\* An organized collection of structured information or data stored electronically in a computer system.

2. \*\*DBMS (Database Management System):\*\* Collection of programs enabling users to create and maintain databases. It serves as an interface between the database and users, allowing data retrieval, update, and management.

3. \*\*Popular DBMS Examples:\*\* Oracle Database, MySQL, Microsoft SQL Server, PostgreSQL, MongoDB, IBM DB2.

4. \*\*Advantages of DBMS:\*\*

- Redundancy control

- Restricted unauthorized access

- Multiple user interfaces (CLI, GUI, Web, Mobile)

- Backup and recovery

5. \*\*Disadvantages of File Processing System:\*\*

- Data redundancy and inconsistency

- Difficult in accessing data

- Data isolation

- Data integrity challenges

- Lack of concurrent access

- Security problems

6. \*\*Two Types of DBMS:\*\*

- R-DBMS (Relational Database)

- NR-DBMS (Non-Relational Database)

7. \*\*Structured Query Language (SQL):\*\* A programming language used for querying, manipulating, and defining data in relational databases.

8. \*\*Client-Server Architecture in DBMS:\*\* Involves a client (user interface) and a server (data storage and processing) communicating over a network.

9. \*\*CRUD Operations in DBMS:\*\* Create, Read, Update, and Delete - fundamental operations for manipulating data in a database.

10. \*\*MySQL Data Types:\*\*

1. Numeric Data Types:

• INT: Used to store whole numbers within a specified range.

• FLOAT: Used to store single-precision floating-point numbers.

• DOUBLE: Used to store double-precision floating-point numbers.

• DECIMAL: Used to store exact numeric values with a specified precision and scale.

2. String Data Types:

• VARCHAR: Used to store variable-length strings with a maximum length.

• CHAR: Used to store fixed-length strings with a specified length.

• TEXT: Used to store large strings of text.

3. Date and Time Data Types:

• DATE: Used to store a date (year, month, and day).

• TIME: Used to store a time (hour, minute, and second).

• DATETIME: Used to store a date and time combination.

• TIMESTAMP: Used to store a timestamp representing a specific point in time.

4. Boolean Data Type:

• BOOLEAN or BOOL: Used to store boolean values (true or false).

5. Binary Data Types:

• BINARY: Used to store fixed-length binary data.

• VARBINARY: Used to store variable-length binary data.

• BLOB: Used to store large binary objects.

6. Enumerated Data Type:

• ENUM: Used to store one value from a predefined set of values.

7.JSON Data Type:

• JSON: Used to store and manipulate JSON (JavaScript Object Notation) data.

11. \*\*Basic MySQL Commands:\*\*

1. SHOW DATABASES;

2. CREATE DATABASE <database name>; Or CREATE DATABASE IF NOT EXISTS <database name>;

3. USE <database name>;

4. DROP DATABASE <database name>; or DROP DATABASE IF EXISTS <database name>;

5. CREATE TABLE <table name> (

<field name1> <DATA TYPE>,

<field name2> <DATA TYPE>,

<field name3> <DATA TYPE>,

<field name4> <DATA TYPE>

);

6. DESCRIBE <table name>; or DESC <table name>;

7. INSERT INTO <table name> VALUES (<data1>, <data2>, <data3>, <data4>);

or

INSERT INTO <table name> (<field name1>, <field name2>, <field name3>)

VALUES (<data1>, <data2>, <data3>);

8. SELECT \* FROM <table name>;

9. SHOW TABLES;

10. DROP TABLE <table name>;