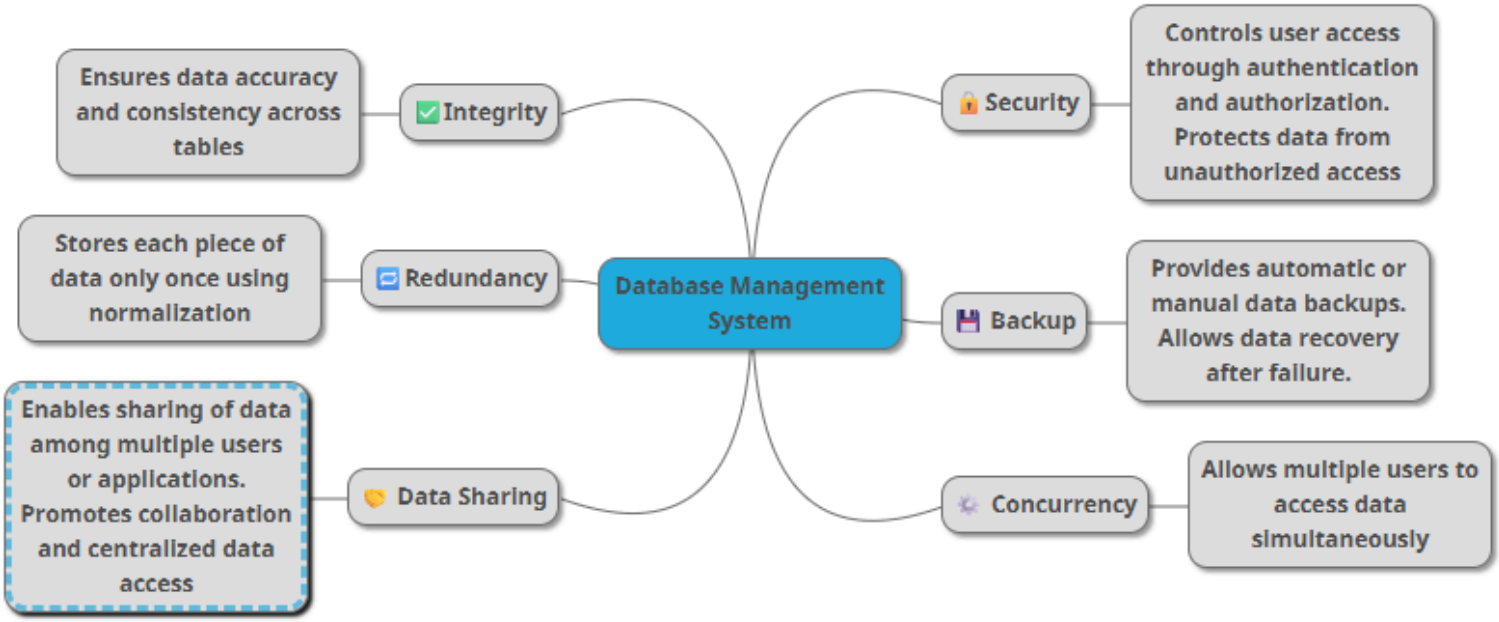
Assignment 1 :

	Flat File Systems	Relational Databases
Structure	Data is stored in a single file or multiple text files Simple, single table structure	multiple related tables with defined structures. Consists of rows and columns Multiple tables with relationships
Data Redundancy	High — the same data may appear in multiple files because there is no way to connect related data efficiently	Low — data is stored once and shared across tables using relationships, which minimizes duplication.
Relationships	Does not support relationship , each file is independent	Support relationships. -One to One . -One to many . -Many to many. Through keys and constraints.
Example Usage	Used for simple scalability , excel file	Used for simple scalability , excel file
Drawbacks	Limited Scalability Limited query and reporting capabilites	Slower for every simple tasks , due to overhead Need for SQL knowledge It can be complex to understand

Assignment 2 :



Assignment 3 :

System Analyst

- Works closely with clients or stakeholders to gather and understand their needs.
- Defines the system and functional requirements for the database project.
- Acts as a bridge between users and technical teams

Database Designer

- Designs the structure of the database (tables, relationships, keys).
- Creates the **Entity-Relationship Diagram (ERD)** to model data relationships.
- Ensures the design supports efficiency, integrity, and minimal redundancy.

Database Developer

- Builds the actual database based on the design.
- Writes **SQL queries**, stored procedures, and scripts.
- Implements business logic and ensures the database works correctly with the application.

Database Administrator (DBA)

- Manages database security, user roles, and access permissions.
- Performs **backups, recovery, and maintenance** to ensure smooth operation.
- Tunes performance and monitors the health of the database system.

Application Developer

- Builds the web, desktop, or mobile applications that use the database.
- Connects the application to the database through **APIs** or database drivers.
- Ensures data flows properly between the user interface and the database.

BI (Business Intelligence) Developer

- Analyzes data to help businesses make informed decisions.
- Creates **reports, dashboards, and visualizations**.
- Works with **data analysis, data mining, and machine learning** tools to find patterns and insights