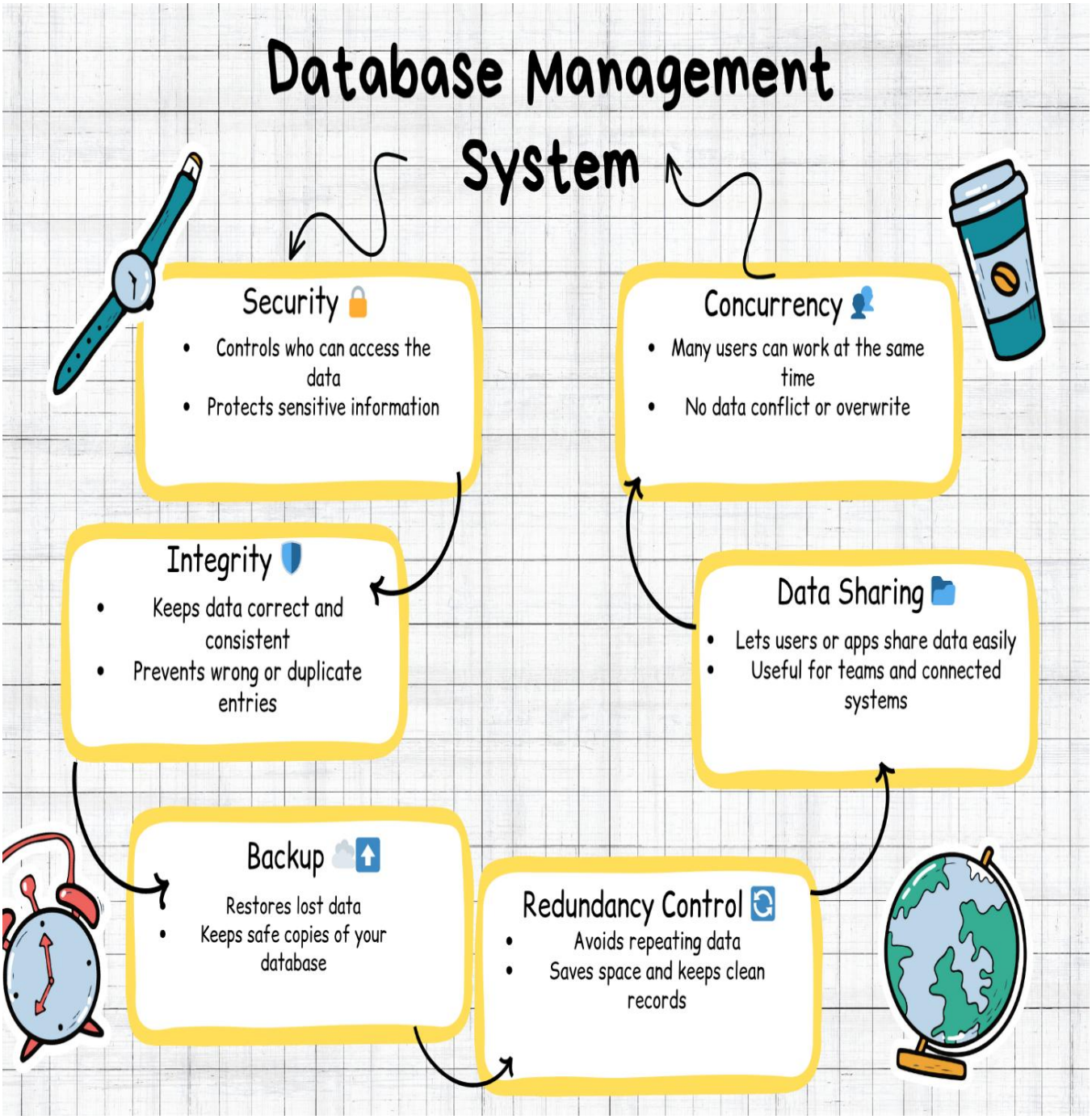
DATABASE SEARCH AND REPORTING

ABSTRACT

This report covers key database roles, types of databases, and the benefits of using a Database Management System (DBMS). It also highlights the connection between cloud storage and modern databases, offering a clear and practical guide for beginner

Point	Flat File	Relational Database
What it is	One big table or file	Many linked tables
Data repeat	Yes, same info is repeated	No, info is shared between tables
Links	No links between data	Data is connected using IDs (keys)
Easy to use?	Yes, very simple	A bit harder, needs some learning
Speed	Slow with big data	Fast with big data
Control	Little control	Strong control (rules, users, roles)
Tools used	Excel, Notepad	MySQL, PostgreSQL, Oracle
Best for	Small jobs, short-term use	Business, apps, big systems
Problem	Messy and slow when data grows	Needs setup, but works well long-term

DBMS Advantages – Mind Map:



Roles in a Database System

System Analyst

- **Role:** Understands business needs and turns them into database requirements.
- **Think of them as:** The bridge between the business team and developers.

Database Designer

- **Role:** Designs the structure of the database (tables, relationships).
- **Think of them as:** The architect of the data system.

Database Developer

- **Role:** Builds the database using SQL and tools.
- **Think of them as:** The engineer who makes the system work.

Database Administrator (DBA)

- **Role:** Maintains performance, security, and backups.
- **Think of them as:** The database bodyguard and mechanic

Application Developer

- **Role:** Builds apps that use the database.
- **Think of them as:** The one who brings data to life through software.

BI Developer

- **Role:** Turns data into charts and reports.
- **Think of them as:** The storyteller who helps businesses make decisions.

Types of Databases

📊 SQL — Relational Databases

- Tools: MySQL, PostgreSQL, Oracle
- Best for: Structured data (sales, inventory)

📦 NoSQL — Non-Relational Databases

- Tools: MongoDB, Cassandra
- Best for: Unstructured data (real-time apps, social media)

🏢 CD — Centralized Database

- Single server or location
- Use case: Small businesses

🌍 DDB — Distributed Database

- Data spread across locations
- Use case: Large/global systems

☁️ CD — Cloud Database

- Hosted on AWS, Azure, Google Cloud
- Use case: Web apps, mobile apps, remote teams

Cloud Storage and Databases

1) What is Cloud Storage?

Cloud storage is a service that lets you save data online instead of on local computers. It stores files, apps, and databases on remote servers managed by cloud providers.

2) How Does It Support Databases?

- tore large amounts of data
- Scale resources automatically
- Be accessed securely from anywhere

3) Advantages of Cloud-Based Databases:

- **Scalability:** Easily handle more users or data as needed
- **Accessibility:** Access data from any device or location
- **Maintenance-Free:** No need to manage hardware or updates
- **Backup & Recovery:** Built-in data backup options
- **Cost Efficiency:** Pay-as-you-go pricing model

4) Disadvantages or Challenges:

- **Internet Dependence:** Requires strong, constant internet connection
- **Data Security Risks:** Sensitive data is hosted off-site
- **Limited Customization:** Providers manage some parts of the system
- **Vendor Lock-in:** Hard to switch providers once committed