

UNIT 11

DATABASES VS. SPREADSHEETS

Objectives: at the end of the lesson, students will be able to:

1. identify the purpose of databases and spreadsheets;
2. read for a specific purpose;
3. analyze and compare the use cases, functionalities, and advantages of databases and spreadsheets in different scenarios.

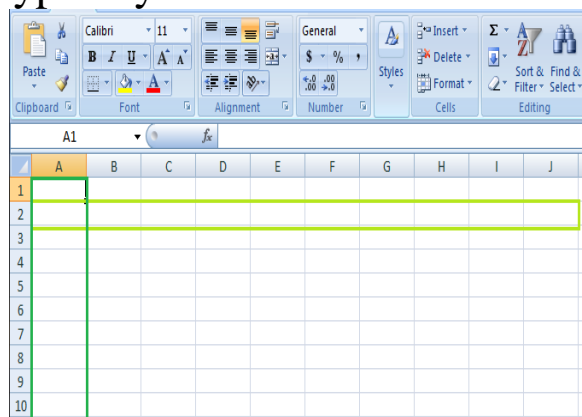
Lead-in: Let's discuss

1. What are some common uses of spreadsheets?
2. What kind of information do you find in databases?

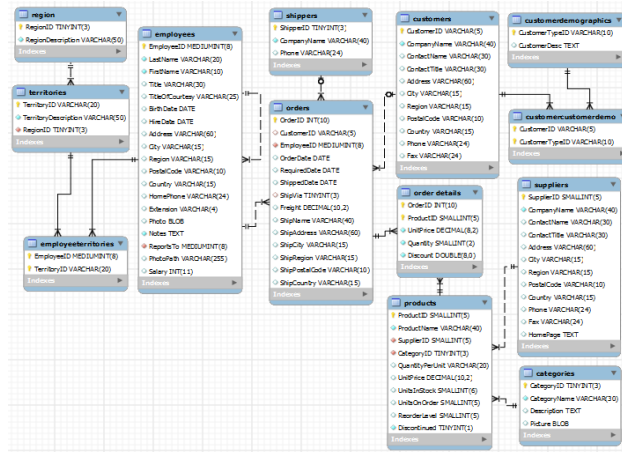
Spreadsheets: Designed for data entry, calculation, and simple analysis. Useful for small datasets or personal use.

Databases: Designed for managing large volumes of data, enabling efficient storage, retrieval, and manipulation. Suitable for complex data relationships and multi-user access.

Spreadsheets: Grid-based interface (rows and columns), formula-driven calculations, typically used for numerical or textual data.



Databases: Structured data storage with tables (entities and attributes), supports complex queries, and relationships between data tables.



Vocabulary Building

Key Terms

Worksheet – a single page of a spreadsheet

Example: *A worksheet (also known as a spreadsheet) consists of cells in which you can enter and calculate data. The cells are organized into columns and rows. A worksheet is always stored in a workbook. A workbook can contain many worksheets.*

Database – A database is an organized collection of structured information, or data, typically stored electronically in a computer system.

Example: *A database is usually controlled by a database management system (DBMS).*

Field – In the context of technology and computing, a field can be seen as a specific area in a database or a form where you enter data. It's essentially a place where you can store information, such as a name or an address in a form, or a piece of data in a spreadsheet or database.

Example: *Enter the client names and addresses into the database fields.*

Query- A query is a request for data or information from a database table or combination of tables.

Example: *In the context of queries in a database, it can be either a select query or an action query.*

Spreadsheet – is a computer program that represents information in a two-dimensional grid of data, along with formulas that relate the data.

Example: Historically, a spreadsheet is an accounting ledger page that shows various quantitative information useful for managing a business.

Cell – is a unit of a spreadsheet that holds a piece of information.

Example: Use the data in the cells of a worksheet to create these charts.

Activity: Read the sentence pairs. Choose which word best fits each blank.

1. timecard

2. database

1. An employee must correctly record their work hours on a _____.
2. Important information is often stored in a _____.

1. budget

2. workbook

1. A _____ helps determine how a company spends money.
2. A _____ file created by a spreadsheet is often three pages long.

Reading

Understanding Databases vs. Spreadsheets

Databases and spreadsheets are fundamental tools for managing and analyzing data, each serving distinct purposes depending on the complexity and scale of information.

Spreadsheets provide a user-friendly interface for data entry, calculations, and basic analysis. Ideal for small to medium datasets, they excel in tasks like budgeting, simple inventory management, and personal finance. However, they can encounter issues with data integrity and scalability when handling large volumes of data.

Databases, on the other hand, offer structured data storage with tables, enabling efficient data organization, retrieval, and complex

queries. They are essential for managing extensive datasets in environments such as customer relationship management (CRM) systems, e-commerce platforms, and data-intensive applications. Despite a steeper learning curve and initial setup complexity, databases ensure data integrity, scalability, and support for multiple users.

Choosing between databases and spreadsheets depends on factors like data volume, complexity, and collaborative needs. Integrating both tools where appropriate enhances workflow efficiency, ensuring optimal data management and analysis in diverse operational contexts.

Activity: Read the text and mark the following statements as true (T) or false (F).

1. Spreadsheets are suitable for managing large volumes of data efficiently.

2. Databases provide structured data storage with tables for efficient data organization and retrieval.

3. Spreadsheets are commonly used for tasks like budgeting, inventory management, and personal finance.

4. Databases have a user-friendly interface and are easy to learn for beginners.

5. Choosing between databases and spreadsheets depends on factors like data volume, complexity, and collaborative needs.

6. Spreadsheets are suitable for environments like CRM systems and e-commerce platforms.

7. Both databases and spreadsheets can be integrated effectively to enhance workflow efficiency.

Speaking

With a partner, act out the roles below.

Use languages such as:

I don't even know what meta tags are.

Our site appears at the top of the search results.

Customers click on our hyperlink first.

Student A: You are a worker at T.B. Brown Inc. **Student B** needs help using a spreadsheet. Talk about:

- what the problem is
- possible mistakes

- solutions

Student B: You are Student A's co-worker. You need help using a spreadsheet. Answer Student A's questions.

Home assignment

Research and Analysis:

Choose two different real-world scenarios where either a spreadsheet or a database would be more suitable. Examples could include:

- Case A: Managing a personal budget and financial records.
- Case B: Operating a small online retail business with inventory management.

For each case, conduct research to determine which tool (spreadsheet or database) would be more appropriate based on factors like data volume, complexity, collaborative needs, and scalability.

Write a comparison report (approximately 500-800 words).