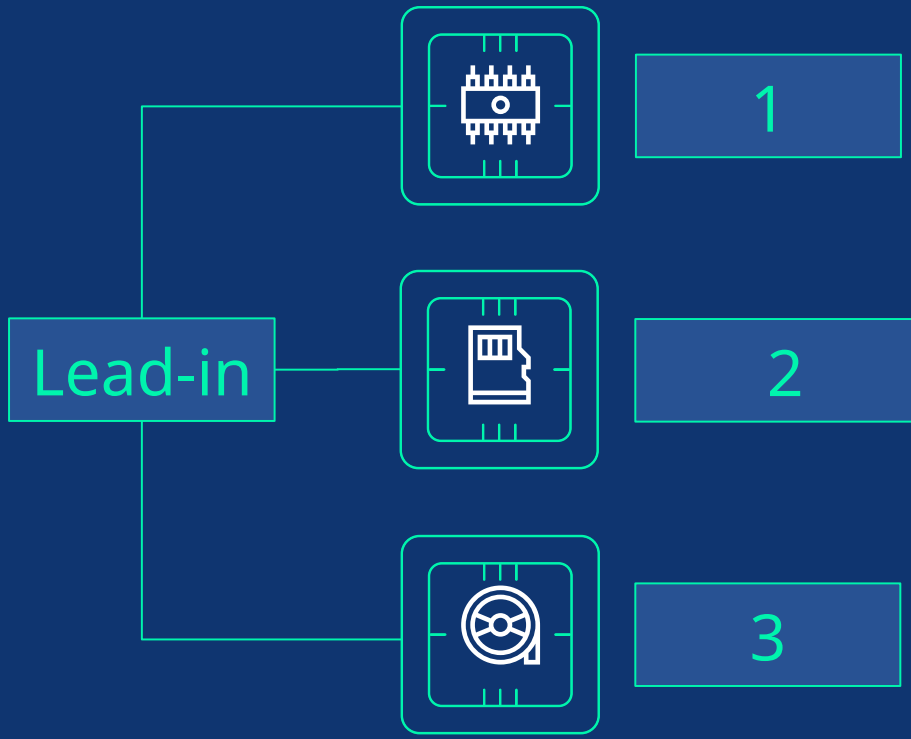
Databases VS Spreadsheets

Unit 11

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.

Let’s Discuss!



What are some common uses of spreadsheets?

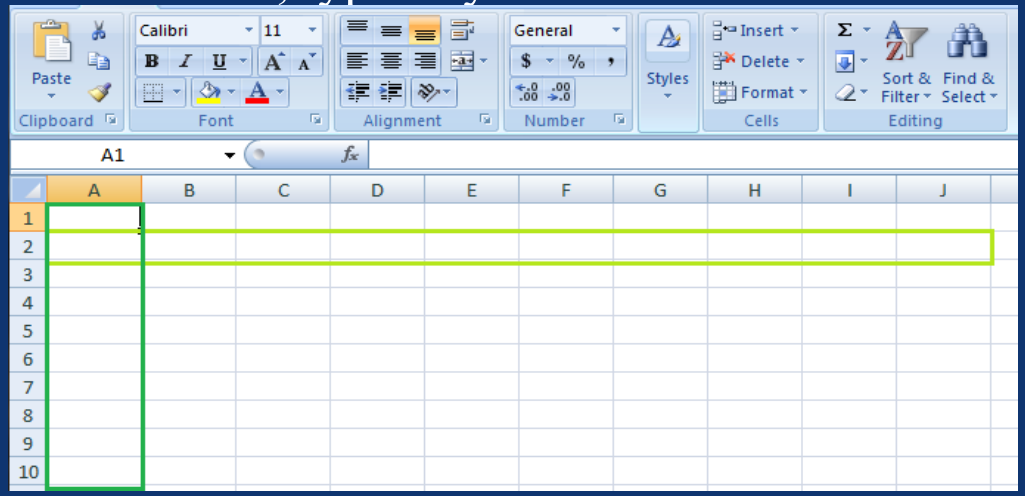
What kind of information do you find in databases?

Tell features of spreadsheets

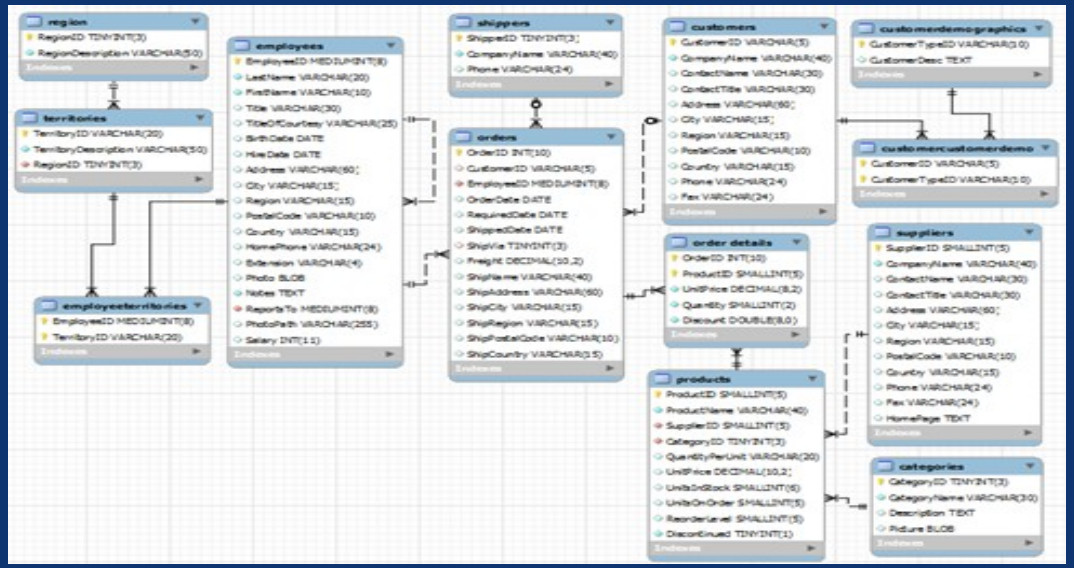
Spreadsheets: Designed for data entry, calculation, and simple analysis. Useful for small datasets or personal use.

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.*

Match the words with the definitions (A-E).

Worksheet, sort, database, field, formula

- A. to arrange the information in a database
- B. a large group of data organized in a computer
- C. a mathematical instruction that performs spreadsheet calculations
- D. a single page of a spreadsheet
- E. a database category that holds a type of information

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

timecard

database

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

budget

workbook

A _____ helps determine how a company spends money.

A _____ file created by a spreadsheet is often three pages long.

Answers: 1. timecard; 2. database; 3. budget; 4. workbook

Choose the word that is closest in meaning to the underlined part

1. Sue types in a(n) symbol that performs a specific calculation on the line.

A. cell B. operator C .worksheet

2. Please arrange the client addresses in a single collection of information in a database.

A. Table B. Field C. query

3. Dave adds up the values with a mathematical spreadsheet calculation.

A. Worksheet B. formula C. database

4. Jim organizes records in a computer program that organizes information and performs calculations.

A. Function B. query C. spreadsheet

Choose the word that is closest in meaning to the underlined part

5. Martha finds clients who live nearby with a(n) search that locates all information of a specific type.

A. Query B. field C. operator

6. Some information in one unit of a spreadsheet that holds a piece of information is incorrect.

A. table B. function C. cell

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.

Answers: 1. False; 2. True; 3. True; 4. False; 5. True; 6. False; 7. True

11 Databases vs. Spreadsheets

T·B·BROWN Inc.
INFORMATION TECHNOLOGY DEPARTMENT

From: **IT Department**
To: **All Users**
Re: **Spreadsheets vs Database**

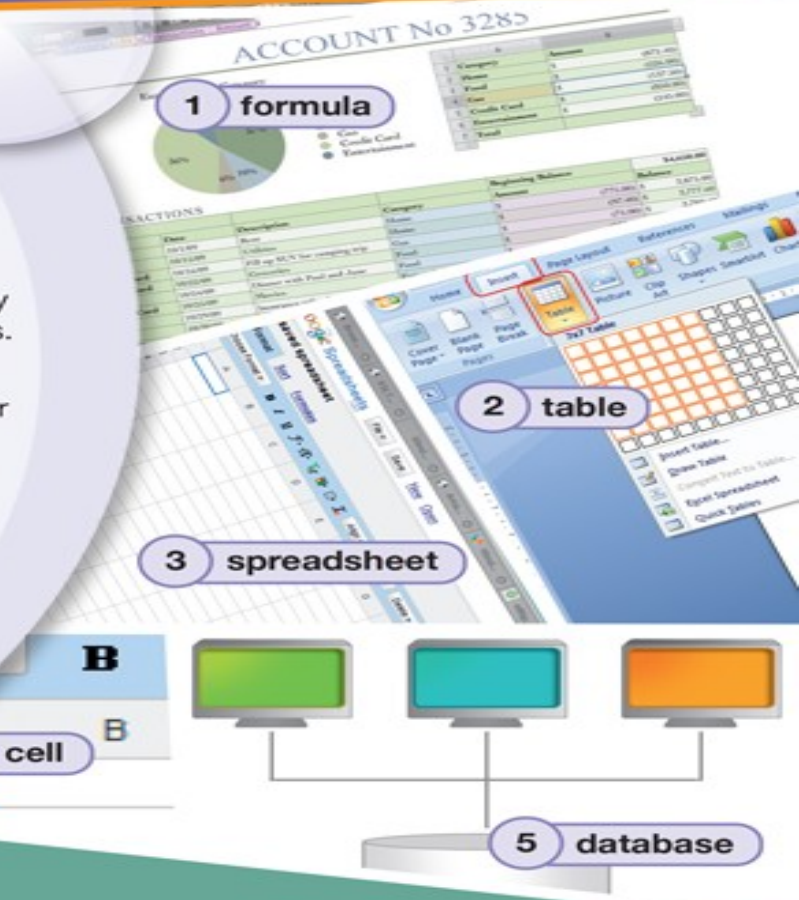
Currently, many employees use **spreadsheets** incorrectly. They are not for data storage. Please review the following guidelines.

Use our **database** program to:

Organize and **sort** large amounts of data regarding clients. Enter the client names and addresses into the **database fields**. Perform complex **queries**. Search multiple **tables** for client information.

Use our **spreadsheet** program to:

Perform calculations about cost and revenue. Create **formulas** using different **functions** and **operators**. Use this to analyze sales data.
Create graphs and charts that show profits. Use the data in the **cells** of a **worksheet** to create these charts.



Read the email from the IT department of T.B. Brown Inc. Then, read the paraphrase of the email. Fill in the blanks with the correct words from the correct words from the word bank.

Employees often use databases and spreadsheets incorrectly. Use a 1) _____ to organize large amounts of information about 2) _____ . A database makes it easy to search multiple 3) _____ for client information. Use a spreadsheet to perform 4) _____ about sales data. Spreadsheets are also able to create graphs and charts showing 5) _____ .

database
clients
tables
calculations
profits

profits, tables, clients, database, calculations

Listen to a conversation between two co-workers at T.B. Brown Inc. Mark the following statements as *True* or *False*.

1. Sam is using a database program.

A. True

B. False

2. Rachel tells Sam to perform a query.

A. True

B. False

3. Sam enters a formula that calculates profits.

A. True

B. False



Listen again and complete the conversation

Sam: Rachel, I need help. I don't understand this 1) _____ program.
Rachel: Sure. What are you trying to do?
Sam: I need to 2) _____ our estimated profits for next month. But I don't know how to do that.
Rachel: Well, is all the 3) _____ in the 4) _____ correct?
Sam: Yes, I'm sure it is.
Rachel: Okay. Then just type this 5) _____ into the top cell.
Sam: Really? That's all?
Rachel: Yes. The formula calculates the estimated 6) _____ and shows them at the bottom of the spreadsheet.

Answers: 1. spreadsheet; 2. calculate; 3. data; 4. cells; 5. formula; 6. profits

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:

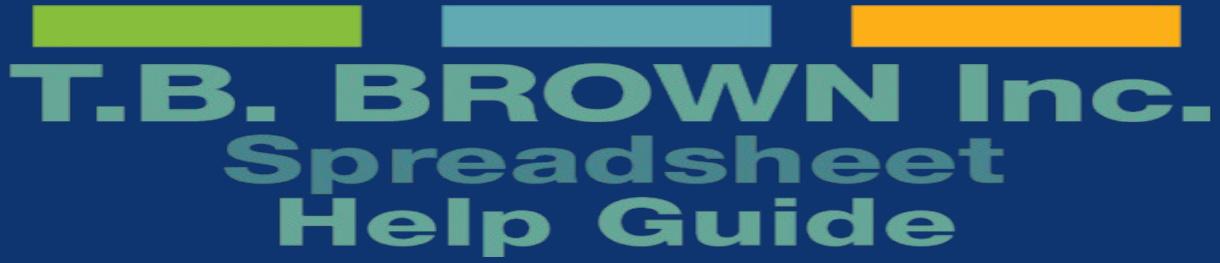
• what the problem is

• possible mistakes

• solutions

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

Use the conversation from Task 8 to complete the page.



Question: How do I **calculate** our customer **orders** for last month?

1. Make sure all the **data** in the **cells** is correct.
2. Enter the **formula** into the **top** cell.
3. The formula calculates the customer orders and shows them at the **bottom** of the spreadsheet.

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).

Thanks

Take care☺



Web Design vs Web Development

Unit 12



Objectives:



01

differentiate between web design and web development

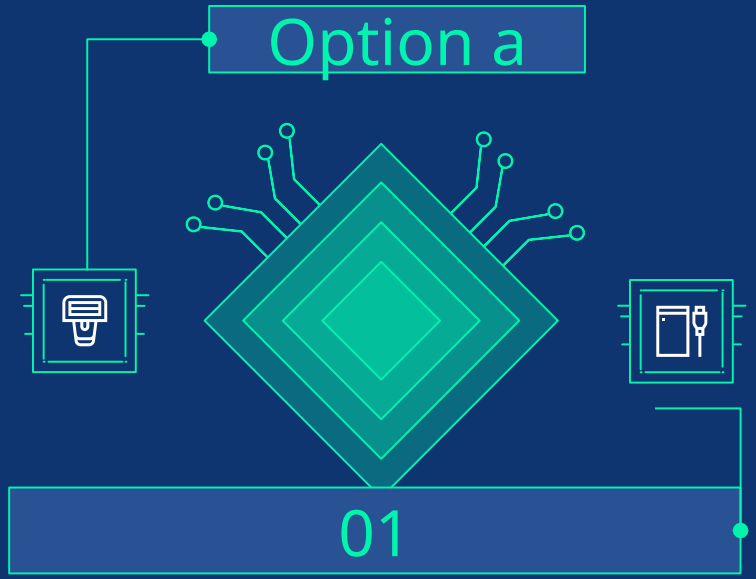
02

explain the collaborative process between designers and developers

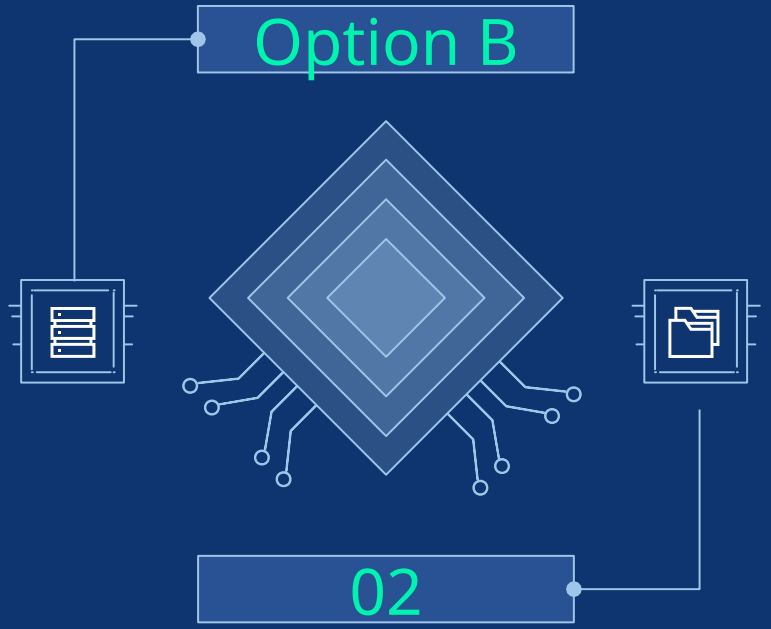
03

evaluate user-centered design principles.

Lead-in: Let's talk!

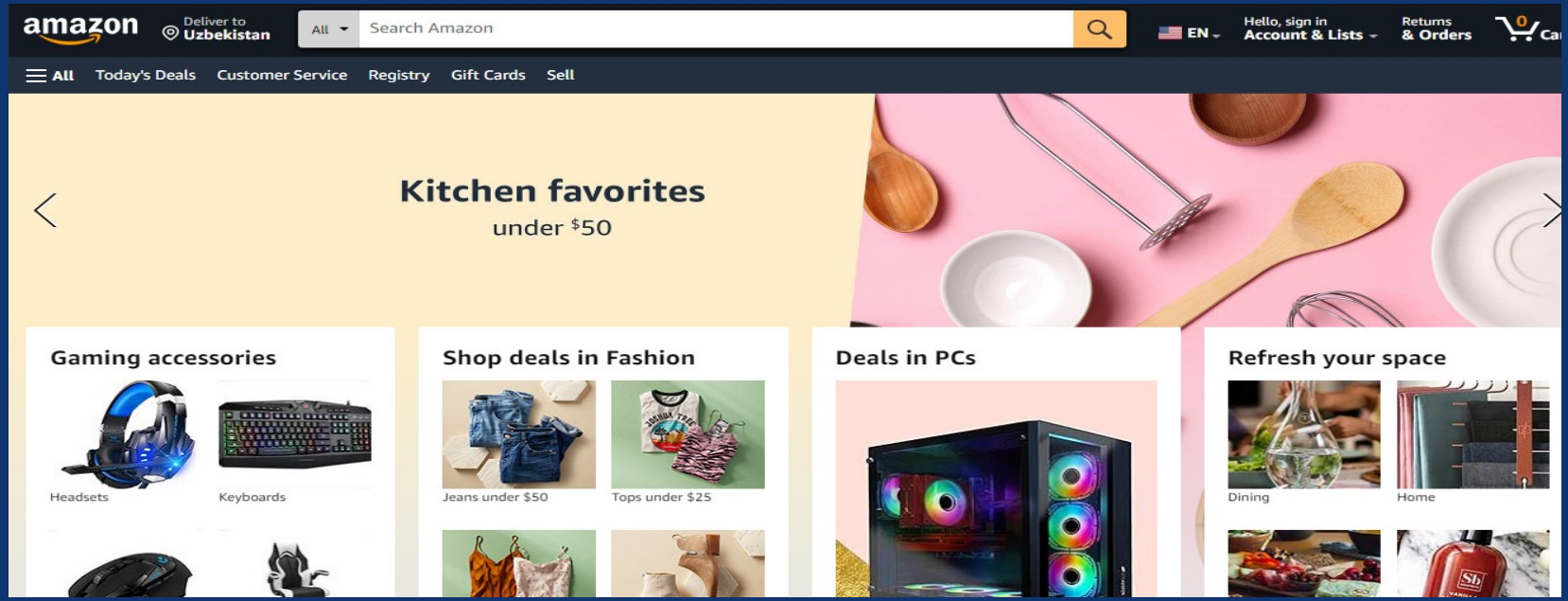


What makes a good business website?



What kind of websites do you like to use?

Activity: Showcasing the website to highlight interactive features and functionalities (e.g., forms, navigation menus). Here are some common and effective interactive elements of the Amazon website.



Sliders and Carousels:

- Image sliders showcasing products, services, or featured content.
- Testimonial carousels with quotes from customers or users.

Interactive Charts and Graphs:

- Data visualizations using charts (e.g., bar charts, pie charts, line graphs).
- Interactive elements like tooltips or drill-down options for deeper exploration.

Interactive Tables:

- Tables with sortable columns.
- Expandable rows for showing additional details or actions.

Video and Multimedia:

- Embedded videos with play controls.
- Audio players for podcasts or music.

Features and functionalities of the website

Forms:

- Contact forms with fields for name, email, message, etc.
- Registration forms for signing up to a service or newsletter.
- Feedback forms to gather user opinions or reviews.

Navigation Menus:

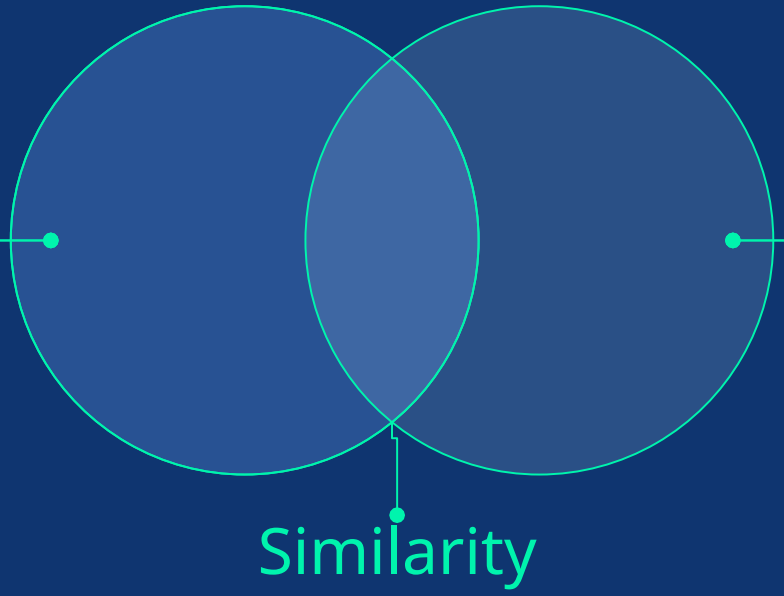
- Responsive navigation menus that adapt to different screen sizes (mobile-friendly).
- Dropdown menus for hierarchical navigation.
- Mega menus for displaying a large number of options in an organized manner.

Search Functionality:

- Search bars with autocomplete suggestions.
- Advanced search filters (e.g., by date, category, location).

Activity: Comparing and analyzing using Venn diagram

What's the difference between a web designer and a web developer?



What's the difference between a web designer and a web developer?

Key Terms

Web design – is the act or practice of determining how a website looks

Example: *The new company focused on web design.*

Visibility – is how easily people find a website using search engines, based on how many other websites link to it

Example: *Learn ways to increase a website's visibility.*

Coding – is a programming language that makes up a website

Example: *The reason for this was to protect sensitive Javascript coding from launching unnecessary actions.*

Navigation – is the act of using and finding things on a website

Example*: As its name implies, structural navigation follows the structure of a website.*

Usability – is how easy it is for a person to use a website
Example: Usability is one of the most important factors that affects the user experience of any application, website, or any other piece of software.

Content – is the material on a web page, including text and graphics
Example: Create attractive content to catch a user's attention.

CSS – (Cascading Style Sheets) is a simple language that decides how a web page looks
Example: Use CSS to change a website's style.

Match the words with the definitions (A-F).

content	visibility	coding	Web design	usability	navigation

A. choosing a website's visuals _____
B. how easily you can find a website on a search engine _____
C. a website's programming _____
D. how easily a user can use a website _____
E. moving around a website _____
F. everything contained in a website _____

A. web design; B. visibility; C. coding; D. usability; E. navigation; F. content

Fill in the blanks with the correct words and phrases from the word bank

CSS	appearance	functionality	web development

1. The website doesn’t work well. I want to improve its _____.
2. My website looks boring. I’ll give it a more interesting _____.
3. If you are interested in making a website, take a _____ class.
4. I’m learning _____ so that I can change my website.

Answers: 1. functionality; 2, appearance; 3. web development; 4. CSS

12 Web Design vs. Web Development

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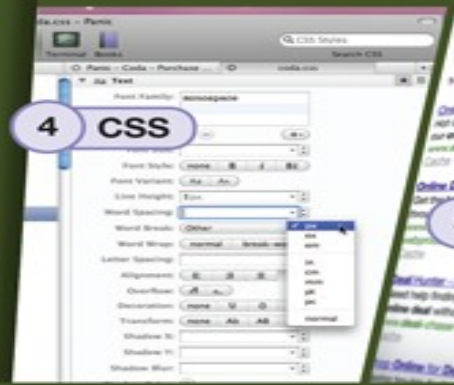
Website Review SOLUTIONS

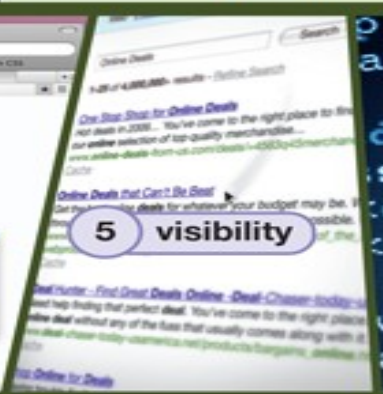














Website Review Solutions now offers two spring classes. These classes focus on creating websites.

Web Development: Learn how to make a simple website. Create **coding** to build sites. Explore ways to expand **functionality**. Discuss improving **navigation** and **usability**. Learn ways to increase a website's **visibility**.

Web Design: Learn how to change a website's **appearance**. Use **CSS** to change a website's style. Compare the effect of different fonts and colors. Create attractive **content** to catch a user's attention.

E-mail Mary Shelton at mshelton@wrsolutions.com to register for classes.

Read the article from a business newsletter. Then, choose the correct answers.

1. What does the Web Development class NOT teach?
A. making a website easy to use
B. improving a website's visibility
C. using code to program a website
D. how to market a new website

2. What can you infer about the Web Design class?
A. Attending the class is mandatory.
B. The first class addresses functionality.
C. It focuses on improving a site's visual element.
D. Its registration fee is less than the Web Development class.

3. What is the function of CSS?
A. It helps improve navigation.
B. It decreases a website's visibility.
C. It changes the style of a web page.
D. It expands the functionality of a website.

Listen to a conversation between an instructor for a web development class and an employee. Choose the correct answers.

1. What do the speakers mostly talk about?

A. how to change content
B. why sheets are separate
C. choosing the correct CSS style sheet
D. the difference between content and style

2. What happens when the style sheet and the content are separated?

A. It alters the content.
B. The content does not change.
C. Content needs creating.
D. The words are changed in the content.





Listen again and complete the conversation

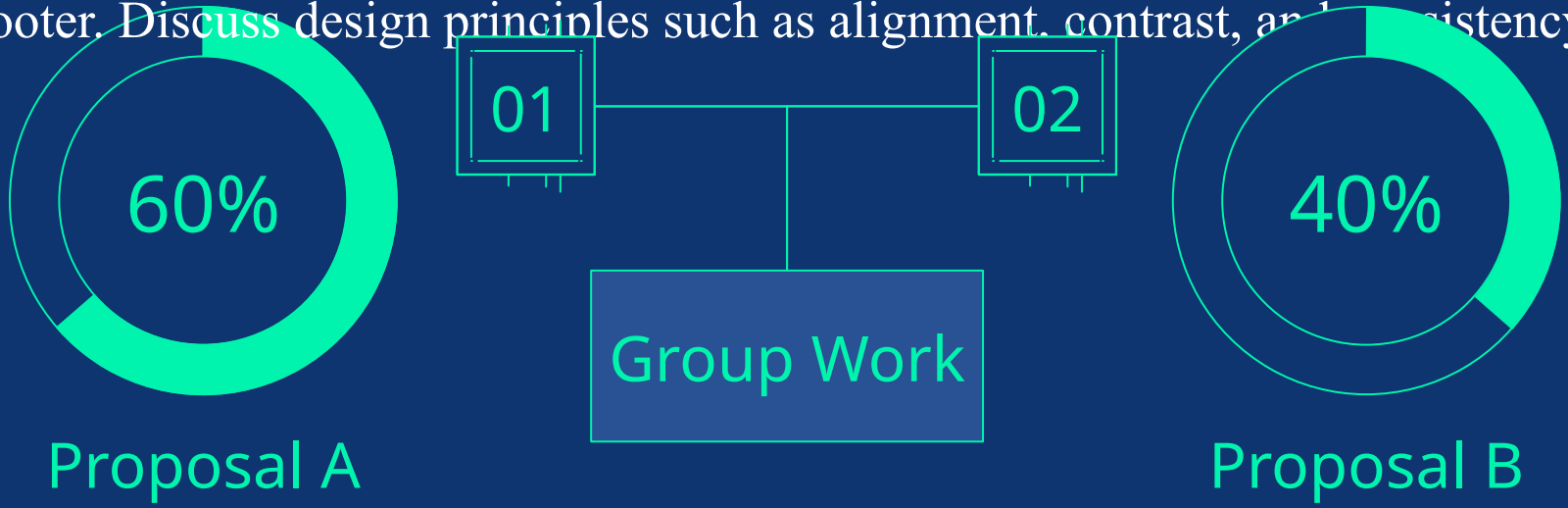
- **Instructor:** So, that's how we change the website's style. Does anyone have any questions?
- **Employee:** Yes. I have one. It's about 1) _____.
- **Instructor:** Oh, the 2) _____ _____ _____. What do you want to know?
- **Employee:** Why do we separate the style sheet and the 3) _____?
- **Instructor:** It makes changing the 4) _____ _____ easier. The 5) _____ changes, but the content doesn't.
- **Employee:** So, I change the style sheet. What happens to the content?
- **Instructor:** Nothing, because the two are 6) _____.
- **Employee:** Okay. I understand now. The words stay the same, but their appearance changes.

Answers: 1. CSS; 2. cascading style sheets; 3. content; 4. web page; 5. appearance; 6. separate

Group working and Speaking

Activity: **Web Design Task**

Students are divided into groups and assigned to create a simple webpage layout using paper and markers. Emphasize elements like header, navigation bar, content area, and footer. Discuss design principles such as alignment, contrast, and consistency.



Summary

Highlight skills and qualifications needed for each role and the importance of collaboration between designers and developers in real-world projects. Write your findings as a summary.

Thanks

Take care ☺