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How website works?

Think of a website like a store you want to visit. Instead of driving to the store, you “go” to it online by using your computer or phone. When you type in the address of a website (like “amazon.com”), your device sends a message to a special computer, called a server, asking it to show you the website. The server then sends back all the stuff that makes up the website (like pictures, text, and buttons), and your device puts it all together so you can see and use it.

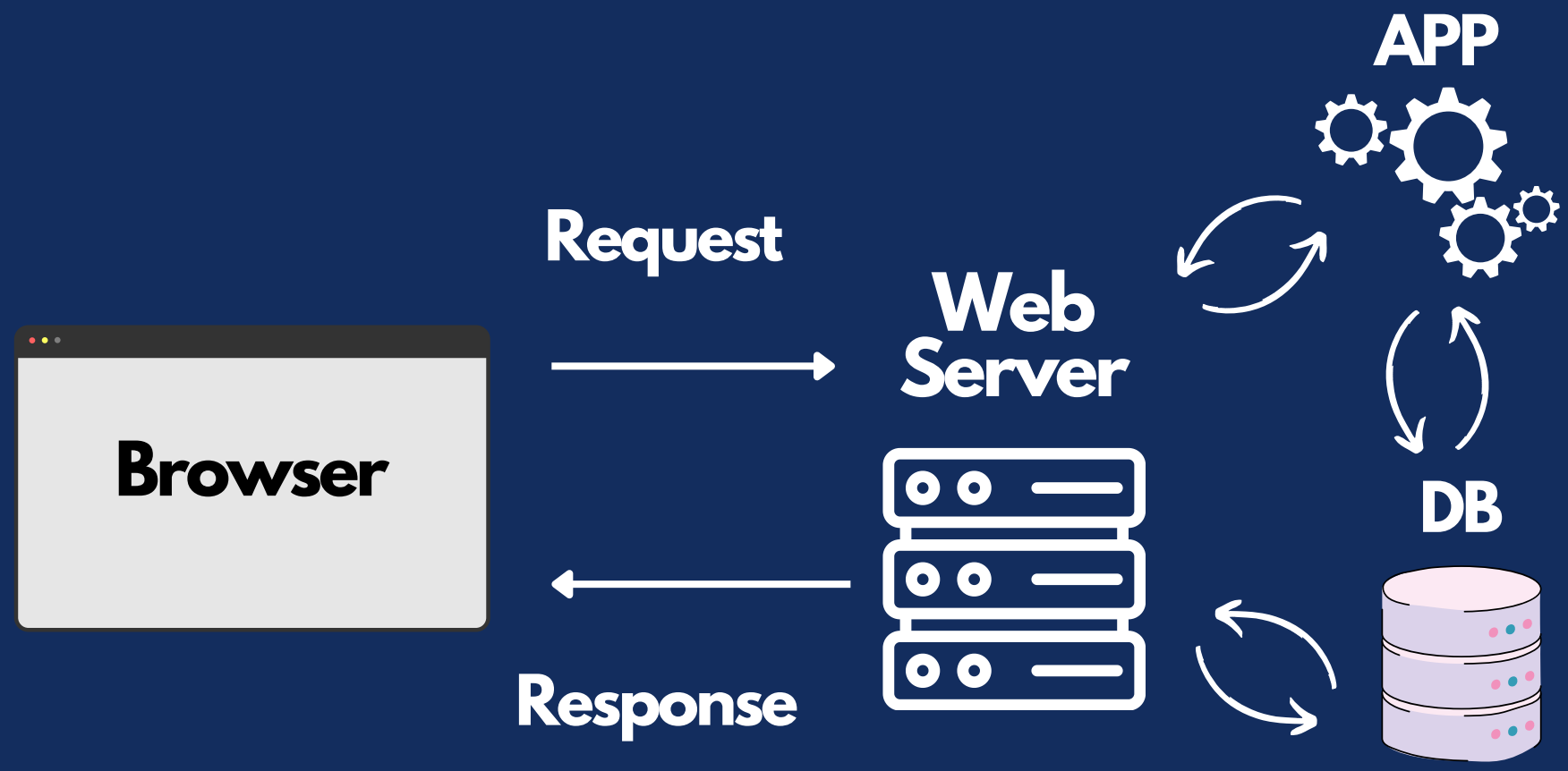
Example:

Let’s say you want to visit Amazon to do some online shopping. When you type “amazon.com” into your browser, your computer sends a message asking for Amazon’s website. The Amazon server responds by sending back everything you need, like the pictures of products and the “Add to Cart” button. Your browser then shows you everything in a way that makes sense to you.

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How does a website work?



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Why Do We Need a Browser?

A browser (like Google Chrome or Safari) is like a translator that helps you see and interact with websites. Without it, the website would just be lines of computer code that most of us wouldn't understand.

Here's what the browser does:

1. It asks the website's server for all the data that makes up the site.
2. It translates that data from code into something you can see and understand, like pictures, buttons, and text.
3. It organizes everything so the website looks neat and easy to use.

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Languages of the web:

- **HTML (HYPER TEXT MARKUP LANGUAGE):** THIS IS THE BASIC STRUCTURE OF A WEBPAGE. THINK OF IT LIKE THE FRAMEWORK OF A HOUSE. IT TELLS THE BROWSER WHAT TO SHOW YOU AND WHERE EVERYTHING SHOULD GO, LIKE TEXT, IMAGES, OR BUTTONS.
- **CSS (CASCADING STYLE SHEETS):** THIS IS WHAT MAKES THE WEBSITE LOOK PRETTY. IT CONTROLS THE COLORS, FONTS, AND LAYOUT. IF HTML IS THE STRUCTURE OF THE HOUSE, CSS IS THE PAINT AND DECORATIONS.
- **JS (JAVA SCRIPT):** THIS LANGUAGE MAKES WEBSITES INTERACTIVE. IT'S WHAT ALLOWS THINGS TO HAPPEN WHEN YOU CLICK A BUTTON OR SCROLL DOWN A PAGE.
- **EXAMPLE:** ON A SHOPPING WEBSITE, WHEN YOU CLICK "ADD TO CART" AND THE CART UPDATES WITH THE NEW ITEM, THAT'S JAVASCRIPT IN ACTION.

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HTML:

- HTML IS A MARKUP LANGUAGE THAT WEBDEVELOPERS USE TO STRUCTURE AND DESCRIBE THE CONTENT OF A WEBPAGE (*NOT A PROGRAMMING LANGUAGE*)
- HTML CONSISTS OF ELEMENTS THAT DESCRIBE DIFFERENT TYPES OF CONTENT: PARAGRAPHS, LINKS, HEADINGS, IMAGES, VIDEO, ETC.
- WEB BROWSERS UNDERSTAND HTML AND RENDER HTML CODE AS WEBSITES

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How is HTML structured?

Closing tag: Same as opening tag, but with a /. When element has no content, it's omitted

<p>HTML is a markup language</p>

Opening tag: Name of the element, wrapped in < and >

Content: Content of the element, in this example text. But it might be another element (child element). Some elements have no content (e.g.)

</HTML>



HTML basic structure:

```
<!DOCTYPE html> <!-- Tells the browser the document type -->
```

```
<html lang="en"> <!-- Opening tag for the HTML element and Assigns the default language -->
```

```
<head> <!-- the opening tag for the head element (has all the data that will not be displayed on the webpage) -->
```

```
  <title>Document</title> <!-- assigns the title of the page that will show up in the browser tab -->
```

```
</head> <!-- the closing tag for the head element -->
```

```
<body> <!-- the opening tag for the body element (has everything that will show up in the webpage) -->
```

```
</body> <!-- the closing tag for the body element -->
```

```
</html> <!-- the closing tag for the HTML element -->
```



Examples of HTML Tags

- `<p></p>` (used to add paragraphs)
- `` (used to add unordered lists)
- `` (used to add ordered lists)
- `` (used to add list item used in both `` and ``)
- `<pre></pre>` (used to add preset text that will take into account space new lines tab etc...)
- `<h1>` to `<h6>` (used to add different levels of headings)
- `` (used to make text bold)
- `` (used to make the text italic)
- `` (used to add a link to the webpage)
- `` (used to add image to webpage) no closing tag
- `
` (used to add empty line or a line break) no closing tag
- `<hr>` (used to add a horizontal line) no closing tag
- `<div></div>` (does not add anything to the webpage, used to wrap one or multiple elements to add CSS)
- `` (used to add CSS to inline elements) ex:
`<p> hello, world </p>`

Syntax:

- `<p> </p>`
here we have an unordered list inside a paragraph (correct syntax)
- `<p> </p> ` this is an incorrect syntax (the tag that is opened first should be closed last)

Common errors :

- Using "\" instead of "/" for the closing tag.
- Forgetting the closing tag.
- Miss matching opening and closing tags.
- Forgetting "<" or ">"
- When adding classes, ids, src, href, style, etc forgetting or having extra ".