

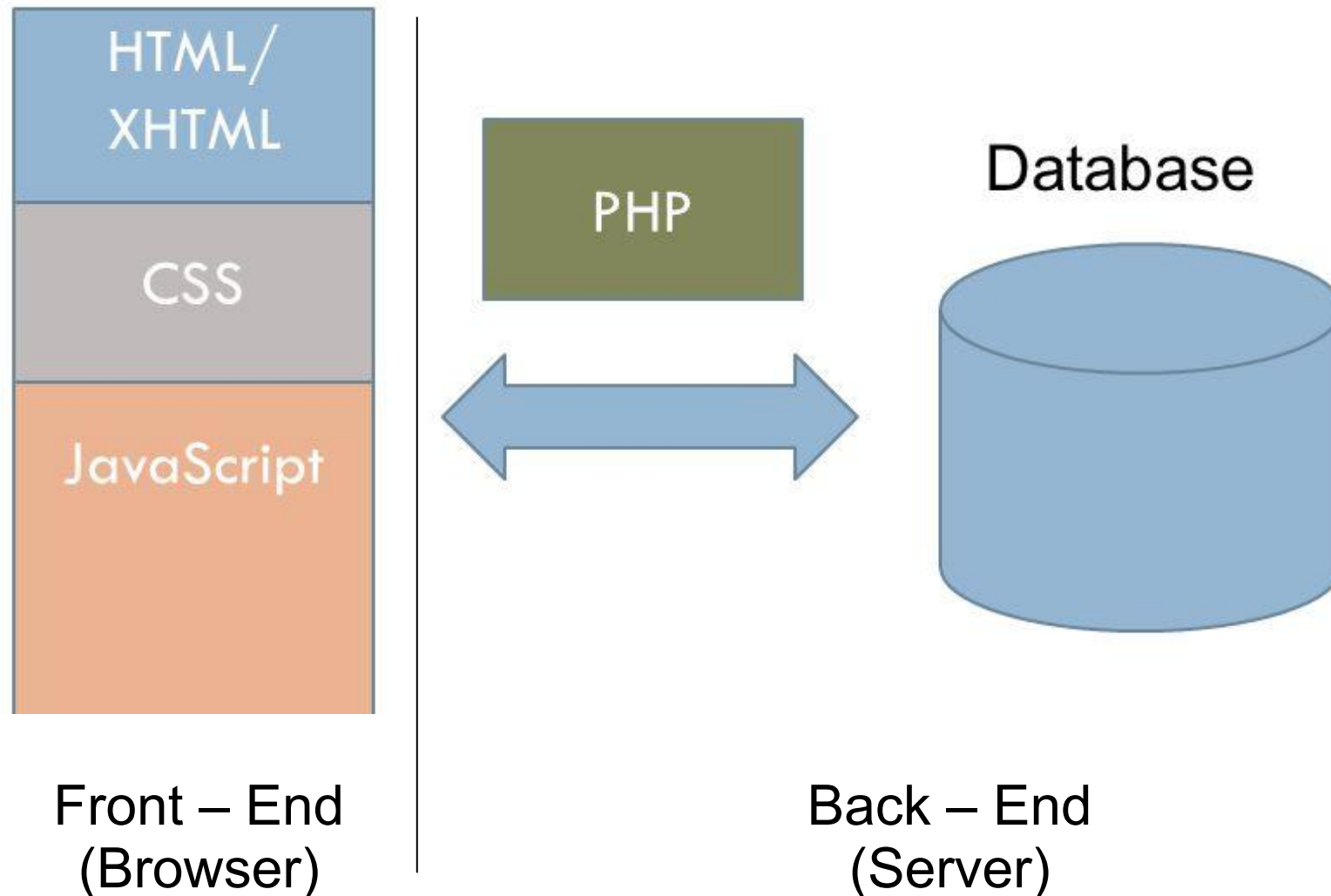
Fundamentals of Front - End Development

Databases and Web Applications
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Webserver basic structure



Website front - end

- The front of a website is all the browser shows to us: colors, images, text, etc.
- The browser takes the HTML and CSS files stored in the server and turns them into pixels on the screen (Document Object Model).
- Additionally, JS allows us to improve interaction with the HTML + CSS elements. JS can manipulate the DOM.

Website front (HTML + CSS)

- HTML (1991) is the language for describing the structure of Web pages.
- CSS (1994) describes how HTML elements are to be displayed on screen.
- Page with css:
<http://mmb.irbbarcelona.org/webdev/bootstrap/home.html>
- Page without css:
<http://mmb.irbbarcelona.org/webdev/bootstrap/no-css.html>

Website front (HTML + CSS)

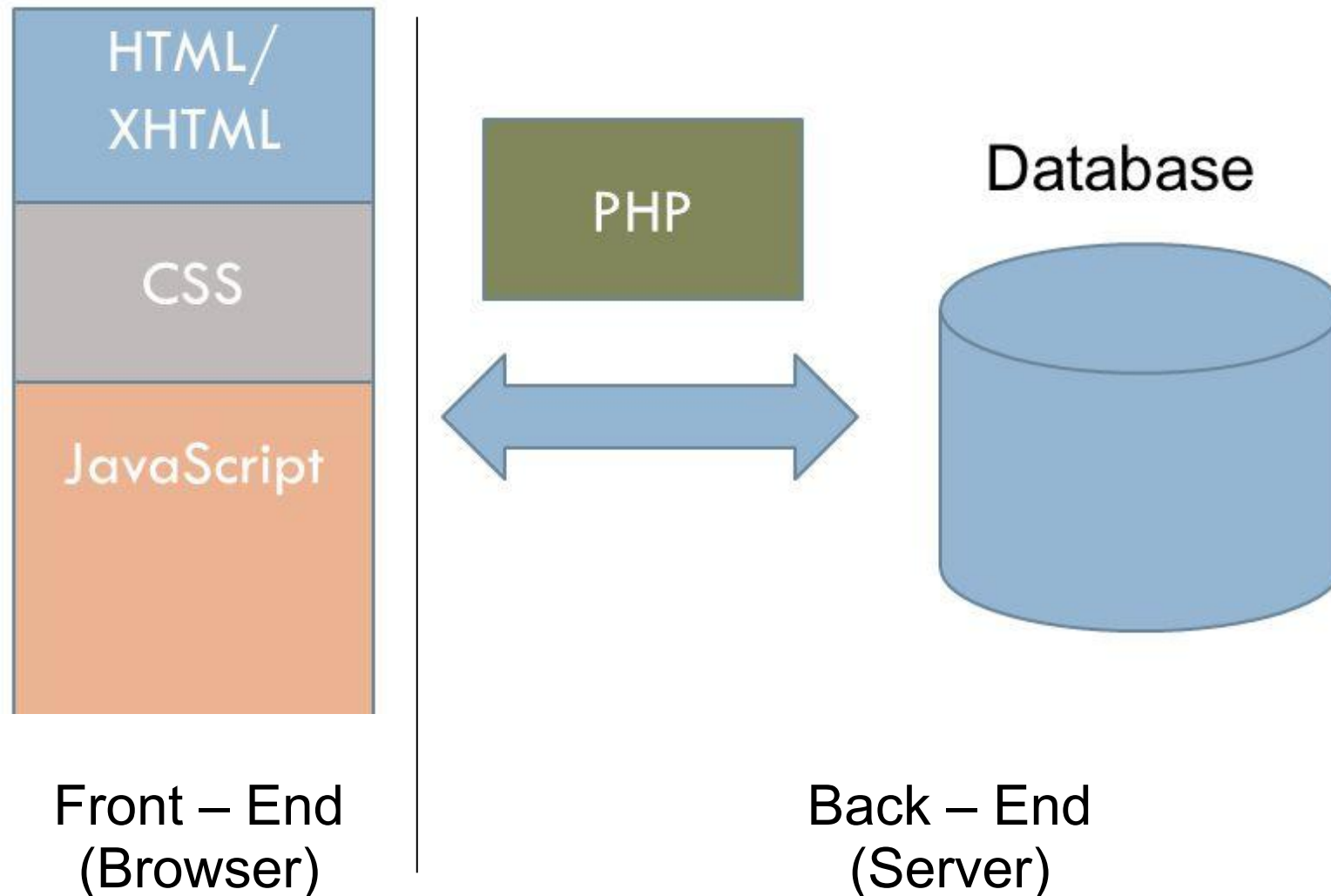
- How it works?

The browser downloads the HTML and CSS files (and the rest of the media as images and fonts) from the server, interprets that info and show it to us as a web page.

Website back - end

- The back - end takes care of all the logic of a website: browser communication server, scripts execution, connection with Database and so on.
- Most common languages: PHP, Python, Java, Ruby, NodeJS...
- Most common Databases: MySQL, MongoDB, PostgreSQL...

Webserver basic structure



Most Common HTML Tags

- <!DOCTYPE>** Defines the document type
- <html>** Defines an HTML document
- <head>** Defines information about the document
- <title>** Defines a title for the document
- <body>** Defines the document's body
- <h1> to <h6>** Defines HTML headings
- <a>** Defines a link
- <p>** Defines a paragraph
-
** Inserts a single line break
- <i> or ** Italic font
- or ** Bold font
- / & ** Unordered / Ordered list & List item
- ** Image
- <div>** Layer
- <!-- text to comment -->** Defines a comment

CSS Reference

.name_of_class Defines a class (used over more than one element)

#name_of_id Defines an id (used over a single element)

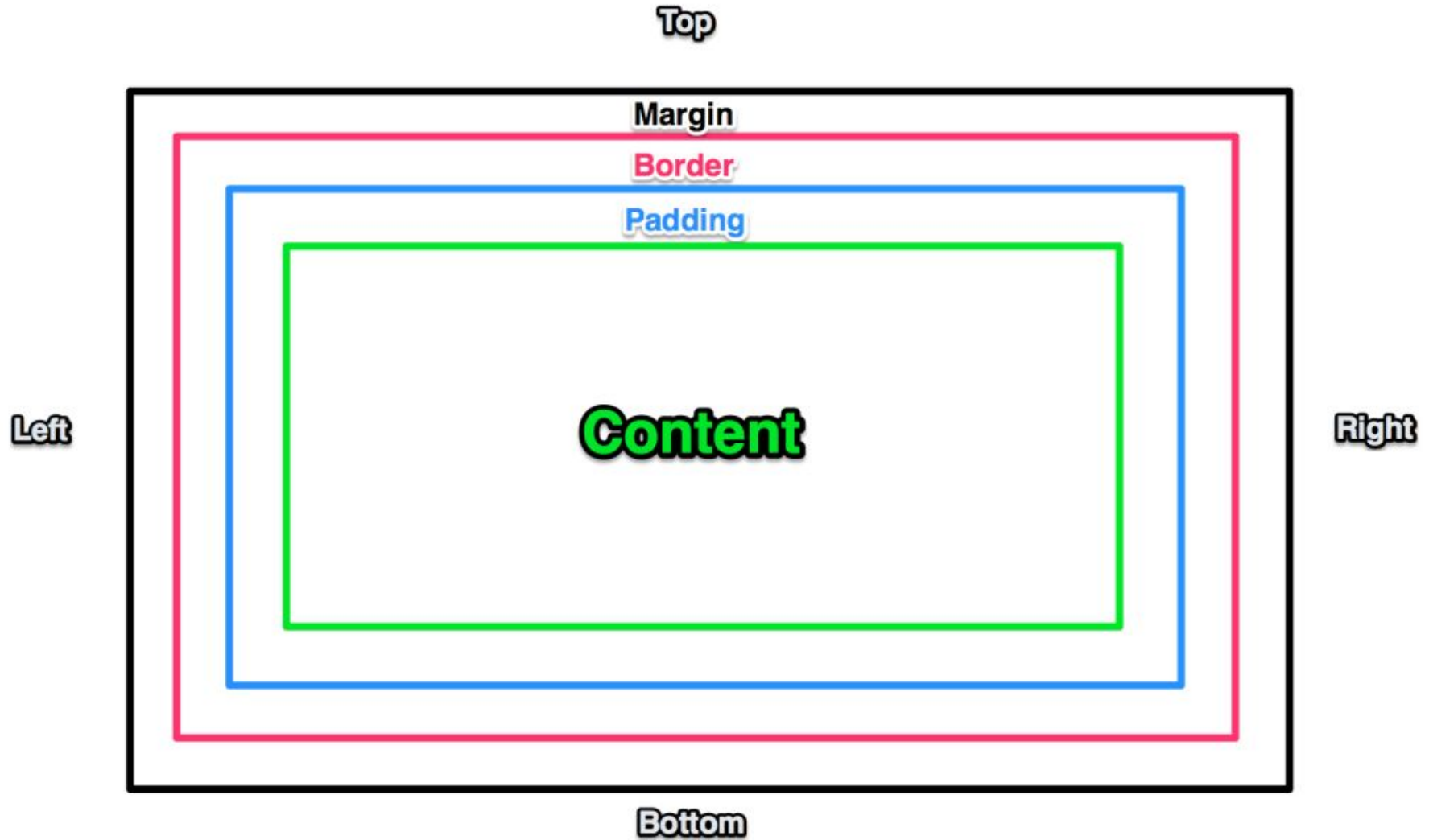
body, html, table, tr, td, etc Used over all the html items in the document

CSS units: %, px, em, rem, cm, in, vh, vw, etc.

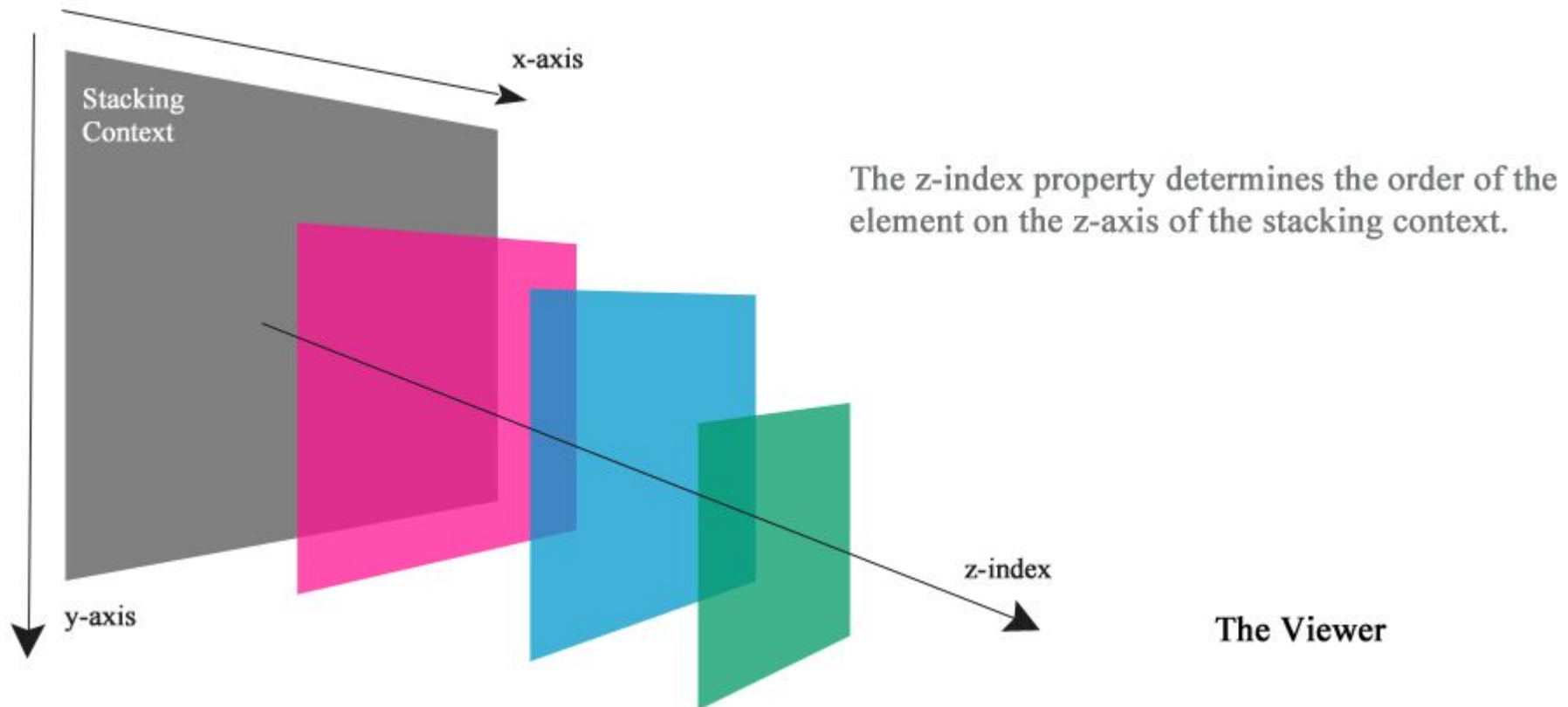
Syntax example:

```
.something {  
    color: red;  
    text-align: center;  
}
```

The CSS box model



Nesting HTML layers



Simple Page Example

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Title of your webpage</title>
  <meta name="description" content="Description of your webpage">
  <meta name="author" content="Your Name">
  <link rel="stylesheet" href="css/styles.css">
</head>
<body>
  <div id="layer1">Hello world!</div>
  <script src="js/scripts.js"></script>
</body>
</html>
```

<https://www.sitepoint.com/a-basic-html5-template/>

What is Bootstrap?

- It is an HTML, CSS and JavaScript framework that you can use as basis for creating web sites or web applications.
- A framework provides a standard way to build and deploy applications. It's an universal, reusable software environment.

Why Bootstrap?

- It's easy
- It's free
- It saves us a lot of work
- It's responsive
- <http://getbootstrap.com/>

Bootstrap example

- <https://github.com/gbayarri/dbw>

Websites built with bootstrap

- <https://mmb.irbbarcelona.org/MCDNA>
- <https://vre.multiscalegenomics.eu>
- <https://mmb.irbbarcelona.org/biobb>
- <https://mmb.irbbarcelona.org/BCE>

Useful links

- <https://css-tricks.com>
- <http://www.w3schools.com/>
- <http://stackoverflow.com/>
- <https://getbootstrap.com/docs/4.4/examples/>
- <https://www.youtube.com/watch?v=RhcQXFeor9g>
- <https://hacks.mozilla.org/2017/08/inside-a-super-fast-css-engine-quantum-css-aka-stylo/>
- <https://jquery.com/>
- <https://www.google.com>

Thank you

