

<Tutorial2>

HTML, CSS, Connecting to Database (Demos)

HTML (Hyper-Text Markup Language)

A form of XML: Predefined Elements with closing and opening tags

Basic Structure of an HTML Document:

```
<!DOCTYPE html>

<html lang="en">
  <head>
    <link rel="stylesheet" type="text/css" href="styles.css">
  </head>

  <body>
    <h1>This is a title</h1>
    <a href="https://bestsiteever.com/">This is a link to the best site ever</a>
  </body>
</html>
```

HTML Attributes

- Can be specified in the start tag of an element
- Some attributes directly affect the element, for example the href attribute for the <a> tag, or the height and width attributes.
- Other attributes do not affect the element directly, but can be used to reference the element, or a group of elements from the CSS stylesheet (or the JS script)
 - Most importantly: id and class
 - In CSS we can specify which elements we want to modify, by specifying the id, the class and/or the tag.

HTML Attributes & styles defined through CSS

html	css
<pre><!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <meta name="viewport" content="width=device-width, initial-scale=1.0"> <link rel="stylesheet" href="styles.css"> <title>CSS Example</title> </head> <body> <h1 id="header">This is a Heading</h1> <p class="paragraph">This is a paragraph with some text.</p> Item 1 Item 2 Item 3 </body> </html></pre>	<pre>/* Styling for the ID 'header' */ #header { font-size: 24px; color: blue; } /* Styling for the class 'paragraph' */ .paragraph { font-size: 16px; color: green; margin-top: 10px; } /* Styling for the 'ul' tag */ ul { list-style-type: square; }</pre>

HTML Elements

Here a short list of a short list of some of the most important HTML Elements for reference. For a more complete list see [here](#).

Comment

`<!-- HTML Comment -->`

Headings

`<h1>Page title</h1>`

`<h2>Subheading</h2>`

`<h3>Tertiary heading</h3>`

`<h4>Quaternary heading</h4>`

Paragraph

`<p>text</p>`

Non-semantic elements

`<div>Block element</div>`

`Inline element`

`
 <!-- Line Break -->`

Some more HTML Elements

Image

``

Links

Opens website in the same tab:

`Click here`

Opens website in different tab:

`Click here`

`Send Mail`

Bold text

`Bold text`

Italic text

`Italic text`

Unordered list

``

`Item`

`Item`

`Item`

``

Ordered list

``

`First`

`Second`

`Third`

``

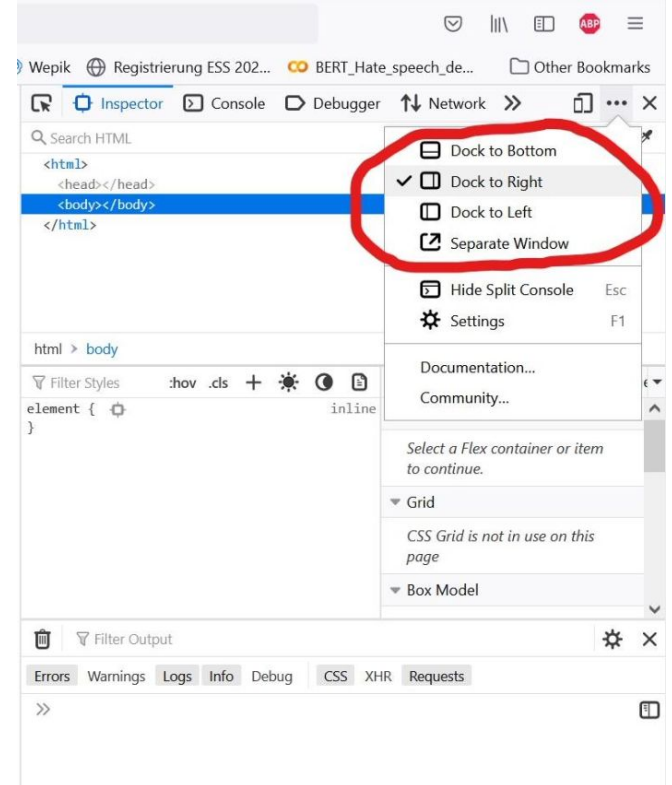
Web Development Tools (DevTools)

Windows: Control + Shift + I

macOS: Command + Option + I

Linux: Control + Shift + I

Demo



DB COnnection: free to use Tools

DEMO:

- From Command Line (install postgresql) / PostgreSQL.App (for mac)
- DBeaver
- Pycharm /DataGrip (free for students)
- VSC

----- Some other Tools:

- pgAdmin4
- Full List: https://wiki.postgresql.org/wiki/PostgreSQL_Clients

Run PostgreSQL locally

Command to connect to the Database: (via terminal/command line)

```
% psql -h <database host> -p <port number> -U <user> -d <database name>
```

(those specific informations were sent to you via email after the first deployment of the example project)

```
% psql --version    #checks if you already have it installed, and if yes, what version you have
```

If you don't have it installed, you can install and run PostgreSQL for your OS locally here (<https://www.postgresql.org/download/>).

DBeaver:

DBeaver Community

Open-source version

- Basic support for relational databases: MySQL, SQL Server, PostgreSQL and [others](#)
- Data Editor
- SQL Editor
- Task management
- Database maintenance tools

Download the Application for your OS here: <https://dbeaver.io/>

Connect to your postgres database:

- Set up new connection, select “PostgreSQL”
- Enter your credentials, log in as owner
- Open a SQL-Script and **CREATE** your fist table.
- Check out the Documentation if you want to get more familiar with it

Pycharm Pro.:

Download 'PyCharm Professional' (Educational License - free for students), you can apply here: [Free Educational Licenses - Community Support](#) or directly here: [Jetbrain For Student](#) Apply with your Uni Mail address. **(You can also use DataGrip with this Licence)**

Allows for:

- Database connection + visual interface
- + Additional extensions like Javascript and Jupyter Notebooks etc.
- see full list here: <https://www.jetbrains.com/products/compare/?product=pycharm&product=pycharm-ce>
- Later on, you can write pythonscripts connecting to Database and see you changes in one Tool.

How to connect inside a python script with your database will be covered a later Lecture.

DataGrip

Use same License as PyCharm Pro (free for students)

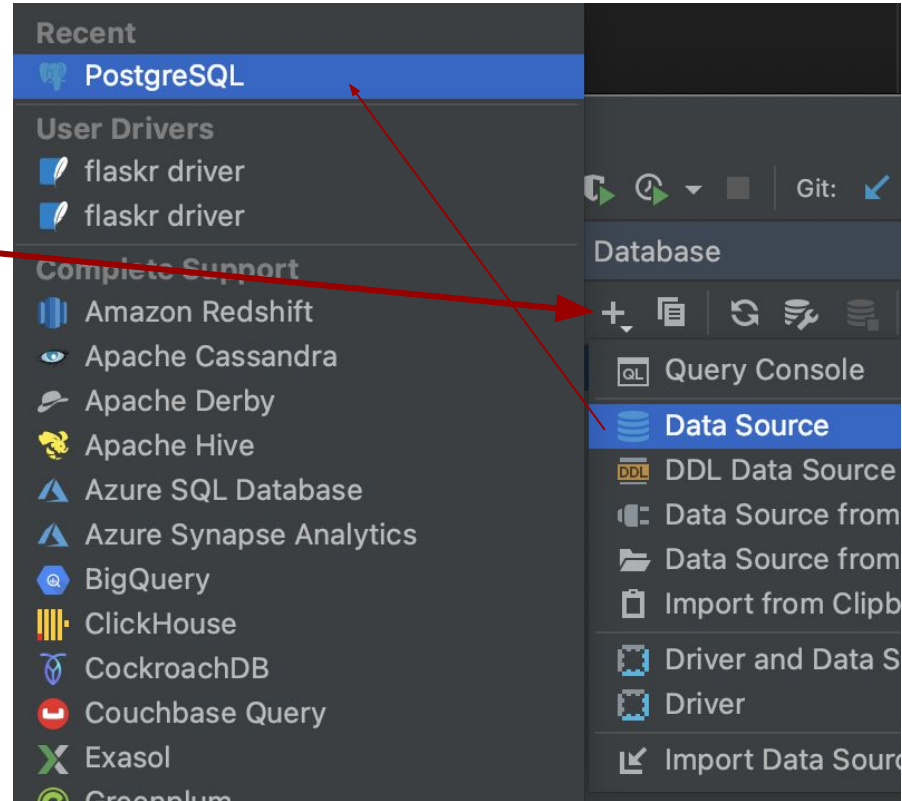
- Includes nice filing system of SQL consoles and history of SQL commands used
- User friendly Interface with visualization options

PyCharm connect to Database:

If you just want to connect to your database and manipulate it directly:

Go to “Database”, click on the “+” (New), go to “Datasource” and select “PostgreSQL”, Enter credentials from the mail you received when first deploying the project.

Make sure you have the VPN activated and test your connection, to finish it click “Ok”. Open a SQL-console and write your queries :)



For people who like to work with VSC

Install PostgreSQL extension, for example:

PostgreSQL

Id: ms-ossdata.vscode-postgresql

Description: Develop Postgres everywhere

Version: 0.3.0

Publisher: Microsoft

VS Marketplace Link: <https://marketplace.visualstudio.com/items?itemName=ms-ossdata.vscode-postgresql>

Follow the Quickstart Instructions in the Details of the Extension.

References and additional material

- [HTML CheatSheet](#)
- [CSS CheatSheet](#) or [Here](#)
- [HTML Dog](#) (basics of HTML, CSS and JavaScript!)

- [HTML Color Codes](#)
- [HTML in 100 seconds](#)

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