

## Introduction to front-end frameworks

### What are front-end frameworks?

Front-end web development is the process of transforming data into a graphical interface, using CSS, HTML and JavaScript.

Back-end frameworks such as Django and RoR help develop solid logic and functionality, while front-end frameworks such as Vue and React help develop the user experience.

There are numerous platforms and development tools such as Joomla, WordPress and Drupal that can be used to build the front-end of the website. It is important to understand which tools are best for specific tasks, as using the right tool can make the difference between developing a well-designed, scalable website and a poor website.

When developing for mobile devices such as tablets and smartphones, designers need to ensure that the website works correctly in browsers on all devices. This can be quickly achieved by creating a responsive web design using stylesheets in CSS. Performance goals are primarily concerned with render time and the delivery of CSS, HTML and JavaScript to ensure that the website opens quickly.

Front-end development using CSS frameworks ensure pre-built, homogeneous code in folders and files and provide a foundation for development while allowing flexibility in the final design.

### Components of front-end frameworks

- The grid makes it easy to define the design features of the website.
- Well-defined font styles that differ according to purpose (different typography for headings as opposed to paragraphs).
- Pre-designed website components such as buttons, navigation bars, and page panels.

### Advantages of front-end frameworks

Front-end frameworks are primarily used to create interactive tools and develop responsive websites. They provide consistent products to increase traffic and improve the look and effect of mobile applications and web applications. In addition, there are the following benefits to using popular UI frameworks:

#### Functions and applications are significantly more responsive

Front-end frameworks enable web developers to build applications with responsive features. They are flexible and fast in their design so that the application responds quickly with a tap of a finger and works accordingly.

#### Fast development

Frameworks help speed up the development of many elements of a website. This shortens the real time required for development. For example, the frontend part must be done at the same time as the backend development of the app.

## Technology with several advantages

One of the key benefits of a front-end web development framework is that it is supported by technology that is easy to scale, learn, and use. These technologies have gone through countless detailed iterations and subsequently deliver user-friendly experiences in layering. Frameworks are easy to learn and follow, both for commercial companies and for developers.

## Security

This is one of the most important advantages at the stage when cyber-crawlers are waiting for a loophole to attack your digital regime. You are protected by a secure website that works on the web browser.



### Tasks: Read the text and answer the questions

#### 1) Beantworten Sie die folgenden Fragen zum Text auf Deutsch

a) Was ist eine Frontend-Webentwicklung?

front end web development ist der prozess vom Transformieren  
der daten in eine Grafische oberfläche

Meist benutzt dafür sind Hml css & JavaScript

b) Warum sind CSS Frameworks so hilfreich?

CSS Frameworks versichern vorbegauten, gleichartigen code und bieten somit eine basis,  
welche auch flexibilität für das finale design erlaubt

#### 2) Answer the following questions about your own project in English (Should be answered later in the module)

a) Which front-end frameworks did you consider for your project?

We considered using the HTML, CSS & Typescript frameworks Angular and WebGL.  
We also considered and will most likely be using a custom c++ framework based on OpenGL

- b) How many and which criteria did you use to select a front-end framework? Which criterion was the most important one for you?

We put our main emphasis on the performance of the Language and the Framework,  
since this aspect ist really important for a video game like ours.

Also important was, that the framework and language aren't too complicated to learn,  
so it could be an achievable project for our school time.

- c) Which front-end framework did you select and why is it the best for your purpose?

We selected our custom c++ framework based on OpenGL, since it has the best performance,  
flexibility and the language is widely used in the video game industry.