Research into capabilities of modern web-development tools

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# Introduction

## History of web-development

The Internet, as we know it today, was not created all at once. It was a long process of small inventions that fueled a big machine. It is said that date of birth of the Internet is 1983. However, it was not the global network, only several hundred hosts across the United States. This date is chosen due to the switch to TCP/IP protocol. It was a standardized way of establishing communication between networks. Before that, NCP (or Network Control Protocol) was used. It was a good way of connecting two hosts and exchanging files using FTP (File Transfer Protocol), but it lacked scalability. And scalability was needed, since people realized that it was a perfect way of communicating between different institutions.

The first browser was introduced in 1990. Now the familiar shape of the Internet is forming. URLs became available, users got the possibility of accessing websites just by typing them in a convenient program, without having to write commands in a terminal. DNS system, which was created in 1984, also allowed using names instead of IP-addresses.

After the standardized software for accessing web pages, the young network needed a standard for creating them. HTML was introduced in 1993. At first it contained only the simplest of all features. Such as basic formatting, tables, images, hyperlinks and forms.

Back then, the only tools available were text editors and knowledge of developers. Web pages were basically text files optimized for sending them via network. When the user made a request, the server machine sent them, then it was shown by the browser on the local machine. Everything was plain and simple. No complexity nor extra details. The rendering was happening on the side of the server. After the request was received, the server would look up the needed page and send it to the user. Nothing like browser-side rendering was not present and essentially was not needed at that time.

The server side of the application was also raw and simple. The programmer had to manually establish connections, create requests and add content to them. No frameworks or automating tools were available. The first of them, ColdFusion, was created in 1995.

CSS was introduced a little later. In 1994 it was proposed by Håkon Wium Lie, Norwegian technologist. In 1996 it was initially released. The invention of CSS was a milestone in web development, since it allowed us to personalize pages. It allowed us to create a soul for our sites. Of course, the possibility of styling was proposed before Style sheets. However, the proposition lacked one crucial feature, the separation between writing html code and styling.

ECMAScript, or more known as JavaScript, is a scripting language. It was initially created for web pages. Its main task was to make them more “alive”. It allowed us to manipulate pages and dynamically change them. It was the first step to the browser rendering and frontend applications

In the next chapters, every part of the web application and the process of its creation will be described. The application will be divided into three parts. Backend, computed on the server and Frontend, computed in the browser of the client. The third part will be dedicated to the tools not directly involved in creating code, but simplifying the life of the developer, such as version control system or virtualization.

## Description of the problem

## Technology stack