

# WEB TECHNOLOGY

Web developers are responsible for creating websites that are not only visually appealing but highly functional and secure. While the exact skills you need may vary depending on your company's requirements, you must possess some basic skills to become a web developer. If you are interested in becoming a web developer, it can be helpful to know what skills you need. In this article, we define web developer skills and give you a few examples and tips for improving them.

## What are web developer skills?

Web developer skills are the specific skills required to get hired and as a web developer and excel in this profession. Possessing these skills may help you perform better than other candidates, both during the hiring process and in your everyday job. Some examples of web development skills include HTML, basic design skills, interpersonal skills and analytical skills.

## What are the skills needed to be a web developer?

Here are a few common skills you need to possess to become a web developer:

### HTML/CSS skills

Having knowledge of HTML and CSS is imperative to become a web developer. HTML is the most commonly used markup language globally. Web developers use this language extensively to build web pages. You also may need to use CSS to style websites. For instance, you can use CSS to implement different fonts, colours and layouts in the design of a website.

### Analytical skills

Web developers often need to examine any errors in their code. This requires good analytical skills. They need to ensure the code is correct and the website functions properly. Other than the technical aspects of the job, they also need to make sure the requirements of the clients are being understood properly. As a web developer, you will have to analyse the needs of your clients and adapt accordingly to make any changes to the website.

### Responsive web design skills

If you want to work as a web developer, it is imperative that you understand how responsive web design works. People can view a web page on different devices with varying screen sizes. Whether they use a desktop computer or a mobile phone, any website that you create must adapt to the varying screen sizes. If the website you build is not responsive, it would not be suitable for either desktop viewing or mobile viewing. So you have to be able to create websites with responsive designs, as failing to do so can affect the volume of visitors your website may get.

### JavaScript skills

JavaScript helps you implement some complex features onto a website. Knowledge of JavaScript will help you meet higher expectations of your clients when creating websites. For instance, you can use this programming language when your clients want to store data through caches or move search bars on a webpage. Mastery of these skills will help you create highly interactive websites that focus on user experience.

## Interpersonal skills

Having good interpersonal skills is important to be successful as a web developer, as this role requires interacting with clients and colleagues regularly. You should have positive body language and a strong work ethic. If you can get along with people well, you will communicate well with your colleagues and clients and perform well in your role.

## Testing and debugging skills

You may often need to test your webpage for any possible errors. In case you find any errors, you must have the knowledge to debug them. Regular testing ensures the code is working as expected. Hence, the ability to test regularly and debug the code on a web page is essential to be a successful web developer.

## Back-end basics

You must also understand the back-end basics of web development. Since you will be collaborating with back-end developers, it is important for you to know the fundamentals. For instance, you should know the basics of the working of servers, databases, cybersecurity and SQL.

## Search engine optimisation skills

Many clients prefer developers who know the fundamentals of search engine optimisation (SEO). This is because a website with good SEO ranks higher in search results, which helps attract more visitors to the website. Since clients often want to drive more visitors to their website, SEO is an important skill to have as a web developer.

# How to improve web development skills

Here are some steps you can follow to improve your web development skills:

### 1. Practise coding

The more code you write, the better you become. Writing code not only helps improve your typing skills but makes you better at catching mistakes in your code so that you do not repeat those mistakes. You can use different free tools available to practise online. If you remain consistent in your practice, you will surely see improvements.

### 2. Learn new technologies

Web development requires you to work with different programming languages and technologies. The technological landscape keeps changing continuously, and you will always have to keep learning new things. So make sure you keep learning new technologies and programming languages to keep yourself relevant in the market.

### 3. Improve your interpersonal skills

Work on your body language, try to be a good listener and learn how you handle pressure situations. All of this can help you improve your interpersonal skills. You can also join a good soft skills course to work on certain aspects of your personality.

# How to highlight web developer skills

Here are a few ways you can highlight your web development skills to employers and hiring managers:

## 1. Highlight on your CV

One of the best places for you to clearly and concisely state your skills and experience is your CV. Your CV should be well-structured and free of errors. You can list your web development skills in the skills section of your CV. Always try to back up any skills you mention in your CV with the details of a relevant project that you have completed. This helps you make a better impression on your potential employer than the other candidates applying for the same role.

## 2. Highlight in your cover letter

The cover letter you write provides a great opportunity to describe your experience and skills. This is one of the first impressions the hiring manager will get of you. So make sure your cover letter is free from errors and easy to understand. Keep it brief, tailor it to the job description and feel free to include background details about your web development skills.

## 3. Highlight during your job interview

During your job interview, you will have the opportunity to showcase your interpersonal skills. Make sure you have good body language and effectively communicate with the hiring manager. It is also a good idea to bring in hard copies of your resume and cover letter that highlight your skills. Be ready to answer questions that pertain to the role you are interviewing for and how your skills meet the job requirements.

# How to practise web development skills

Here are some steps you can follow to practise your web development skills:

## 1. Find an internship

You can take up web development internships at small agencies or startups. Such organisations are usually more open to hire interns and provide opportunities to work on actual projects. This will help you understand how web development projects work and will provide you with the opportunity to develop your skills in a professional setting.

## 2. Take up freelance projects

You can also choose to work on freelance web development projects. This is slightly different from internships in that you will not be a part of an organisation. Instead, you will work alone. However, here also, you get a chance to work on real projects and interact with real clients. In addition to getting the opportunity to improve your skills, you will also be able to make decent money by the side.

## 3. Work on personal projects

If you think you are not yet in a position to work as an intern or on any freelance projects, you can work on your own projects. This would not be a professional setup, and you would not be

interacting with any teammates or clients, but you will get the chance to practise your technical skills and build something from scratch. Such projects can then be used in your portfolio or CV to prove your skills to the hiring managers.

## Importance of knowing how to become a web developer

It is important for you to know how to become a web developer because this career option is unlike other traditional engineering and technology-related career options. Web development provides more options in terms of pathways to reach your goal. To make a good career in other technology-related areas, you will require at least a bachelor's degree. However, to become a successful web developer, based on whether you want to work for a big organisation or you prefer to go solo as a freelancer, you may or may not need to earn a degree at all.

You may need a degree if you want to work for an organisation with established practices and minimum qualifying criteria regarding educational qualification. However, if you choose to sell your services as a freelancer, for instance, then you just need to be able to demonstrate and prove your skills through a portfolio. A degree, or any other educational qualification for that matter, is not necessary in this case.



## What is web development?

Web development refers to the building of websites and various applications for the internet. Web development focuses on all aspects of website creation, from designing the website to programming the website's backend functionality. From some of the simplest web pages to complex platforms and applications, all the web pages and tools we regularly access through the internet have been created by web developers.

## What does a web developer do?

A web developer is primarily responsible for building and maintaining websites. Web developers may choose to work as a freelancer or may work in-house. The responsibilities differ based on whether you work as a frontend, as a backend or as a full-stack developer. Full-stack developers are the ones who specialise in both frontend and backend web development.

Web developers ensure that the product they build is as per the needs of the customer or the end-user. Web developers work in close coordination with the stakeholders and clients to understand their vision. Another major area of focus for web developers is identifying and fixing issues to improve a website or an application.

## Education for web developers

There are many educational paths you can take to pursue a career in web development. Some involve completing a degree, which may take a few years, or completing a professional training course that only lasts a few months. Here are some common education options for web developers:

### Self-paced study

You can choose to teach yourself the skills, processes and software used in web development. This study may include a unique combination of the following elements:

- Reading web development books
- Completing short, guided training modules online
- Getting guidance from online coding and web development communities
- Taking web development, programming, graphic design and other relevant classes
- Completing online coding challenges

This education path often helps prepare you for pursuing formal education, a certification course or "boot camp" that has pre-requisites.

## Professional "boot camp"

There are various streamlined training programs, often referred to as "boot camps," that prepare aspiring web developers for employment. In these programs, you will learn the basics of coding, including writing, reviewing, testing and revising code in languages such as HTML, CSS, JavaScript, C# and others. You will also learn how to translate user needs into well-structured and attractive designs. Other practical experiences include using coding languages to build wireframes, construct websites and internet applications, complete various web development projects and create a portfolio of work to demonstrate your qualifications to prospective employers and clients.

## General certification

Some organisations offer professional certificate programs that provide a general knowledge base and skill set in web development. Also, some universities, colleges and other higher learning institutions may offer a web development certificate that you can earn on its own or in conjunction with a degree.

## Bachelor's degree

Web developers who pursue a bachelor's degree through a four-year program at a college or university earn a Bachelor of Engineering in Computer Science or a Bachelor of Science in Computer Science. Students usually spend four years taking courses in computer programming, coding, design and math in this type of program.

Some employers may prefer web developer candidates to have a bachelor's degree, especially for roles in back-end development and other more specialised disciplines. Also, bachelor's degree programs may require you to complete internships and create final projects that may help in improving your resume.

## Master's degree

You can choose to pursue a master's degree after a bachelor's degree if you wish to specialise in a particular area of web development. A master's degree is useful mostly in cases where the employers have this as the minimum qualification criteria for certain positions. It is also a good idea to go for a master's degree in cases where the bachelor's degree is from a slightly lesser established college or university. You may want to have a good brand in terms of educational institutions attended on your resume.

## How to become a web developer

Here are the steps you can take to become a web developer:

## 1. Establish basic development skills

Before pursuing education, consider learning basic coding and design skills to create a strong foundation when beginning coursework. You can also take this time to complete self-paced modules and challenges.

## 2. Consider a training-focused program

If you prefer the shorter timeline and streamlined coursework, you can apply to a professional boot camp or certification program to quickly master the necessary skills and create a strong portfolio.

## 3. Pursue formal education

If you are looking for a career in traditional large-sized companies, opt for a bachelor's degree in computer science, web development, design or another relevant discipline. You can also choose to go for a master's degree if required for your chosen career path.

It is important to understand that formal education is not a necessary requirement for becoming a web developer. It is certainly possible to learn to code independently; however, you must understand that web development is not only about coding. If you can use your coding skills to suit a bigger picture of the entire web development life cycle, you may have an advantage when it comes to getting hired. This is where formal education can help you develop a thorough understanding of the various web development practices and principles.

## 4. Earn a professional certification

With a professional certification in a specific software or project management strategy, you can further test your knowledge and demonstrate your qualifications.

## 5. Develop your technical skills

Formal education has its own benefits, but web development is an area where actual skills can easily prove to be a more important factor than your degree when it comes to getting hired. Especially in the new-age result-oriented organisations, your ability to deliver results will always be more important than the source of your learning the skills. The same applies to any freelance opportunities you may want to target.

As a web developer, you should be an expert in three core areas: CSS, HTML and JavaScript. You should also learn about CSS and the different CSS frameworks. You would also need to be good in various back-end languages like Java, Ruby and PHP. If you possess these technical skills and are good at them, you will be more likely to encounter opportunities as a web developer. Hence, focus on developing your technical skills.

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## What is a web application?

A website application, which is also popularly known as a web app, is a software application program that uses web-based technology to perform specific tasks. Remote web servers host web applications and store relevant information from numerous connected computers. You can use a client program to run the web applications and access or enter the required data. That is why people often refer to web apps as client-server programs.

Larry Wall developed one of the first web applications in 1987. It was a server-side Unix scripting language known as Perl and was useful for processing reports. Since then, web applications have undergone many developments, and the current ones are far more sophisticated in their features and use than the earlier simplistic ones. They are also far more indispensable for personal and business use.

## How does a web application work?

A web app requires mainly three elements to function properly. This includes a web server to handle requests from the client, an application server to execute the tasks requested and a database to store the information. Here is how a web application typically works:

- The user will connect to the Internet and create a request to the web server through the application's user interface.
- The web server will process the request and send it to the right web app server.
- The web application server will perform the required task and generate the results of the required data.
- The web app server will send the information back to the web server.
- The web server will send the requested information to the client's device such as a laptop, desktop or mobile phone.
- The requested information will appear on the user's display.

## A developer's role in a web application

When developing a web app, the developer generally codes it for functionality using a combination of server-side script languages and client-side scripting languages. For instance, they may use Java, Python, PHP and ASP for the server-side script and HTML5, CSS and JavaScript for the client-side script. The purpose of the server-side script is to allow the web application to store information on the web server and to retrieve it when necessary. The client-side script is for presenting the information to the users. After the compatible browsers execute and run the program, the user can access the information they want.

Generally, small teams can conceive and design many web apps. At the start, they will decide whether they need to create dynamic web apps that need server-side processing or static web applications that do not require server-side processing. The development phases consist of

gathering information, planning and designing the application. It is also necessary to create and assemble content. The developers will then code the web app and test and review it for errors. After launching the web application, the developers will continue to monitor it for any necessary maintenance work and feature and coding updates.

## Difference between website and web application

A website and a web application have the following differences:

### Basic features and purpose

A website is a collection of static, interlinked and globally accessible web pages that you can view on a compatible browser. It provides information to the viewer using text, images and videos. A web app, in comparison, is a software program with interactive content and other elements for user engagement. The user interaction determines the value or usefulness of a web application. Increasingly, it is common to see hybrid websites that combine static and interactive elements to provide a better user experience.

### Compilation

It is not strictly necessary to precompile a website before you deploy it. Additionally, if you make site changes, you do not need full recompilation and deployment. It will be enough to update the HTML code. For a web application, however, precompilation is crucial for efficient deployment. The advantages will be a faster initial response time, source code protection and the ability to identify and catch errors early. Every time you make a change, recompilation and deployment are essential for the entire application.

### Integration

It is optional for a website to integrate with a third party, and the process is relatively simple. For a web app, its complex functionality makes integration with third-party software programs and online tools trickier. However, third-party integration is essential for web applications for data collection, storage and processing.

### User interaction

You can instantly access and view a website on a web browser. The most commonly used web browsers are Brave, Qwant, Mozilla Firefox and Safari. However, you can only see or read the website content on a browser. You cannot interact with it. A web app requires you to download and instal it on your mobile device. You can then access, interact with and manipulate its data in a personalised manner.

### User authentication

A website does not require user authentication from its visitors. It may prompt them to sign up for updates or its newsletters, though. A web application will generally require user authentication before allowing access to its numerous options.

### New updates

If you update your website, the updates will become immediately visible to your visitors. To upgrade a web application, you will have to visit its website or an online app outlet and download



the new version on your mobile device or computer. You will then need to instal it on the device before you can use the latest features.

## Benefits of web applications

Web applications have many benefits, including the following:

- They are easy to instal and use on different computers and mobile devices.
- They only need a compatible browser for their operation and are not dependent on any particular operating system or device.
- As they can run on multiple platforms, developers do not have to build separate client-side programs for different operating systems and computers.
- Since a remote web server stores the web applications, there is no need to host them locally, and you do not have to worry about the space limitations on your hard drive.
- Web applications are stored on a remote web server, which reduces the need for technical support.
- It is easy to make changes to web apps and keep them updated since all updates are applied centrally on the web server.
- As the same web application version is available to all users, so it eliminates any compatibility issues.
- If you get a custom web app for your business, you can customise and scale it and add more functionality per your business needs.
- They help reduce software piracy in subscription-based web applications.
- For business users, web apps offer better work management and improved work efficiency. You can use them to integrate data from multiple sources, share data spreadsheets with your team members and collaborate on projects and reports.
- Web applications offer a higher level of data security, as the data is stored on remote dedicated web servers. Experienced server administrators monitor these servers for any potential breaches and take action to prevent them.
- They use cloud data storage, meaning that you will not lose your data in the event that your computer or mobile device gets damaged.
- Different web apps can be interoperable with each other, allowing for better web integration and adaption of emerging Internet technologies.

## What is an example of a web application?

An email program like ProtonMail is an example of a web application. Other examples of web apps include an instant messaging app like WeChat, a social media platform like WhatsApp, a retail site like Flipkart and a photo-sharing application like Flickr. Other web apps that you might have used are Zoom and Microsoft 365. Web applications can include everything from shopping carts and spreadsheets to online banking. They have become practically indispensable across different industries for almost anything you might want to undertake.

## Is Facebook a website or a web application?

Facebook is a dynamic website that has the features and functionality of a web application. For example, Facebook collects data from users, moderators, advertisers and other sources and presents each individual user with a customised webpage based on their online interactions and preferences. It provides functionality beyond just information presentation.

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