

Guide to Becoming a Web Developer

Table of Contents

IntroductionIntroduction	1
What is web development?	2
The growing web development industry	3
Skills you need to work in web development	5
Tips for landing a web development job	10
How to launch your career in web development	13
Why coding boot camps are important	17
How coding boot camps work	18
The profile of a great coding boot camp	22
Myths about coding boot camps	26
Are coding boot camps worth it?	29
Things to know before starting a coding boot camp	31
Final thoughts	33

Introduction

Launching a career in web development can feel overwhelming — there are countless languages and tools to learn. For a beginner, even figuring out where to start learning can be a difficult task.

But, becoming a web developer is attainable if you have the right resources and determination. Once you have an idea of the skills you'll need as an entry-level web developer, you'll be better equipped to build your academic foundation and start learning.

This e-book is for anyone who wants to break into this in-demand field or grow their coding skills. We'll cover some basic terminology, web development specializations, and the tools and skills you'll need to develop and manage websites. We'll even discuss how to jump-start your career.

Additionally, this e-book will explain how a coding boot camp can help you break into web development. You will learn what coding boot camps are, how they work, and the things you should know before starting your boot camp journey. You will also see success stories from former boot camp attendees who were once in your position.

Let's get started!

What is web development?

At the most basic level, websites are collections of files and code stored on a server which is connected to the internet. You access a website by loading it through a browser (e.g., Chrome, Firefox, Safari), also known as "the client." This pair constitutes the "server-client model."

Let's consider the server-client model in action: One day, your friend sends you a link to a funny video. When you click on the link, your web browser (the client) sends a request to the video website (the server) asking for the video file. The website's server receives the request and sends the file to your computer.

The client side and server side are referred to as the "front end" and the "back end," respectively. Front end web developers focus on a website's client-side functions, meaning they deal with everything the user encounters when accessing a website (e.g., functionality, colors, appearance). Meanwhile, back end web developers focus on a website's server-side development, which usually involves writing the web services and APIs. Full stack developers are responsible for building and maintaining the "full stack" of development technologies — and thus have mastery of both front and back end technologies.

Here is a graphic to help you better understand the differences:

Profession	Focus	Skills
Front end development	Focuses on the client side of a website — the part that visitors can see and interact with. Front end developers primarily focus on designing and building the aesthetics and structure of a site.	Coding languages, user experience
Back end development	Responsible for the server side, or back end, of websites and applications. Their work ensures that the website functions as it is intended to.	Programming languages, servers, APIs, databases
Full stack development	As the name suggests, full stack developers are responsible for the "full stack" of development technology. They have the knowledge and skills necessary to tackle both front and back end challenges.	Programming and coding languages, servers, user experience, databases, APIs

The growing web development industry

There's no doubt that web development skills can help you stand out in today's job market. Programming plays a part in almost every aspect of modern life, and web developers are the architects of our digital world. These professionals ensure that our online experiences run smoothly, securely, and effectively.

If you're thinking about getting into web development, you have picked the right time.

According to the U.S. Bureau of Labor Statistics, the number of jobs available for web developers is expected to grow by 8 percent between 2019 and 2029 (double the average growth rate expected for all occupations), with a projected 13,400 open jobs annually. Put simply, this means that when every available web developer has been employed, there will still be 13,400 open web development positions!



<u>U.S. News & World Report</u> ranks software development as a top career across three lists: 100 Best Jobs, Best STEM Jobs, and Best Technology Jobs. The career also netted an 8/10 rating for salary, job market prospects, future growth, and work-life balance.

Given the uncertainty the pandemic has caused in our economy, you might be thinking, what about job security? When it comes to the field of web development, employers continue to value individuals who can deliver applicable skills. As Sergio Granada, Chief Technology Officer at Talos Digital notes in a <u>TechCrunch article</u>, full stack developers have become especially vital to businesses during the COVID-19 crisis:

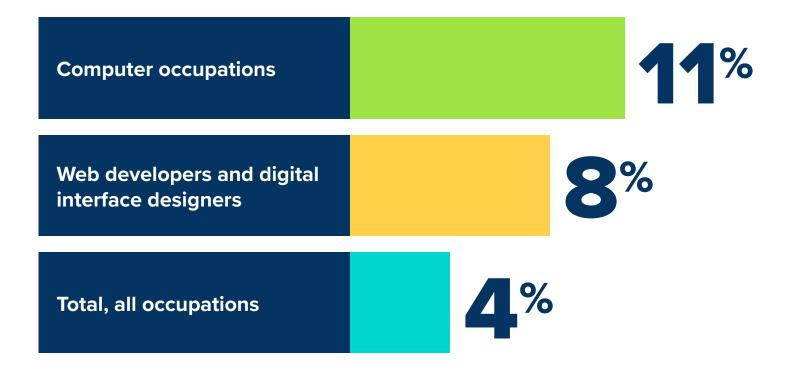


"In response to the coronavirus pandemic, the ability to do full stack development can make [web development and software] engineers extremely marketable as companies across all industries migrate their business to a virtual world. Those who can quickly develop and deliver software projects, thanks to full stack methods, have the best shot to be at the top of a company's or client's wish list."

When you consider a career in web development, it's hard to deny that the prospects are excellent and the opportunities for growth evident. In fact, one of the great things about the profession is that it welcomes talented coders of all ages and career backgrounds. However, before you start mapping out your career path, you need to learn the relevant skills and get your foot in the door. With this in mind, let's look into how you can become a web developer.

Projected Employment Growth for Coders

2019-2029



U.S. Bureau of Labor Statistics. "Web Developers and Digital Designers" (2019)

Skills you need to work in web development

As a coder, you'll use your programming skills to design, build, and manage applications and websites. What's more, your professional opportunities are nearly infinite — the value coding skills hold in our tech-forward world means that you could work for a Fortune 500 company or small startup in almost any industry.

But which coding capabilities are most sought out by employers? Up next, we'll cover a few of the technical and soft skills new developers should master to build a successful career. Keep in mind, the capabilities listed are by no means exhaustive, and aspiring programmers should conduct further exploration into the technical coding skills that will help them stand out during their job search in a particular industry or with a specialized organization.





Technical skills

Technical (or hard) skills describe the capabilities and knowledge needed to complete a particular task. In the field of web development, there are a number of technical skills that can help you stand out from the competition.

♦ Algorithm coding

To borrow a definition from Investopedia, "An algorithm is a set of instructions for solving a problem or accomplishing a task. One common example of an algorithm is a recipe, which consists of specific instructions for preparing a dish/meal."

Algorithms are at the heart of computer science, and while it's a bit odd to think of a programming term through a culinary lens, the metaphor works. Algorithms allow programmers to provide step-by-step guidelines for how a program should run and execute a specific technical solution, such as displaying relevant results to a Google query. Algorithms also make it possible to quickly sort and structure data in a way that is ordered and makes sense to viewers. As such, they are critical to programming specialists, such as data scientists, who need to organize and analyze massive amounts of information daily.

Understanding how to code, change, and fix an algorithm is fundamental to programming. Once you know how to write a functional algorithm, you will be able to build a host of other skills on that foundation.

Data structures

An understanding of algorithms leads us to our next hard skill: comprehending and using data structures. While an algorithm can order data when it is directed to do so, programmers need to understand how the data is organized in the first place. Data structures allow programmers to store data within specific frameworks and better facilitate communication between back end operations and front end users.

There are several <u>data structures commonly used by programmers</u>. An array, for example, holds and indexes items of the same data type, such as integers. This simple structure makes arrays ideal for sorting algorithms, and they are often used to construct other kinds of data structures, including linked lists, which organize data in linear, sequentially linked order; and stacks, which allow programmers to access recently placed items first, as if they were picking up the top book in a stack.

If you intend to pursue a career in programming, a basic understanding of data science and data structures will be necessary. Take some time to familiarize yourself with the fundamentals; you may find that doing so helps you better understand back end operations.

HTML & CSS

HTML and CSS are basic coding languages — often, they are the first two that programmers learn. HTML (HyperText Markup Language) helps organize the content and structure of a web page, while CSS (Cascading Style Sheets) determines its style and presentation.

These two coding languages are vital to a programmer's skill set because they guide front end development and empower programmers to turn basic code into beautifully designed, functional, and accessible web pages. When a consumer clicks a link, it's the work of a front end developer that takes them to a homepage or digital shop. These programmers use HTML and CSS to provide the information and guidelines for how the web page should appear and be structured for navigation.

Whether you plan on being a front end, back end, or full stack programmer, CSS and HTML are languages that you'll need to know in order to succeed in your career journey.

JavaScript

JavaScript is another key language for all aspiring programmers. Like HTML and CSS, JavaScript is most commonly used for front end development, but can also be applied to back end coding. As one writer for Mozilla explains, "Every time a web page does more than just sit there and display static information for you to look at — displaying timely content updates, interactive maps, animated 2D/3D graphics, scrolling video jukeboxes, etc. — you can bet that JavaScript is probably involved."

SQL & NoSQL

Back end development is responsible for the part of the website that visitors do not see — it's where programmers build the code that structures the visible part of the website. The back end stores and organizes data so that the visible side of the site continuously works. When users take action on the front end of a website, those actions send information to the back end. That information is then translated into information the browser can understand and use to provide a response.

Two of the most common programming languages used to communicate with databases on the back end of a web page are SQL and NoSQL.

SQL, or "Structured Query Language," is the standard language used to communicate with relational databases. While it may be a relatively old technology (it was developed in the 1980s), it's still considered critical for modern developers. In recent years, SQL has been heavily used by PC databases because it facilitates access to distributed databases (e.g., those spread out over multiple computer systems) and allows for easy storage and organization of relational data. This distribution enables several local users to access the same network simultaneously.

If you want to gain experience with SQL databases, MySQL is a good place to get started. This database is open-source software that people can use for free to develop their own systems, applications, and websites.

NoSQL, in contrast, is used to work with non-relational databases. Having a way to organize data that isn't strictly

relational gives developers more flexibility, which is very helpful when tackling challenging problems. One example of a NoSQL database is MongoDB, which can be used for high-volume data storage and complicated business challenges.

∯ APIs

An API (Application Programming Interface) is the part of a remote server that receives a user's requests and sends responses to the rest of the server and website.

A programmer can set up a website's API to complete a user's request and connect it to an external server without leaving the original site. For example, you might sign up for an event on a website and automatically get a Google Calendar invite even though you never left the original site — all thanks to an API. Having familiarity with APIs ranks high on any programming skills list because it helps improve the user's experience on a website.

Git

Git is the most widely used modern version control system in the world. It allows programmers to manage and track changes to their source code throughout development, and makes it easy to correct any errors that may occur because every version is saved and can be recalled on demand.





Soft skills

While technical skills are critical to a successful career in web development, organizations today are also looking for professionals that possess equally strong soft skills. Soft skills involve interpersonal skills that facilitate positive relationships with other people and traits that enable success. In fact, research has shown that many of the top characteristics of success at companies like Google are soft skills. Without them, it can be difficult to excel in your career, even if you have all the technical competencies mentioned above.

Communication

Understanding how to successfully communicate with the people you're working with — your coworkers, your boss, or your clients — is an integral part of any programmer's skill set. You need to feel comfortable communicating your ideas and advice in meetings and during project collaborations. It's also helpful to be able to adequately explain the reasons why you did something or how a product or feature works, especially when talking to a client. The ability to communicate effectively is essential for minimizing conflict and helping achieve key goals.

P Teamwork

Being able to productively collaborate within a group is critical for achieving success in development. In 2016, a group of Norwegian academics conducted <u>research into</u> <u>how teamwork quality impacted achievement for software developers</u>. Perhaps unsurprisingly, they found that effective teamwork had a "strongly positive" effect on team members' learning and work satisfaction.

When you're working in a team environment, as most developers do, it doesn't matter how brilliant you might be as an individual. If you can't constructively share your ideas and support those of your teammates, you'll all have a hard time reaching the height of your achievement potential. To be clear, being a cohesive team doesn't mean that you're perpetually in agreement; rather, it's how you apply differing ideas to reach a common goal that makes for great collaboration.

Patience

Patience is a virtue — and the lack of it is anathema in the workplace. While it's easy to become frustrated when you're debugging a particularly clunky bit of code or working with people who just aren't up to speed on a project, you need to have the wherewithal to maintain your composure. If you don't, you may end up becoming part of the problem. Rather than working with you, others may feel hurt and avoid asking you for your input. In the long term, this may slow project progress, negatively impact team cohesion, and possibly affect your career.

It is worth noting that falling into a pattern of impatience can be detrimental to your health, too. According to Live Science, "People who frequently become impatient and angry are in a constant state of stress. The body reacts to that stress by releasing hormones such as adrenaline or cortisol which help the body respond to a stressful situation." This reaction, one health writer for the platform explains, can have a dramatic impact on your cardiovascular health in the long run. So, you see, cultivating patience is beneficial — both for the sake of your team and your overall health.

Accountability

If you want to stand out as an exemplary employee in any programming role, accountability needs to be one of your top skills. You might not always have a manager who holds you accountable, so being able to keep yourself responsible speaks to your work ethic and will help you produce high-quality work on a consistent basis.

Accountability also means taking ownership for and learning from your mistakes. By acknowledging your mistakes, you demonstrate a sense of humility and provide your team with the opportunity to identify the issue, find a solution, and avoid making the same mistake in the future.

☆ Positivity

Maintaining a positive attitude makes it easier to work through programming challenges — both for you and your team. Web developers should approach problems and conflicts in a respectful, positive way to facilitate reaching a common solution. There are going to be times when holding onto a positive attitude will be difficult. Still, it's a testament to your professionalism as a developer if you're able to remain cool-headed and not allow outside negativity to impact your attitude or your work.

Problem-solving

Uncertainty is a fact of life. No matter how knowledgeable you are or how skilled you become as a programmer, you will eventually find yourself faced with a task that stumps you. Your frustrations could stem from a particularly gnarly piece of code or a feature request that, for the life of you, you haven't a clue how to build. You'll be confused and annoyed — but if you're willing to work through the problem, you'll eventually find the answer.

Problem-solving skills are just as important for programmers as technical ability. As Wealthsimple's VP of Engineering Dominique Simoneau-Ritchie wrote for <u>Hacker Noon</u>, "The more senior you are, the more you'll be expected to take on complex, poorly defined problems, often with very little context. The true secret to increasing your impact is learning how to tackle a problem of any size and breaking it into manageable pieces that you can successfully solve."

A large portion of being a successful developer is understanding how to solve problems within the software you're programming. No matter where you work or what you do, you will encounter problems. Knowing how to approach them and find a solution is a vital skill.

Curiosity

Last but not least, curiosity is a fundamental part of being a good developer. "The best developers tend to be naturally curious people who love to learn," CodeFights CEO Tigran Sloyan wrote for Tech Beacon. "This proclivity drives them to constantly improve and explore new and better ways of doing things."

Without curiosity, a programmer might fall into a rut and not bother to stay on top of new tools and ideas. This lack of interest can be deadly to a developer's career, given the fast-paced advancement that characterizes any tech-related field. If you aren't on the cutting edge, you'll almost certainly be left behind. Maintain your curiosity and push yourself to learn new skills, even if your employer isn't asking you to do so. Plus, you never know — continuing your education might make you a more marketable professional.

Now that you know more about some of the hard and soft skills required for a career in programming, it's time to discuss how to actually land the job.



Tips for landing a web development job

Preparing to enter the coding world and land your first job as a junior web developer can be challenging. Whether you are new to coding or already have the skills to do the job, these tips will help you strategically plan your job search, stay organized, and set yourself up for success.

Here are eight tips to help you pursue a junior web developer position:



Determine your goals and objectives

When you first get started, your focus is to find a job, but what are your goals and objectives for the months that follow? Don't just think about them — write them down with details and measurable action items. Think beyond the basic "I'll take any job that comes my way," and instead, identify tangible variables like industry, title, and desired companies to create a clear outline of what's required to find the job you actually want, while also working toward your long-term goals.

Break down your short-term goals

After setting your long-term goals, create a strategy for achieving smaller, short-term goals. These short-term goals will help keep you motivated and moving toward your larger objectives within your job search. For example, if your long-term goal is to work in a specific industry within one year, you'll need to achieve a few short-term goals to get there (e.g., attending industry networking events, setting a goal to read "x" number of industry-specific periodicals each month).

Updating your resume and portfolio and taking extra courses are just a few of the short-term goals you may want to consider adding to your action plan.

Build a support system around you

Rejection is one of the most challenging things you will face no matter where you are in your career. Staying positive and motivated can be very difficult when confronted with a steady stream of "We have decided to pursue other candidates" responses from hiring managers. So, what's the best way to endure rejection and remain positive when searching for a job? A solid support system.

Try teaming up with someone who will hold you accountable throughout the entire process, regardless of how challenging your search becomes. Choose someone you trust and respect: a spouse, colleague, family member, or friend can make a solid accountability partner during your job search. You may also want to reach out to teachers or industry professionals for additional guidance.

Once you've built up your support system, give those people the green light to offer you honest feedback, regularly check in on you, and provide support and encouragement as you keep searching for the perfect junior web developer position.

10

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Network with peers and industry experts

While solid skills and experience are key components to any job search, who you know is often just as important. Start growing your professional network as early as possible. Industry events, support groups, coaching sessions, and even online groups are all great ways to build connections with others in the coding field. This will not only grant you direct access to helpful hiring information, but you will also have the opportunity to share and discuss relevant industry details that can prove to be extremely helpful in interview situations.

Dedicate enough time -

Many job seekers are surprised to learn just how long the search can be. Go into the process with an understanding that your search will require a considerable amount of time each week and plan accordingly to accelerate the process. Keep in mind that for every web developer job, there are likely hundreds of applicants and it takes time for hiring managers to sift through the applications to identify the top candidates to interview. Clearly, this will influence the length of the interview process and the duration of your job search. In short, treat your search like a job until you secure the role you want.

Stay motivated and keep moving

"After you've established your long- and short-term goals, created a support system, and formulated a plan to tackle your job search, it's time to take action. Start with your smaller objectives, completing each one as thoroughly as possible. Check off each item as you complete it before you move on to your next goal. The consistency of taking action, followed by accomplishment, will help keep you motivated and continue to fuel your job search process.

Acknowledge your accomplishments

Job hunting for a junior web developer role can often be challenging and, at times, outright discouraging. However, as you start achieving your goals and gaining traction in the process, you'll discover that there's plenty to celebrate. Always take note of your progress and accomplishments, celebrating major milestones at each step. These milestones may include a phone screening, interview invitation, or post-interview assignment.

Acknowledge your achievements by rewarding yourself with something reasonable that means something to you — whether that's an exciting purchase, a small getaway, or simply an episode of your favorite show. Celebrating wins both big and small can help keep you motivated and energized as you tackle the next item on your goals list.

Always follow up

Today's growing market for web developer jobs means it is crucial for candidates to stand out from the competition at each step of the hiring process, particularly during the interview stage. After you've demonstrated your skills, talent, and collaboration abilities, follow up with every hiring manager to thank them for their time and reinforce key items discussed during the interview. This practice may seem outdated, but a friendly follow-up note can help differentiate you from the many other applicants seeking the same opportunity.

Steps for a successful job search

Here is a quick recap of the steps we just outlined above.



Step 1:
Determine
Your Goals and
Objectives



Step 2: Break Down Your Short-Term Goals



Step 3: Build a Support System Around You



Step 4: Network with Others



Step 5:
Dedicate Enough
Time



Step 6: Stay Motivated and Keep Moving



Step 7: Acknowledge Your Accomplishments



Step 8: Always Follow Up

How to launch your career in web development

If you've already attended university, have a job in another field, or simply don't have the time to seek a conventional degree, you may be feeling uncertain about how best to make the career leap. But don't worry — a degree isn't the only way to learn the skills needed to get hired as a coder. Below, we've listed a few of the steps to follow as you make your transition into a web development or software development career.

1. Explore online resources and keep learning

Generally speaking, how you start your career journey will depend on your level of experience and specific interests. If you already know coding fundamentals, you may feel comfortable launching into formal classes right away. Hobbyists or beginners, however, may prefer to spend some time exploring a few coding basics online.

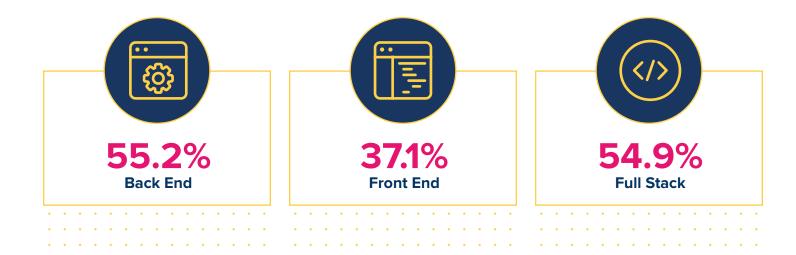
One of the first steps you can take when planning your career change is to take advantage of free online coding resources. Countless online lessons and tutorials provide valuable career advice, host opportunities for project-based learning, and offer extra insights into the theoretical underpinnings of computer science.

While these resource sites can provide you with valuable coding lessons and exercises relating to basic languages such as HTML, CSS, and JavaScript, they are not designed to facilitate a rapid career change.

2. Consider your specialty and focus

As you expand your coding knowledge, consider what kind of programmer you'd like to be: front end, back end, or full stack. If you know how you want to apply your coding skills professionally, you can seek out courses, internships, and projects that suit your interests. This isn't to say that you necessarily need to pick a specialty — if you're uncertain, a more generalized study path can help you figure out what you want to do in the future.

Almost every coder has some kind of specialization. According to <u>Stack Overflow's 2020 Developer Report</u>, 55.2 percent of surveyed developers identify as back end professionals, 37.1 percent as front end, and 54.9 percent as full stack.



3. Seek out a tech internship and practical experience

You may want to consider a part-time tech internship to exercise some of the coding skills you learn. After all, internships can give you real experience with an employer and excellent references to take to your next job — some may even provide an opportunity for full-time employment.

You could also volunteer your skills with a nonprofit organization you support, either through an internship program or another arrangement. You'll be able to add independent, successful work to your portfolio and stack up another positive reference for future employers as you provide meaningful support to a cause you're passionate about.

Additional Resources:







4. Build your own website and projects

One of the best ways to help launch a career in web development is to build a website. After all, an advanced online portfolio is a near-essential component of a strong tech resume when you're looking for a new career in coding. Use your portfolio website to show employers that you understand the technologies needed for developing a site and demonstrate your other technical capabilities via your linked projects.

Don't underestimate the power of getting involved in open-source development communities. These virtual forums allow you to contribute to significant projects, expand your knowledge (especially in widely used programming and scripting languages), and make excellent connections in the field.

5. Network

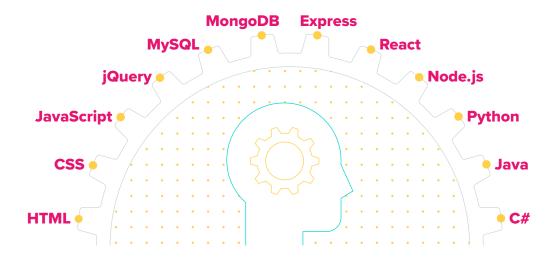
Let people in your professional circle know when you are looking for a job and attend local and virtual networking events to make even more industry contacts.

6. Further your education with a coding boot camp

If you're wondering how to become a coder in under a year and have no coding, web development, or software engineering experience, a coding boot camp can help you get up to speed in as little as three to six months.

Coding boot camps are intensive educational options that help learners build foundational knowledge in core technologies. Unlike university computer science programs, boot camps are designed with a stronger emphasis on practical skills and hands-on experience employers look for when hiring.

Skills you can learn in a boot camp may include:



These classes also offer flexibility. You can attend a virtual coding boot camp on either a full- or a part-time schedule, depending on your other responsibilities and availability.

To be clear, a boot camp is not a self-study educational route. Even if you attend a boot camp remotely, you'll receive individualized training, education, and interaction with your instructors — just as if you were attending an in-person coding boot camp. As an enrollee, you'll engage in focused, accountable study, gain proficiency in a wide range of popular coding languages and technologies, and work on individual and group projects that will eventually serve as the core of your professional portfolio.

By the boot camp's end, you'll have a level of comfort, familiarity, and knowledge of coding that will empower you to hit the ground running on your first day on the job.

Employers know this, too. A boot camp credential proves that a candidate has marketable skills, works well under a tight timeline, and is willing to put their all into assignments.



According to a <u>recent survey from HackerRank</u>, 39.2 percent of surveyed hiring managers believe that boot camp learners are just as qualified as their conventionally educated peers, and 33 percent say that boot camp learners are more qualified.

The same study also found that the majority of hiring managers believe that boot camp credential holders excel because they learn new technologies and languages quickly (71 percent), have strong practical experience (61 percent), and are eager to take on new responsibilities (52 percent).

Top Reasons Boot Camp Alums Succeed, According to Hiring Managers



52%

said ability to learn new technologies & languages quickly said strong practical experience

said eagerness to take on new responsibilities

HackerRank. "2020 HackerRank Developer Skills Report." (2020)

Why coding boot camps are important

Technology is continuing to evolve and, as a result, how we do everything in our lives is constantly changing. We go from place to place using technology-driven transportation companies like Uber or Lyft, while companies like Apple, Square, and PayPal are changing the way we make purchases.

As technology becomes more ingrained into our everyday actions, there is an ever-growing demand for individuals with the skills to help businesses keep up and innovate the next big advancement. In turn, these advancements have spurred changes to the job landscape, leading many people to pursue new career paths or realize that they must upskill in order to remain competitive in today's market. This tech and digital skills gap means individuals need to gain hard skills fast — and that's where boot camps come in.

Attending a coding boot camp is a viable path to transition into a web development career. The great news is that boot camps can either be an alternative or a supplement to traditional computer science degrees, helping fill the need for skilled software developers across a variety of industries. You may be wondering if you'll be able to compete against those with a degree, but for many of today's employers, it's no longer essential for candidates to have a traditional degree. Instead, hiring managers often look for practical hard skills combined with technical knowledge, soft skills, and real-world experience.

This next section will help you understand how coding boot camps work, why they are valuable, and why they can be an excellent alternative to a traditional university education.



How coding boot camps work

Boot camps are short-term, high-impact training classes that equip learners with in-demand technical skills and the portfolios to prove them. Upon completion, participants are trained and ready to apply for entry-level developer jobs. Learners can choose to specialize in digital skills like data science, digital marketing, UX/UI, cybersecurity, technical sales, and full stack development. Understanding your preferences, interests, and personal goals will help you select the right boot camp for you.

Aspiring developers have a lot to benefit from during a boot camp: 1-on-1 career guidance, collaboration with a network of peers, and graded assignments. Some boot camps even provide learners with relevant industry problems offloaded by partnering companies, allowing participants to pepper their professional materials with real-world project experiences and build their portfolios with work samples.

If you want to gain more than skills, a boot camp may be the right fit for you, since most options typically provide continued career services for participants once they've completed the boot camp. Reputable boot camps are interested in bolstering their learners' success, and do everything possible to connect successful learners with development positions.

In recent years, coding boot camps have witnessed an explosion in popularity

\$399M

\$889M

10.7%

global coding boot camp market value in 2018

projected global coding boot camp market value by 2026

compound annual growth rate (CAGR) from 2019 to 2026

Verified Market Research. "Global Coding Bootcamp Market Size By End-User, By Mode of Delivery, By Geographic Scope And Forecast" (2021)

<u>Ten percent of software engineers surveyed this year</u> stated that they learned to code purely through boot camps, and this number is even higher within younger demographics. Nearly one in six Gen Z developers <u>said that they had used boot</u> camps to learn new skills.

Boot camps launched 33,959 successful learners into the field in 2019 and, as of the summer of 2019, coding boot camp classes were available in 71 U.S. cities and 38 states, with 14 of them offered remotely. Given social distancing requirements due to the global pandemic, and the corresponding adjustments boot camps made for the safety of their learners, it's reasonable to assume that a significantly greater proportion of boot camps will continue to be offered virtually in years to come.

On average, coding boot camps take around three to six months to complete. Typical part-time classes allow enrollees to balance their education with a full-time job. In contrast, full-time options present a challenging but effective schedule that upskills developers in just three to four short months.

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Given a boot camp's condensed time frame, it's critical to understand what they include — and what they don't — as opposed to traditional degrees. Doing your research and gathering relevant information can help you make the best decision for your future.

Boot camps vs. traditional degree timelines

Most computer science learners spend four years completing their degrees, taking computer classes that cover a wide range of topics relevant to computing (e.g., programming and software development). They might take additional classes in networking, operating systems, and computing theory to supplement their technical learning. These classes are helpful for understanding the field academically, but may not provide the practical focus on the daily life of a real-world software developer.

In comparison, the typical timeline for a coding boot camp is relatively short, making it ideal for those who want to accelerate their learning. In order to make this work, most non-essential skills are often cut from a coding boot camp curriculum. This means that coding boot camps are ideal for individuals who want to obtain the technical skills that will make them attractive to employers within a very short time frame.

Coding boot camps accomplish this by isolating the most workplace-relevant skills taught in a traditional degree path and infusing the curriculum with up-to-date industry skills — bridging the gap between the theoretical world of academia and real-world industry needs. Despite their differences, both a computer science degree and credentials from a quality boot camp can provide a viable path to starting a career in web development. In fact, many people do both.



"[The coding boot camp was a] great experience. I have previous coding experience from community college but had to drop out due to work. This allowed me to quickly get into the industry after quitting my old job. It has had a big impact on my life as it helped me get into the career I always hoped for." – Ryan F.

Why employers are drawn to boot camp learners

Many of today's leading employers embrace new models of education, including virtual and remote learning. As a result, we see a number of employers hiring boot camp learners due to their work ethic as well as their combination of hard skills (technical knowledge) and soft skills (e.g., adaptability, collaboration, creativity).

In addition, because virtual boot camps focus on high-demand skills and how to apply them in the workplace, learners become workplace-ready while building a robust portfolio of projects to show off to potential employers.

One quality that is often noted about virtual boot camp learners is their ability to learn quickly. With new tools and technologies routinely being introduced, this skill is essential for anyone working in the tech landscape. Proceeding through the accelerated pace of a remote boot camp tells an employer that you're ready for a rapidly moving, demanding career.

"I had a wonderful experience and the boot camp truly changed my life. I was working in a job I began to hate, and now, in a matter of months, I am working as a web developer. The curriculum was challenging, yet doable while working a full-time job." - Lorna S.



A survey of 1,000 HR managers and technical recruiters at U.S. companies found that the majority of employers "think boot camp graduates are just as prepared and likely to be high performers as candidates with computer science degrees." The same survey also found that 80 percent of these hiring professionals have offered jobs to boot camp learners within their company, and 99.8 percent would do it again.

Let's break down a few reasons why employers are drawn to candidates with a boot camp education.

Personal accountability

Creating a culture that encourages accountability is an ongoing process for many of today's employers. Sam Reese, CEO of Vistage Worldwide, writes in an article for The Business Journals, "[Accountability is] the ability of a person to provide focus on an initiative, make the necessary decisions, and garner support from their organization to achieve success."

Remote learning is a great way to practice and demonstrate personal accountability by prioritizing regular attendance and keeping up with lessons. This self-drive translates directly into workplace accountability, with virtual boot camp learners often becoming dependable employees who can be counted on to complete tasks on time.



Lifelong learning

Given the rapid changes we are seeing in tech fields today, a passion for lifelong learning is essential for any aspiring web developer. A recent publication called **The Future of** Lifelong Learning suggests that 375 million workers across the global workforce may need to learn new skills by 2030.

Those who attend virtual boot camps typically possess a strong desire to obtain more knowledge and information. This curiosity allows them to continuously learn, expand their skill set, and benefit employers with their newfound knowledge.



"The program was extremely well designed. It started off with the basics, and quickly scaled up. I've been in the tech industry for a while, but still found a lot of areas where the program helped fill in gaps in my knowledge - some I didn't even know existed!" - Saumil B.

Technical skill set

Many companies today are struggling with tech talent shortages due to the digital skills gap. In fact, 70 percent of executives say current employees lack tech and computer skills. As such, those who complete a virtual boot camp have an advantage when it comes to the tech skills gap simply by the nature of how they're able to learn, as well as the skills they gain.

The ability to learn, discuss, and illustrate complex technical concepts in a virtual environment is a key workplace skill in and of itself – one the business community has come to value during the pandemic. In addition, a significant portion of a boot camp's curriculum is focused on teaching in-demand tech skills. Learners gain a wide set of technical skills and put them into action, walking out with an impressive professional portfolio and the confidence needed to succeed in a wide range of tech professions.

Soft skill set

While technical skills are critical, organizations today are also looking for professionals that possess equally strong soft skills. Research has shown that the <u>seven top</u> <u>characteristics of success at companies like Google</u> are soft skills such as communicating and listening well, critical thinking, and being able to collaborate across diverse teams.

Soft skill development is a fundamental component of a boot camp, with many involving team-based projects that simulate real-world work. Remote boot camp learners can expect to learn soft skills such as collaboration, communication, adaptability, critical thinking, and more.



The profile of a great coding boot camp

With a wide range of coding boot camps on the market, it is important to identify the characteristics of those that provide a top quality learning experience. Your answers to the questions below can help you choose a boot camp that meets both your educational and career goals.

1. Will I be able to interact in real time?

When it comes to learning difficult subject matter, nothing beats real-time interaction. Look for remote boot camps that are held in a dynamic virtual environment, giving you the ability to ask questions as they arise and work collaboratively with your peers on projects. A high-quality boot camp should also use different tools and technologies to facilitate discussion, lab work, and hands-on projects.

Hear from our alumni: Ernesto R. – Miami, Florida

Ernesto went to college because he thought it was "the next step," but felt like the content was too broad and he wasn't getting hands-on, practical knowledge. So, he left college and found our coding boot camp. Not only did he find the technical knowledge he was seeking, but he also found what felt like a family. He loved collaborating with his peers; brainstorming, working on projects, and refining presentations. Though the pandemic required online interaction, Ernesto felt his boot camp family pulled together and successfully navigated the challenges.

Learn more about Ernesto's story here.

2. Can I learn on a flexible schedule?

It is important to choose a boot camp that is adaptable to your individual learning preferences and your lifestyle. Look for an option that is built with flexibility in mind — offering structured options to suit your unique needs and schedule. Many boot camps offer evening and weekend options designed for people like you who are actively pursuing a career change or advancement, but who need the flexibility to work around existing life commitments.

Hear from our alumni: Kyle C. – Cleveland, Ohio

Kyle found himself in a job he hated after graduating from college. Then, he stumbled upon information about our coding boot camp while scrolling through Facebook and he was intrigued. With a full-time sales job and a two-year-old at home, Kyle knew the part-time option was right for him, and the online environment really added the flexibility he needed to succeed. Kyle now works as a junior web developer and is excited about the challenges and sense of personal responsibility it offers.

Interested in Kyle's story? Learn more here.

3. Does the boot camp teach the latest frameworks/technologies?

The first step to a thriving tech career is to learn in-demand, relevant skills. When looking for a remote boot camp, seek out those that teach the skills and technologies that employers are looking for. By the end of your chosen boot camp, you should be able to take the skills you've learned and apply them to projects that showcase your versatility as a tech professional.

Hear from our alumni: Andy D. – Toronto, Canada

After studying art and digital media in college, Andy had been relatively happy with where he was — but felt limited in his career growth. He realized he needed more technical skills to pursue his dream job as a full stack developer, and enrolled in our boot camp. Andy was able to gain the technical skills needed during the boot camp and, with the help of the Career Services team, he was able to land a job as a full stack developer

Learn more about Andy's journey here.

4. Will I gain real-world experience and build a portfolio?

Today's employers want to make sure that new hires can put their knowledge into action. That is why high-quality virtual boot camp curricula include hands-on projects that closely mirror the work you might do in the industry. These projects will help you build a portfolio and demonstrate to future employers that you can use the latest technologies in collaborative scenarios.

Hear from our alumni: Adi C. – Chicago, Illinois

Our coding boot camp helped Adi launch a fulfilling career in front end development after years as a music teacher. The boot camp also gave Adi the guidance she needed to build a strong portfolio of professional-caliber work during the boot camp — which helped her land a job in web development shortly after completing the boot camp.

Learn more about Adi's journey here.

5. Is career planning and support provided?

The best boot camps will support you both during and after your educational journey. Look for a boot camp that invests in your job search success through interactive preparation. This support can help you highlight your technical and soft skills, ensuring you stand out in the job market.

A robust professional development team can also help you transfer the skills that you're learning in the boot camp to your professional materials and communicate those new skills to hiring managers and employers.

Hear from our alumni: Benjamin G. - Orlando, Florida

Benjamin was a social studies teacher who found himself drawn to technology and coding. After taking a front end boot camp, he found he wasn't able to land the employment he desired, so he decided to pursue full stack development and enrolled in our coding boot camp. The career services support he received helped him market his new full stack skills, and he is now a solutions developer.

Read more about Benjamin's journey here.

Look for virtual boot camps that offer career services such as:



Live office hours



Portfolio reviews



Behavioral or technical interview training



Professional materials and social media profile support



Virtual tech panels



1:1 career coaching



Soft skills training



Attendance and homework tracking



Customizable tools and templates

6. Will I be supported along my journey?

When learning a new skill, it's essential to have the support you need during your journey. Consistent access to a strong support network composed of an instructional team, peers, as well as learner support and Career Services teams will help you get the most out of your learning experience, while also adding to your professional network. Having a strong team behind you can help lead to success in the classroom and in the next steps of your career.

Hear from our alumni: Rebecca W. - Augusta, Georgia -

Rebecca was teaching at Augusta College, but had always wanted to take coding classes — she just wasn't sure she was "good enough." Then she found our coding boot camp and enrolled. She was worried at first, but she was met with support and positivity from the beginning. Rebecca said, "They showed me that I wasn't alone in doing this." She went on to complete our boot camp, took on a new role as a web developer with Augusta College, and realized she definitely has what it takes!

Learn more about Rebecca's story here.

7. Will I benefit from financial support?

While boot camps are a great way to jump-start your career, they also tend to come with a financial commitment. While browsing remote boot camps, make it a point to gain a solid understanding of the financial options available for each one. Look for boot camps that offer funding options such as an interest-free payment plan or early registration pricing incentive.

Hear from our alumni: Alexandra L. – Phoenix, Arizona

"I chose to attend in order to change careers, and it was much quicker and less expensive to attend the boot camp than to attend another grad school. The boot camp allowed me to pursue another career without accumulating more student loan debt, and that will surely have an impact on my life."



Myths about coding boot camps

If you've decided to learn web development, but still aren't completely sure if a boot camp is the right fit for you, you probably have some additional questions you need answered. To make sure you have the best information available to help decide what's right for you, there are some myths about coding boot camps that we'd like to discuss — and debunk.

Myth #1:

Coding boot camps are for people who aren't serious about a career in programming.

Quite the contrary — coding boot camps are actually for people who are certain about starting their career in web development and have taken the initiative to dive right in. If you consider a coding boot camp's condensed timeline versus that of a conventional degree, you'll understand that kickstarting your career and choosing to attend an intensive coding boot camp is a decision that requires passion and dedication.

Similar to a traditional university education, a learner will get out of a coding boot camp what they put into it. Regardless of the time frame, if you're dedicating yourself to learning the material and putting it into practice, you will be able to use your skills in real-world web development projects. The truth is that you do have to put in the work in order to get the most out of the boot camp.

Coding boot camps take less time to complete than a traditional university-based education, but the intensive curriculum ensures that participants learn a range of concepts and skills that they can use to start or further their career.



"Yes! This program is tough. If you are not willing to put the effort into studying like any other university program you will not succeed — it is not called a boot camp for no reason. But ... if you are willing to put in the effort for this course, the instructional staff and everyone involved with this program is completely hands-on and willing to help you succeed! ... I am currently only halfway through this program and I have already received multiple job offers! I would recommend this program to anyone who is serious about making a change in their life, it is truly life-changing!"

- Kaliesha P.



Myth #2:

I'm too old to attend a boot camp and change my career.

This is absolutely not true. Many coding boot camp learners are seasoned professionals deciding to try something completely new as their "second act" career. Specifically, they've spent significant time in a job that doesn't fulfill them, and now they're making a bold leap toward a career that interests and excites them.

As long as you're an individual that is determined, willing to learn, open-minded, practical, and analytical, age has no bearing on your ability to succeed in a coding boot camp.

"I chose to take the coding boot camp to refresh my technical knowledge after a 10-year career break. So much had changed in 10 years and I wasn't sure where to begin. The boot camp increased my breadth of knowledge across technical topics and I am working on my own to bring my former subjects/languages up to the current version. The boot camp was the fastest way to learn these new topics and it was great to be able to ask the instructors and TAs about the current state of the tech industry... I also chose this boot camp over others because of the career

Myth #3:

I don't know anything about computers or coding, there's no way I could learn computer programming in only a few months.

support provided after the boot camp." – Ruth L.

You don't need prior coding experience to be successful in a boot camp, so don't let your fears or doubts deter you from reaching your goals. Plenty of learners arrive at coding boot camps with very little knowledge about the field, so you're not alone. After all, that's what the class is here to help teach you.

As long as you enter the boot camp with a hard-working, "can-do" attitude, you'll do just fine. Most boot camps are designed with all skill levels in mind, helping create an open and supportive learning environment. There is no reason for you to hold yourself back from learning to code — you can do it!

"I loved the boot camp. I chose it because my grandfather was a computer programmer and he always said I had the mind for it! So I decided to go from restaurant manager to full-time student! I'm so glad I did, I finally feel like I found my calling in this world and it's challenging yet rewarding!" — Rayna W.

Myth #4:

Most programmers I know are men. Maybe the field isn't for me because I'm a woman.

Women hold over twenty-five percent of the nearly 4 million computing jobs in the U.S. today, and this number is growing. There's never been a better time or a greater need for women to be part of today's digital revolution. Studies show women are often early adopters of new technologies, so don't let the notion of a "boys club" discourage you.

There are many accomplished women who code, such as Jade Raymond, Corrinne Yu, and Edith Clarke — and we need more! What's more, there are a number of organizations dedicated to demonstrating the value and supporting the goals of women in this field, including <u>Women Who Code</u> and <u>AnitaB.org</u>.

To learn more about how alumni from Trilogy-powered boot camps are breaking down barriers, check out <u>7 Women</u> Closing the Tech Gender Gap.



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Are coding boot camps worth it?

At this point, you know how a coding boot camp can help set you up with market-driven technical skills, that employers value boot camp learners, and even how to find the best option for your needs. But you might still be wondering:

Are they worth the investment in the end?

<u>Poll after poll</u> reveals that software developers occupy some of the most coveted jobs around the globe. It's easy to understand when a high degree of autonomy, significant pay, flexibility, and job satisfaction are inherent to the profession. <u>Stack Overflow's 2020 Developers survey</u> notes that 62 percent of developers are either somewhat or very satisfied with their jobs, and the <u>Bureau of Labor Statistics</u> reports that the employment of software developers is on track to grow 20 percent between 2018 and 2028.

Without a doubt, software development is one of the hottest careers on the market today — that is, if you can break into the field.

The most conventional path into the coding sector comes via a relevant degree program. According to Stack Overflow, about 75 percent of developers worldwide have completed at least the equivalent of a bachelor's degree or higher.

However, most undergraduate degrees require four years of full-time study. This is a significant time commitment, especially if you have to balance existing professional and personal responsibilities. Plus, attending a university program requires a significant financial investment that isn't an option for every aspiring programmer — and that's okay. Coding boot camps are here to fill the gap.



"I was stuck in a dead-end job with no skills that would be applicable in a career. As soon as I realized I was capable of understanding and writing code, I saw a possible future in it with endless career possibilities. I stumbled upon an ad for the program on a Google search and signed up. The experience was as tough as I expected, but I tried hard and did very well. This is probably the best decision I've ever made." – Brian N.

What if you don't already have a degree? Education is always valuable, and everyone has opinions on what is best. To understand the right decision for you, it's important to know that web development is one of the few STEM disciplines with many viable training options.

In the past, many large corporations would only consider developer and programming candidates with a bachelor's degree or higher. However, that trend began to change around 2017 as hiring managers at large, premium brand corporations (e.g., Google, IBM, Apple, Starbucks, Bank of America) began realizing that candidates from different educational backgrounds can add value. For example, Joanna Daley, IBM's Vice President of Talent, told <u>CNBC's Make It</u> that "... instead of looking exclusively at candidates who went to college, IBM now looks at candidates who have hands-on experience via a coding boot camp or an industry-related vocational class."

29

According to HackerRank's 2020 Developer Skills Report, hiring managers also believe that unconventional <u>educational</u> <u>experiences provide candidates with benefits that go far beyond education alone</u>. Almost three-quarters of surveyed hiring managers said that boot camp learners are adaptable and able to learn new technologies and languages quickly. Sixty-one percent cited their strong practical experience, and another 52 percent said that boot camp learners are often eager to take on new responsibilities and tasks.

While there will always be some programming jobs that do require a traditional degree in computer science, there is no shortage of opportunities available to determined learners, especially if they do their research into employment opportunities and invest in alternative learning pathways like coding boot camps.



Things to know before starting a coding boot camp

Even if you've come to the decision that a coding boot camp is the educational route you want to pursue, taking this next step can be intimidating. We know, trying new things can be worrisome and stepping outside of your comfort zone can be difficult — even for the most confident among us.

Here are 10 tips to help you prepare for coding boot camp success before you jump into the action.



Make sure the path is right for you

Before you commit yourself to coding boot camp, do your research. Web development is a great way to enhance your skills and access new opportunities, but you want to be sure the day-to-day activities of a professional web developer will be fulfilling and enjoyable for you. Knowing that you'll be energized and excited about your everyday projects will help you feel more confident as you begin your boot camp journey.

Remember, everyone else is new, too

No matter what you're studying, the first day of class is always a little nerve-wracking. But don't let it get to you. Remember that everyone else is in the same boat and you're all in this together. Many learners find the support of their peers through group projects and study groups helpful in their learning process, making it an enjoyable experience. They often comment that the friends and network created during their boot camp is like no other, and many learners stay in touch long after their boot camp is complete.

Dedicate yourself

Once the boot camp starts, don't let your motivation slip away. Code whenever you can to make sure you're getting the most out of your education and really mastering your new trade. By practicing every chance you get, you'll also learn your strengths and weaknesses. Take this as an opportunity to seek help in any areas that you might need more help or practice.

Don't get discouraged

No one ever said learning to code was easy, so don't get frustrated if you hit roadblocks along the way.

This is the perfect opportunity to grab one of your study pals for help or take a breather to clear your mind. Whatever you do, don't be too hard on yourself — becoming a skilled coder happens over time with patience and practice.

Network, network!

Even though they're just your boot camp buddies now, you never know where your peers will be headed after completing the class. You could be sitting next to your future business partner or the next head of programming and development at a large company. Building a network with your classmates is a crucial part of the boot camp experience.

During the boot camp, make sure to also introduce yourself to any guest speakers or workshop instructors. They could be the link you need to land that dream job after completion.

Don't fall behind

It's easy to get overwhelmed, but falling behind in your coursework (even by one day) can become a huge hurdle in your studies. The best way to overcome this is to prevent it from happening, but if you do find yourself falling behind the pack, turn to the many resources available to you. Ask a member of your instructional staff for a catch-up session or meet up with a study pal. Don't be afraid to speak up if you feel behind — you don't want to feel discouraged for the rest of the boot camp.

Clear your schedule

If you're committing yourself to a coding boot camp, making time for practice and homework is crucial. While attending class regularly is imperative to your success, so is the time you dedicate to projects and coding practice outside of the classroom.

Don't put things off until you have no other choice but to rush through them. Take quality time to really absorb the material, practice it, and become confident in your abilities.

Join a programming community

Programming communities (discussion boards, forums, Facebook groups, etc.) are another resource you can use to help motivate, encourage, and challenge yourself during your boot camp and beyond.

Joining a community gives you the chance to meet other programmers who can provide you with advice or answers when you need them. It also allows you to get new perspectives and make valuable connections.

Define your goals -

Set some goals and remind yourself why you're doing this in the first place. Is it to make more money? Is it to get a better job? No matter your "why," make sure you have clearly defined it for yourself. Write it down somewhere or display it above your desk. Constantly reminding yourself of your goals can help you stay on track, stay organized, and stay motivated.

Get involved -

Whether you've hit a mental block or you're just looking for new ideas, getting involved with peer discussions, collaborations, and coding communities can help you find just what you need.

Actively immersing yourself in the field can provide you with great ideas, new friends, and the motivation you need to maintain momentum throughout your boot camp.

Final thoughts

The field of web development requires analytical skills, strong attention to detail, and the desire to keep up with advancing technologies. For the curious and dedicated, this can be a satisfying pursuit. And, a coding boot camp represents an exciting opportunity for you to take the next step into this promising career path.

For many people, web development is more than a job — it's a way to deliver an exciting new product, change the way companies do business, and have a tangible effect on society. Further, coding has become a lifestyle with a vibrant community of fellow coders and developers.

Our hope is that you have been able to make an informed choice for your future after reading this e-book. Choosing a boot camp and a career in coding is a big decision, but you now have information to help you decide if it is the right path for you.

