NJIT

Guide to Becoming a
Software Development Professional

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As the world becomes more reliant on byte-sized data, our expectations of how we interact with the digital world are changing. The demand for better, more seamless online interactions is growing concurrently with the demand for software developers.

Software developers break down the traditional needs for specialists, as they bring with them experience and versatility in multiple areas of development.

As innovative digital builders, software developers drive the growth of a world built on trillions of lines of code.

Their ability to drive positive online experiences, help businesses solve their customer's problems, and give consumers the digital products they crave make software developers a powerful and essential part of today's workforce.

So, you want to be a software developer—or at the very least, you're curious about what this career path can look like for you.

The great thing about becoming a software developer is that you can get started even if you have no experience or background in this field.

With the right training, support, and a lot of hard work, a software development career can become your reality sooner than you think.

Let's get started with the basics.

What Does
Full-Stack Mean?

A software developer with a full-stack skill set builds front-end and back-end applications, creating solutions that shape the world around us. They can build databases, mobile apps, and websites utilizing multiple coding languages in a single project.

In short, a software developer with a full-stack can execute a web development project from start to finish, or in developer terms, from back to front.

BACK-END

Think of the back-end like the skeleton of a website or mobile app. It's the backbone and what the server interacts with.

FRONT-END

If the back-end is the skeleton, then the front-end can be thought of as the website's skin or mobile app. It's what the user interacts with, like the design and the interface.

What is
a Stack?

A stack refers to a specific skill set that makes up your overall capabilities. A stack can be a programming language, software, or framework. If your stack allows you to work on front-end and back-end development projects, that is considered a "full" stack.
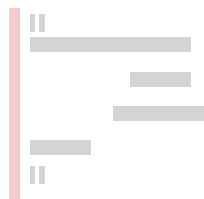
HTML

JavaScript

CSS

Express

Git

The more applications, languages, and programs you can add to your stack, the more agile and adaptable you will be as a professional.

What Does a
Software Developer Do?

As a software developer with knowledge in all development stages, part of your job is to ensure applications' responsiveness. You can write code for web or mobile applications, APIs, servers, and, ultimately, connect to and communicate with databases. If you're working on a team, your role may include collaborating with graphic designers and other tech professionals.

A software developer's job can vary month to month and even day-to-day! One moment you may be fixing a small bug, and the next, you're building a new application feature from scratch.

> According to the US Bureau of Labor Statistics, web developers' jobs are expected to increase by 13% in the ten years from 2018 to 2028.

Stack Up
Your Skills

As a successful professional, you're able to function seamlessly within a team to accomplish business objectives. While the following skills are crucial, this is not an exhaustive list. As you gain more experience in the field, you'll likely pick up some new skills along the way and expand your stack as you grow.

{ ⚆⚆ }
Hard skills

Fundamentals of computer science | Front- and back-end languages |
Designing and developing APIs | Database/web storage | Web architecture |
Server-side frameworks | Cybersecurity

{ ♡ }
Soft Skills

Excellent written and verbal | Communication | Empathy | Diplomacy |
Problem-solving | Creativity | Organizational skills | Attention to detail

> A different language is a different vision of life.

)_Federico Fellini.
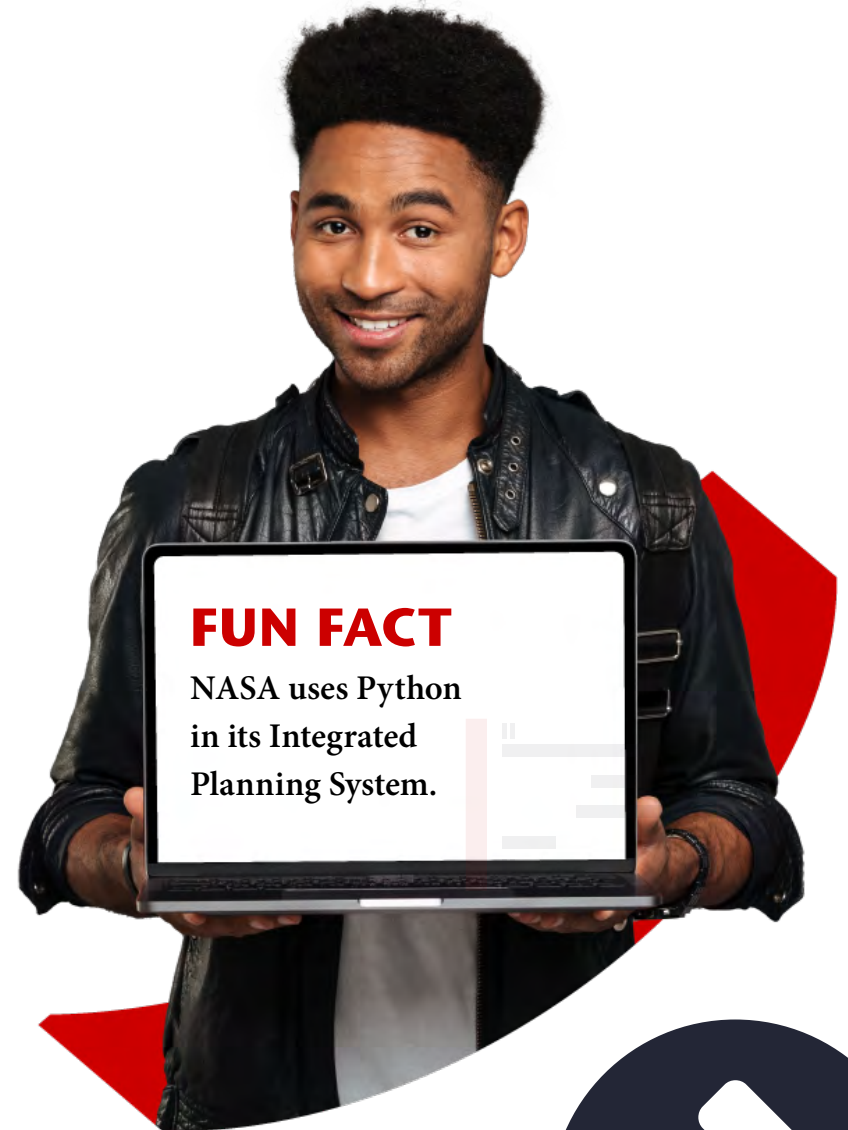
The Languages
You Need to Know

Software developers use programming languages to give instructions to a computer in a language that it can understand. Each language has its distinct features, but you will notice similarities between them once you start diving into the multiple languages.

There are countless options to choose from when deciding which languages to learn. The important thing to know when you're getting started is that there are primary languages that can help you build a solid foundation. You can then build on them to learn more as you grow in your profession.

Python

If you have started researching software development or programming in general, you may already be familiar with Python. There's a reason it's the most used programming language—it's simple to learn, allows you to work quickly to integrate systems, and has associated frameworks for developing web-based applications.

FUN FACT

NASA uses Python in its Integrated Planning System.

➔ The Languages
You Need to Know

HTML

HTML

HyperText Markup Language is the standard markup language for creating web pages. All pages displayed online use HTML, which allows for websites' structure and appearance to be as complex and diverse as possible. Text formatting and visual images are made possible with HTML.

JavaScript

JavaScript

This front-end programming language processes commands on a computer rather than a server and is commonly placed into an HTML file. Its basic features are easy to learn and can be used with multiple frameworks.

FYI
There is no relation between JavaScript and Java.

❝❝ HTML5 is <u>used by 85.9%</u> of all the websites whose markup language we know."

❝❝ According to <u>Indeed</u>, Python is the most demanding programming language in the USA job market with the highest 74K job posting in January 2020. Also, Python ranked third with a $120K yearly salary."

❝❝ CSS is <u>used by 96.1%</u> of all the websites."

❝❝ According to the 2019 <u>Stack Overflow Report</u>, JS is used by 67.8% of developers. It's also the most complex programming language, with 8.36% of JS code being deeply nested."

Wait, what's a
framework?

Instead of reinventing the wheel, a framework is a reusable code or software that provides specific functionality to use in your program. Frameworks expedite software development for increased efficiencies and have usually been worked on, tested, and optimized by previous developers to help you focus on your program's high-level functionality.

Popular Frameworks

{ React }   { Ruby on Rails }   { Angular }

{ Spring }   { Express }

Software Development
Careers

{ **Job demand for web developers is expected to grow 13%** }

Now that you know more about what a software developer does and how their roles impact users, let's look at the career opportunities waiting for you. While "software developer" is growing in demand, you can take similar career paths with the same knowledge and training.

01

Software Engineer.
There are several specializations within this role, like applications architect, database administrator, and mobile developer. A software engineer can work on both front-end and back-end but likely focuses on one or the other exclusively. Every industry needs software developers, so choosing this niche comes with booming opportunities.

02

MERN Stack Developer.
MERN refers to a specific stack (MongoDB, Express, React, and Node.js) and is becoming a powerhouse in the field. This JavaScript stack makes the development process smoother by design and provides an end-to-end framework for developers.

Careers

Front-End Developer.

03

If you want to focus more on the visuals and design the user experience, this is the path for you. These professionals develop new user-facing features and are proficient in web markup, HTML5, and CSS3. You will most likely work with JavaScript to create an experience that delivers a delightful and seamless interaction.

Application Engineer.

04

The primary function of this role is to design and improve the software. Other duties might include developing custom software or evaluating client needs to implement unique goals within each project. Professionals must remain a step ahead to plan and implement updates or expansions.

Software Develop
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Advice
From Reddit

We know Reddit is a go-to source for real, uncensored insights, so we scanned the threads and picked a few that show the ups and downs of the road to becoming a software developer—and a few helpful tips for beginners.

"...Managed to secure my dream job and enjoying every moment of it now. The trick here is be organised and consistent..."

Read more

"...Once I realized this I almost zoned out, just coding and coding and coding until I had a finished product...."

Read more

How Can I Become a
Software Developer?

Becoming a software developer is an exciting career choice and filled with opportunities to grow as a professional. This rewarding career path comes with hard work and dedication as you learn new languages, gain muscle memory for lightning-fast coding, and develop the knowledge required to build software from scratch.

Learn to code.

Find a learning option that suits you and your lifestyle. While a four-year degree might be available to you, a bootcamp is a fast-track to breaking into the field, regardless of your experience.

At the New Jersey Institute of Technology Software Development Bootcamp, industry experts train you with interactive tools and get you coding from day one. Learn the essentials and prepare to take industry certification exams to help you land the job of your dreams.

➔ How Can I Become a
Software Developer?

Show off your skills.

Don't just learn a new skill—show it off! Building a portfolio is the best way to prove that you know what you're doing. It's an easy way to show employers, clients, and business partners what you can do for them and can only help you in your search for a development role.

You will use the training projects completed throughout the bootcamp to begin building your professional portfolio.

Build your network.

As with many professions and industries, it's not always what you know but who you know. Our learners gain access to our exclusive network to help you connect with industry leaders and expose you to what hiring managers are looking for in candidates.

Making these connections is a great way to better understand the field and open yourself up to opportunities you might not otherwise have if you chose to learn on your own or through traditional four-year education.

⊘ How Can I Become a
Software Developer?

Set up your online presence.

With our career coaches available to you, you'll refine your online presence on the most notable networking platforms, polish your resume, and work on interview-prep to help you present your best self at job interviews. These one-on-one coaching sessions can mean the difference between "hired" and "still hunting."

Land the role of your dreams!

With all of these resources at your disposal, it's now up to you to put them to work. Our program allows you to begin working upon program completion, so you won't need to worry about qualifying for one of the thousands of available roles. We prepare you to pursue the career path of your dreams from day one.

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Take the First Step Towards
Your Software Developer Career!

(_ Learn the languages necessary to start working upon program completion. **)**

(_ Learn AI and machine learning, Alexa skills, and cybersecurity. **)**

(_ Receive professional career coaching and build your network. **)**

(_ No experience required. **)**

Get in touch with our admissions team to learn how you can switch to a software development career in less than a year.

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