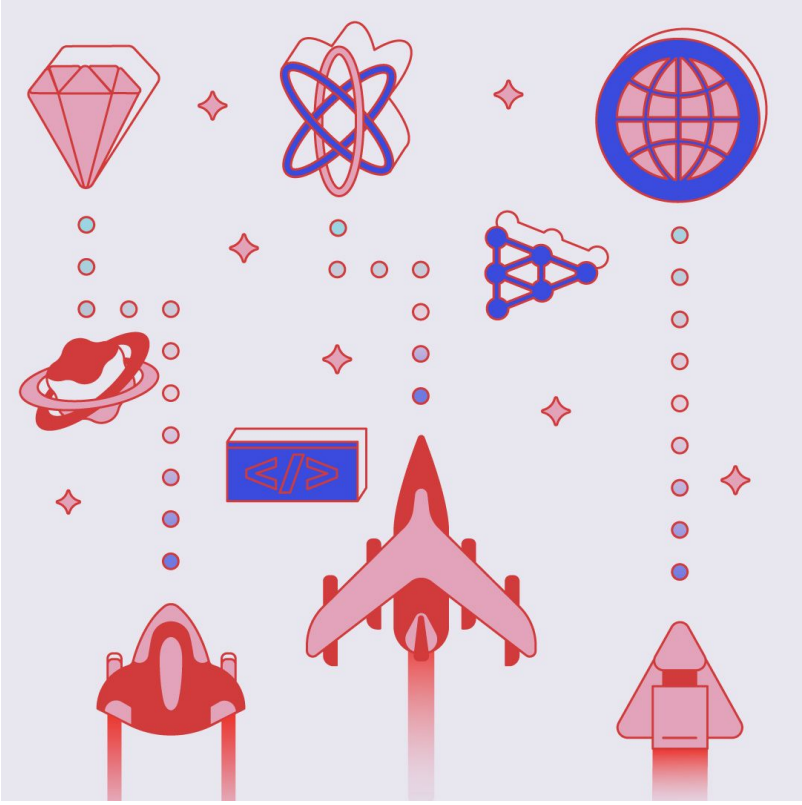

SOFTWARE ENGINEERING

Software Engineer Career Path

By Thinkful

If you're an aspiring software engineer, you can expect regular opportunities to progress your career. As you learn technical skills and gain experience, new doors will open. You'll have the choice to continue working with code, or to use your understanding of the software development lifecycle to lead teams.

process, you'll give yourself a solid foundation to add value in any company.

We're here to describe the most common job titles in the field of software engineering, as well as the skills you need to perfect in order to excel in them. We'll also offer up some pro tips on how to advance your career, or switch to software engineering from a totally different industry.

Software Engineering Job Titles

Let's look at some typical job titles to get a better understanding of just how flexible a future in software engineering can be:

- **Front-End Engineers**: A front-end engineer focuses on building the user interface for a website or application. They're responsible for the look and feel of a website and handle anything a user can interact with.
- **Back-End Engineers**: These professionals work on the server-side of web applications. This includes web services, database design, and integrating data feeds. Shopping cart functionality or a secure payment system are examples of back-end development.

- **Full-Stack Engineer**: If you combine front-end and back-end development, you get full-stack development. Full-stack engineers have a wide range of skills in both user interface design, and technical database configuration.

- **Mobile App Developer**: Mobile engineers build software for smartphones, tablets, and other mobile devices. They need to have a solid understanding of Android and iOS, build responsive apps that work on a range of different devices, and consider technical limitations like memory and processing power.

- **Graphics Engineer**: These engineers use 2D and 3D digital platforms for gaming and video production. In the early days, graphics engineers were required to have expertise in math and computer science. But more recently, open-source frameworks like Unity and OpenGL handle most of the heavy lifting.

- **Game Engineer**: The video game industry is big business and game designers are highly sought-after. The role typically involves modeling physics, 2D and 3D graphics, and game mechanics.

- **Data Engineer**: Software engineers that specialize in big data are called data engineers. They're responsible for storing, organizing, managing, and analyzing information. Data engineers find useful insights from data to help make informed business decisions.

- **DevOps Engineer**: DevOps comes from development and operations. A DevOps engineer is someone who facilitates, oversees, and expedites the process of code release or deployment of applications.

- **SDET (Software Development Engineer in Test):** A SDET engineer not only develops software but also performs testing. Their goal is to ensure software is robust, bug-free, and efficient.

- **Embedded Systems Engineer**: Unlike standard software applications that run on computers or mobile devices, embedded software is used to control machines. Programs that run on a car, a microwave, or an elevator are examples of embedded software systems. Embedded systems engineers face unique challenges such as hard memory constraints and time-critical operation requirements.

- **Security Engineer**: As the name suggests, these engineers design solutions to safeguard software or networks from hackers or cyber threats.

A Typical Career Path for a Software Engineer

Below is a common career path for a software engineer. Bear in mind that each company will have its own specific roadmap and this is just an example.

- **Junior Software Engineer**: At the beginning of your career you'll have limited experience and start in an entry-level position. As a junior software engineer, you'll be required to develop software to meet client requirements within a specified time frame. You'll report to your team leader, who will act as a mentor and guide you. During this period of your career, you have the opportunity to learn new skills and gain essential experience working on real-life software projects.

- **Senior Software Engineer**: After a few years, you'll become a senior software engineer. You'll learn new programming languages, and master the software development lifecycle. You may have the opportunity to train junior engineers or even manage a small team of your own. You'll start to be introduced to other business elements such as project budgets and high-level company objectives.

- **Tech Lead**: As a tech lead, you'll be responsible for the entire software development process. You'll manage a large team of professionals involved in software design and development. You'll be required to report development progress to company stakeholders and provide input into the decision making process.

- **Team Manager**: If you have strong leadership skills, you can progress into a managerial-based role. You'll be responsible for the wellbeing of the entire team and will oversee their career progression.

- **Technical Architect**: As a technical architect, you're expected to overlook the entire architecture and technical design. You'll be required to build processes for the team and provide technical leadership. This role will also involve looking into the scaling of support systems.

- **Chief Technology Officer**: A CTO is the head of an organization's technological needs. They oversee R&D and employ technology to improve products and services for their clients. This is often considered the pinnacle of a software engineer's career.

Responsibilities of a Software Engineer

Here are some common responsibilities associated with the software engineering role:

- Design and develop software using the software development lifecycle
- Meet with customers to understand their needs and provide continuous updates
- Design and develop test cases and debug automation suites
- Collaborate with cross-functional teams and clients to come up with effective solutions
- Monitor and maintain existing systems and work on enhancements when needed
- Keep teams up to date with the latest project data
- Coordinate the installation of new systems and maintain existing ones
- Train junior engineers

Software Engineering Skills

In order to thrive in a software engineering role, there's a whole spectrum of hard and soft skills you should focus on building.

Hard Skills:

Your primary function as a software engineer is to build effectives pages, apps and software. So first and foremost, you need some tangible hard skills like the following.

- Front-end and back-end coding knowledge
- Understanding of agile development methodology
- How to test and debug your own code
- How to write clean code with clear comments

Soft Skills:

As you advance in your discipline, you'll find that your job isn't limited strictly to coding. You'll also have to train others, lead teams, and communicate with other departments. So plan to lean on these nifty soft kills, too.

- An ability to communicate technical information
- Time management
- Team collaboration

If you manage to excel in a few of these areas, you'll become a key part of any engineering team - and a highly coveted employee.

How to Advance Your Software Engineering Career

As you know now, software engineering isn't all about mastering JavaScript and HTML. You'll need to go above and beyond in a few key areas in order to stand out to employers, and achieve your highest earning potential.

If you want to progress quickly in the field of software engineering, then plan to:

- Take on extra work, even outside of your immediate responsibilities
- Pitch in to help others on the development team
- Collaborate closely with other departments, like marketing, UX design, and data teams, to better understand their needs
- Ask lots of questions so you fully understand the broader goals of your business or clients
- Ask for feedback on how to improve your code

- Get involved in software engineering communities outside of work to further improve
- Share industry developments and articles with your team to establish yourself as a thought leader who's invested in the field

Job Outlook for Software Engineers

According to the Bureau of Labor Statistics, the demand for software developers is expected to grow by 22% from 2019 - 2029. That's a lot faster than average growth.

That demand is driven largely by the fact that almost any company needs an online presence, and has growing tech needs. Software engineers have the skills to build the pages, apps, and other tech tools that businesses rely on to be competitive.

These unprecedented demands have translated into lucrative compensation packages as tech firms jostle to secure top talent. A software engineer in the U.S. can now earn at least $100,000.

If you're entering this field, you can be confident that there will be growing demand over the next decade and beyond. As long as you develop a strong work ethic, are committed to the field, and continue to learn as you go, then you'll have plenty of job prospects in any city or industry across the U.S.

How to Start A Career in Software Engineering

A degree in software engineering or computer science is the traditional approach taken by many students. But with tuition fees rising and a typical bachelors course lasting 4 years, some are seeking alternative forms of education. Software engineering bootcamps are becoming increasingly popular. Unlike a degree course, they hone in on

the skills employers are looking for to help students fast-track their way into a well-paid position.

If you're interested in becoming a software engineer, enroll in our software engineering bootcamp to kickstart your tech career. You'll gain hands-on experience by learning with industry professionals. We'll support you every step of the way to help you land your dream software job.

Feel free to browse our tech blog to read more insightful articles on tech careers.

FAQs

How do I become a Software Engineer?

You can become a software engineer by having a bachelor's degree in software engineering or information technology. You should also have a good knowledge of software development and important programming languages like Python, JAVA and C++. Developing soft skills is necessary for growth at management level.

How much does a Software Engineer make?

The salary of a software engineer can vary from $80,000 - $120,000 based on his level of experience in the field. The salary also depends on the level of expertise a software engineer has in specialized in demand skills such as software development, JAVA, SQL, Python, Microsoft C#, etc.

What's the job outlook for a Software Engineer?

Software Engineers have great career opportunities. Their demand is growing as many companies need an online presence for their businesses to stay relevant. Many

business organizations need skilled software engineers to help in building pages, apps and other tech tools needed to remain competitive in the market.

Career in Software Engineering

- What is Software Engineering?
- What Does a Software Engineer Do?
- Software Engineer Salary
- Software Engineer Skills
- Software Engineer Entry Level Jobs
- Software Engineer Internships
- Software Engineer vs Data Engineer
- Software Engineer vs Web Developer
- Front End vs Back End Developer

Become a Software Engineer

- Software Engineering Bootcamps
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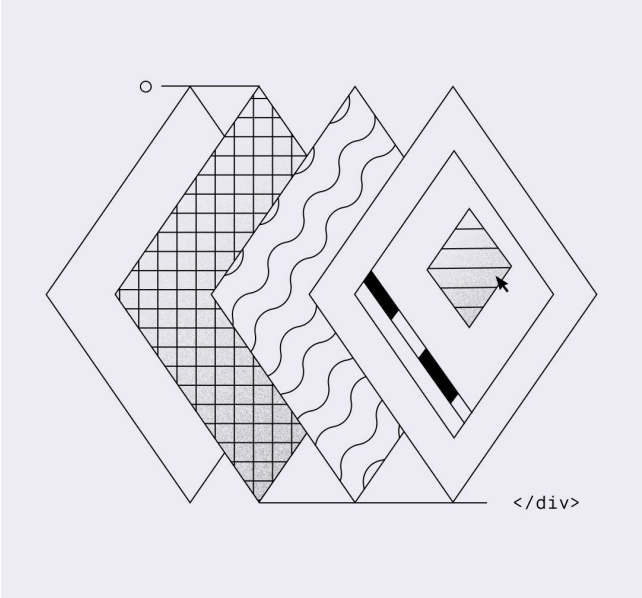
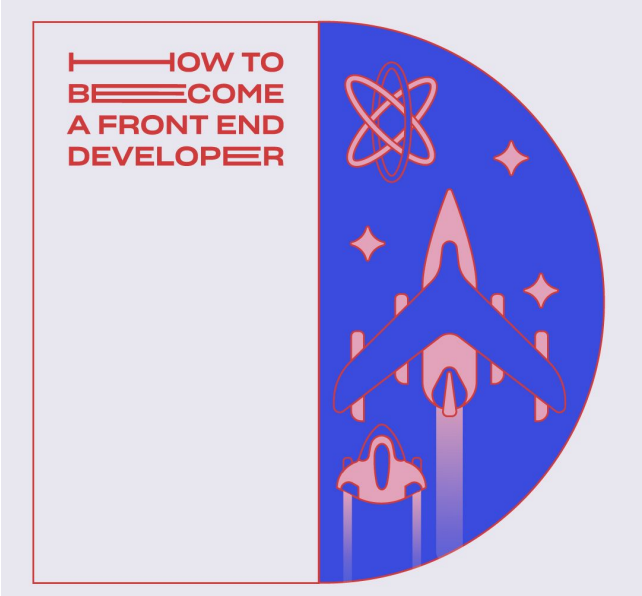
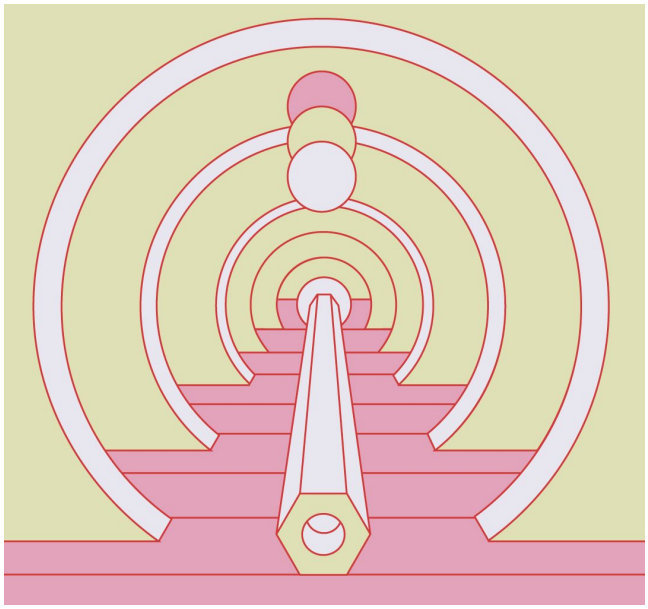


How To Become A Software Developer



How to Become a Front-End Developer



What Does a Software Engineer Do?

Courses

Software Engineering

Data Science

Data Analytics

UX / UI Design

Digital Marketing

Technical Project Management

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