

What is a Full Stack Developer: Required Skills and More in 2023

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Last updated on Feb 1, 2023

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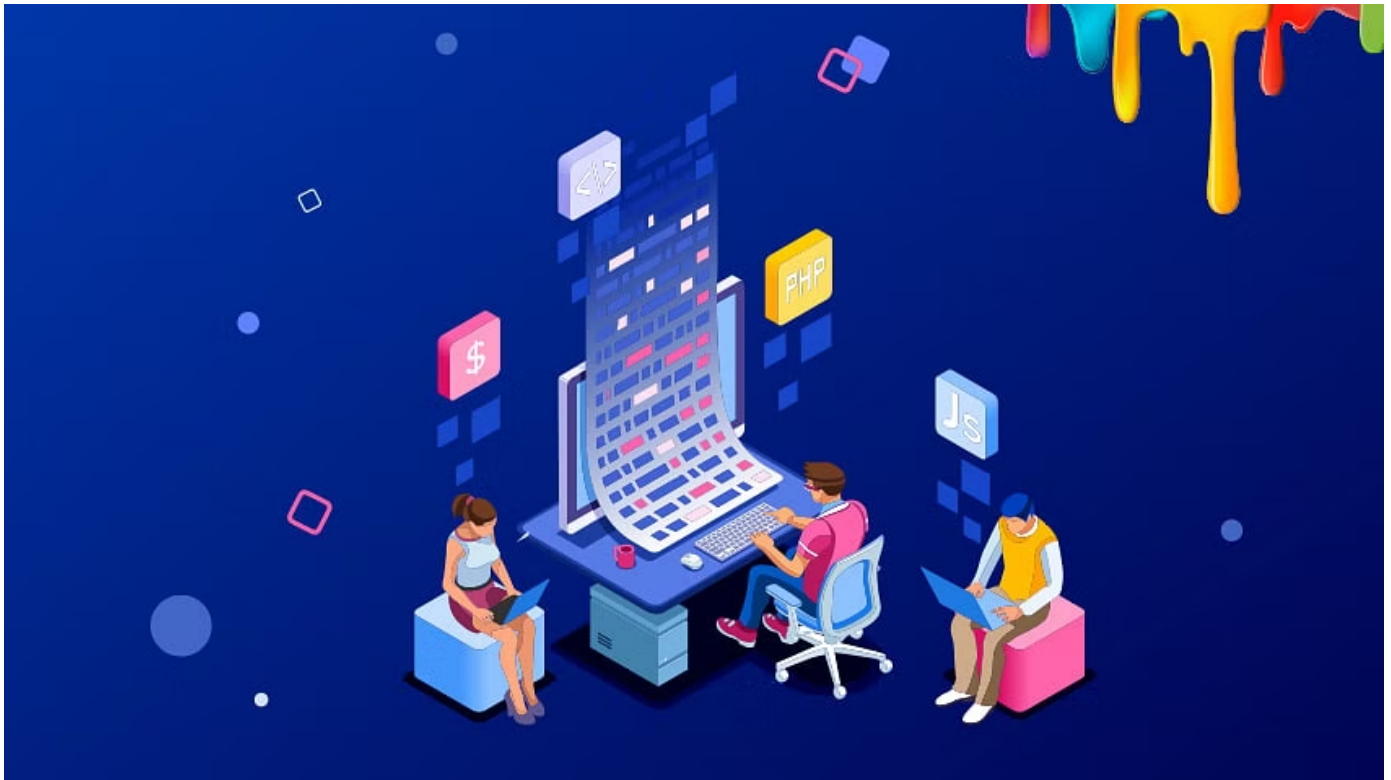


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When you work with an application, who do you normally think is responsible for it? I'm sure you would think about a web developer. Although you're partially right, a [Full Stack developer](#) is the umbrella term for the people who develop full-fledged applications.

What is a Full Stack Developer?

Full-stack technology refers to the entire depth of a computer system application, and full stack web developers are those who are capable of developing both the front end and the [back end of web development](#). All of the features that are visible to the client, or the viewer of the site, are included in the front end.

- Programming a browser (By using [JavaScript](#), jQuery, [Angular](#), or Vue)
- Programming a server (By using [PHP](#), ASP, [Python](#), or Node)

Let's say you're using your Instagram application. Every time you refresh, new content is loaded on your screen. You can like a picture, add new ones, search for profiles and do so much more. Although it provides a seamless user experience, there's a lot that goes on in the backend. HTTP requests are made to the Instagram servers to retrieve and load information. This is facilitated with the help of backend frameworks.

Typically every application consists of the front-end, the backend, and the database.

A Full Stack Developer is associated with the creation of an application from its start to finish. He designs the [front-end and the backend](#) of an application while ensuring its efficiency, reliability, and other crucial features.

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Client Software (Front End) vs. Server Software (Back End)

Client Software (Front End)

Front-end development is programming done on the front end of a website – the part that people view and interact with. Front-end developers are in charge of the complete user interface as well as the application's aesthetic design. Front-end developers are critical in ensuring that users have a good experience every time they browse a site since websites are more effective when they appear professional and work efficiently. Front-end developers typically employ CSS3, JavaScript, and HTML because these languages are essential for website design. Some of the languages used are mentioned below.

Server Software (Back End)

If the front end of a website is the user interface and navigation, the back end is the nuts and bolts. It makes no difference how well a website looks or functions if it lacks content. PHP, Python, and CSS are some of the most popular languages for back-end programming.

PHP is frequently used in conjunction with SQL to build online databases. The front-end HTML files use information obtained from this database. Every time you update your social media profiles or read the news, you are probably engaging with these languages without even realizing it. A database becomes more important as the amount of information saved on a website grows.

Skills of a Full Stack Developer

Now that you know what a full stack developer does, let's look at the skills required to become one.

Front-end Languages and Frameworks

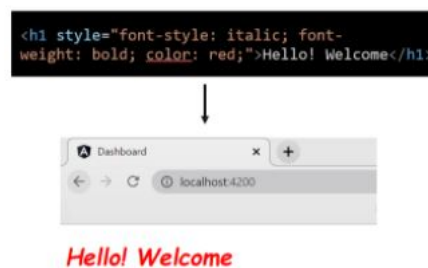
Front-end Languages and Frameworks

HTML and CSS

HTML short of Hypertext markup language governs the appearance of text/images on the screen. It formats the text as headings, paragraphs, pop-ups and so on. It typically consists of tags that give a different meaning to the text in a document structure.



CSS (Cascading Style Sheets) is a style sheet that allows to alter and style different web components for font, size, spacing, etc. It makes the content on the webpage more decorative.



JavaScript

It is a powerful client-side [programming language](#) mainly used for enhancing user interaction with the application. It offers several libraries and frameworks like React, Angular, Vue, and JQuery. A full stack developer needs to be proficient in one or more of these tools.



Backend Technologies and Frameworks

- JavaScript and its environments like [NodeJS](#) and [ExpressJS](#). Node is an open-source, cross-platform runtime environment that allows developers to create server-side tools and JavaScript applications. Knowledge of the basic command line like npm (Node Package Manager) is essential.
- Java, in particular, was built from the ground up to be run on the server-side. Popular Java frameworks include Spring and Java Server faces.
- Python is the most popularly used language. It is flexible and easy to use. We use Python frameworks like [Django](#) and [Flask](#) for backend development. Django is a high-level Python web framework that enables rapid development of websites. It is free and open-source, has a huge and active community of users.
- C# language is for many the most preferred architecture when it comes to [backend programming](#) in Windows environments.
- Other languages include PHP, Perl, and Ruby.

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Database Management Systems

A full-stack developer writes code that is used to perform Relational mapping to fetch data from the database. Some popularly used DBMS are [MySQL](#), [SQL SERVER](#) and [PostgreSQL](#), [MongoDB](#), and Oracle Database. A good understanding of their workings is critical.

Version Control

[Version control systems](#) help manage the project files and keep track of the entire history of the user's things. Popular ones are [Git](#), [Github](#), and Subversion.

Git helps manage the project files. It keeps track of the entire history of things that the user is working on. GitHub is a web-based service for version control using Git. The user can look at other people's code, identify issues or errors, and even propose changes.

Web Hosting Platforms

Web hosting platforms allow you to deploy your product on a cloud service provider so we can access it from the WWW. Popular ones are Amazon web services, Google cloud platform, Heroku, and [Microsoft Azure](#).

Soft Skills

A full-stack developer needs to possess some basic soft skills as well.

1. Creativity - The developer must understand the project's objectives and create a product that engages the target audience.
2. Strategic planning - Planning is a critical phase in any development life-cycle. The developer should possess the aptitude to plan the design, development, and implementation phases strategically. This helps streamline the process.
3. Analytical skills - As the name suggests, these skills help analyze information accurately and make logical, data-driven decisions that help in maximizing efficiency. Now, these are skills that one develops when they're exposed to it. But a good sense of understanding is required.
4. Problem-solving skills are again crucial to predict any errors and develop a bug-free application. From a business perspective, problem-solving skills play a significant role in ensuring the smooth conduction of tasks.
5. Time management skills - The developer must meet the deadlines while ensuring proper execution of his tasks.

Now that you are familiar with the skills, let's look at the key responsibilities.

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Responsibilities of a Full Stack Developer

- Development of front-end - With the help of HTML/CSS and JavaScript frameworks and libraries, the developer must be able to build interactive user interfaces.
- Design the backend of the application - He must be able to build a robust backend architecture to fetch data from the servers.
- Creating database and servers - These systems must be resilient to errors and must function smoothly.

- Creating databases and servers - These systems must be resilient to outages and must function endlessly.
- Ensuring Cross Platform compatibility - Applications must run smoothly on all operating systems like Windows, MacOS, and Linux.
- API development - Depending on the application architecture, the developer is responsible for API creation. These APIs perform crucial tasks like fetching data from the server.
- Meet all technical and consumer requirements - The developer must be able to build responsive applications that meet customer requirements and keep them engaged.

Programming Languages and Tools of Full Stack

- HTML - HTML or Hypertext Markup language is used by developers for making web pages. To build user interfaces that are both efficient and simple to use, a full-stack developer needs a solid grasp of HTML.
- CSS - HTML markup is styled using CSS, a style sheet language. For the purpose of developing aesthetically pleasing and user-friendly websites and applications, a full-stack developer must have a solid understanding of CSS.
- Bootstrap - The most widely used CSS framework for creating adaptive and mobile-first websites is Bootstrap.
- W3.CSS - W3.CSS is a modern framework with built-in responsiveness that is simple to learn and use.
- JavaScript - A programming language called JavaScript is used to make interactive web pages. To construct dynamic and user-friendly websites and applications, a full-stack developer has to have a solid grasp of JavaScript.
- HTML DOM - When you load a web page, the browser produces a Document Object Model of the page. The HTML DOM is an HTML Object Model. can components in the form of objects
 1. All HTML components have properties.
 2. All HTML elements have methods.
 3. All HTML elements have events.
- Python - Python is the most widely used server-side programming language. This versatile language has a plethora of applications in various industries such as machine learning, data analysis, and back-end web development.
- Tools - Below mentioned are the most commonly used tools by full-stack developers to enhance development and its efficiency.
 1. Backbone
 2. Visual Studio Code
 3. WebStorm
 4. Slack
 5. Electron
 6. TypeScript
 7. CodePen
 8. GitHub

Advantages and Disadvantages of Full Stack

Advantages

- You can master all of the approaches required in a development project.
- A prototype can be created quickly.
- You can cut the project's costs.
- Depending on your needs, you can swap between front and back-end development.
- You can have a better understanding of all elements of new and emerging technology.

Disadvantages

- Sometimes the solution selected may not be suitable for the project.
- The solution used may be determined by the developer's abilities.
- The solution may pose a key person risk.
- Being a full-stack developer is becoming more difficult.

Job Outlook

According to BLS data, the position of "web developer" is predicted to rise 13 per cent between 2018 and 2028, substantially faster than the typical occupation. In LinkedIn's 2020 Emerging Jobs Report, "full-stack engineer" ranks fourth among the top emerging jobs for 2020. Since 2015, full-stack engineer roles have grown at a 35% annual rate, and the research states that "the rapid pace of development in technology has made full-stack engineers an advantage to any firm."

Salary of a Full Stack Developer

According to PayScale, the average salary of a full stack developer in the US is around 75k USD.

In India, the average salary of a full stack developer is around 6 Lakhs INR.

How to Become a Full Stack Developer

There are a few things you need to know if you want to [become a Full Stack developer](#). First, you need to have a solid understanding of the different types of technologies that are used to create web applications. These include HTML, CSS, JavaScript, AJAX, and PHP. Second, you need to be able to use these technologies to create a functioning web application. And third, you need to be able to deploy and maintain your web applications.

If you have these three things down, then you're well on your way to becoming a full stack developer. Let's take a closer look at each of these components so you can start building your skills.

Experience Required to Become a Full Stack Developer

It takes a lot of experience to become a Full Stack developer. Some people might argue that you need a college degree in computer science or a related field. However, there are many developers who have become extremely successful without a four-year college education. So, while a degree may give you a leg up, it's not necessary to become a Full Stack developer. In fact, earning your certification in an accredited online program can be a more cost-efficient way to learn the skills necessary to succeed in this field. It can also be completed in a fraction of the time compared to completing a college education.

In order to become a Full Stack developer, you need to have a strong understanding of both back-end and front-end development. This means that you need to be able to not only build websites and applications, but also understand how they work behind the scenes. You need to be comfortable working with different programming languages, databases, and frameworks. And, you need to be able to quickly learn new technologies as they emerge.

Of course, becoming a Full Stack developer doesn't happen overnight. It takes years of experience and continuous learning to gain the skills and knowledge necessary to be successful in this field. But if you're passionate about web development and are willing to put in the hard work, it's definitely achievable.

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Personality Traits of a Full Stack Developer

When it comes to being a Full Stack developer, there are certain personality traits that can help you succeed. Here are some of the most important ones:

1. You're a Problem Solver.

You enjoy finding solutions to problems, both big and small. You're always looking for ways to improve things and make them work better.

2. You're a Good Communicator.

You know how to communicate clearly and effectively, both in writing and in person. You're able to explain complex technical concepts to non-technical people.

3. You're Resourceful.

You're good at finding the resources you need, whether it's information, people, or tools. You're not afraid to ask for help when you need it.

4. You're Organized.

You're able to keep track of multiple projects and deadlines. You have a system for organizing your work so that you can always find what you need when you need it.

5. You're Flexible.

You're willing to change your plans when necessary. You know that sometimes the best solution is the one that wasn't originally planned.

6. You're a Lifelong Learner.

You're always learning new things, whether it's a new programming language or a new way to solve a problem. You're not afraid of change, and you're always looking for ways to improve your skills.

7. You're a Team Player.

You know that there's strength in numbers. You're able to work well with others, and you're always looking for ways to help the team succeed.

8. You're Positive.

You have a positive attitude, even when things are tough. You believe that anything is possible with enough hard work and determination.

These are just some of the personality traits that can help you succeed as a Full Stack developer. If you have these qualities, then you're well on your way to becoming a successful developer.

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Glossary of Full-stack Developer Terms

1. API - API stands for "Application Program Interface." How computers and programmes connect.
2. Application - These applications, often known as apps, are designed to do certain tasks. This includes mobile applications.
3. Bug - An issue or fault in the website or software that prevents it from functioning properly.
4. Framework - A collection of applications used in the building of a website or software.
5. FTP - FTP stands for "File Transfer Protocol." File transfer method from one computer to another.
6. Widgets - Applications that allow particular interactive operations on a website to be done.

Interview Questions and Answers

1. What is Full Stack development?

Full Stack development includes the process of developing the front end and back end of a web application/website simultaneously.

2. What is CORS?

CORS is a mechanism that uses additional HTTP headers to instruct browsers to deliver a web application running at a single origin.

3. Define Inversion of Control (IoC)?

Inversion of Control (IoC) is a general term used by software developers to define a methodology for decoupling system components and levels.

4. In JavaScript, what is a callback?

In JavaScript, a callback is a function that is supplied as an argument into another function and then requested to perform some kind of action or procedure inside the outer function.

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Next Steps

We hope that this article on 'Who is a Full Stack developer' helped you. If you are looking to get advanced practical learning of Full Stack technologies and perhaps make a career out of it, certification will come in handy.

Simplilearn's [Full Stack Java Developer Master's Program](#) gives you an in-depth understanding of full-stack development. This course on full stack Java development is packaged to give you a comprehensive and collective understanding of front-end, middleware, and back-end Java web developer technologies. Through this program, you will learn to build an application from end to end, test and deploy code, store data using MongoDB, and much more.

If you have feedback or questions on the topic, please drop us a comment in the comments section of this article. Our experts will get back to you ASAP!

FAQs

1. Are full stack developers in demand in 2022?

Full stack developers are on top of the list of emerging jobs according to LinkedIn's 2022 Jobs on the rise for the US. They continue to dominate as one of top jobs and will continue to do so for the foreseeable future.

2. What is the difference between a full stack developer and a front end developer?

A front-end developer is responsible for just maintaining the look and feel of the website that is visible to the public. A full-stack developer is knowledgeable and skilled in both the front-end and the back-end.

3. What is the difference between a full stack developer and a back end developer?

A backend developer is responsible for managing the backend of the website - the parts that are not visible to the website visitors. The full stack developer is skilled in both the front-end and the back-end development.

4. Can you become a full stack developer with a high school diploma?

While a postgraduate may not be a requirement for becoming a full-stack developer, it is often something that companies hiring are looking for.

5. How to become a full stack software developer?

In addition to a bachelor's degree in related fields, a full stack developer must have an understanding of technologies such as HTML, CSS, JavaScript, AJAX, and PHP. You must also have knowledge of deploying and maintaining web applications. You can also take online programs such as our [Full Stack Java Developer](#) program

6. How much does a full stack developer earns?

A starting full stack developer earns around US\$75k and INR6 lakhs annually.

7. How to prepare for a full stack developer interview?

It is important to understand the basics of the technology you use. Learn the ins and outs of all the technologies you are familiar with. Provide details of your courses, additional programs that you might have taken, and information on your past jobs and what you've learned from them.

8. What are the skills required for full stack developer?

A full stack developer requires skills such as Front-end Languages and Frameworks (HTML, CSS, JavaScript), Backend Technologies and Frameworks (NodeJS, ExpressJS, Django, Flask, C++), Database Management Systems (MySQL, SQL SERVER and PostgreSQL, MongoDB, and Oracle Database), Version Control, and Web Hosting Platforms.

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