A Complete Roadmap for Becoming a Back-end Developer

No comments

Over the past few years, web development has become an increasingly popular field. As websites gain popularity, businesses have realized that a strong online presence will help them capture more leads. Because of this, they seek talented people who can design and develop web applications using the latest technologies. Suppose you are aspiring to become a web developer. In that case, you need to know three categories of web developers: front-end developers, back-end developers, and full-stack developers. Please be aware that the steps you need to follow will vary depending on what category of developer you want to become. Below we will explain the exact steps you need to take.

What Is the Role of a Back-end Developer?

It is probably already known to you that in a typical client-server architecture, application data is stored on the server side and serves as output to the client. Web applications work on the server side, known as the back-end. It is where all the inner workings take place, and it is where back-end developers do their work. Back-end developers write the code

BLOG ★ PRESS ★ MARKET ★ TUTORIALS ★ SERVICES ★ PORTOFLIO

that makes web applications work. Their code runs on the web server. They also develop APIs for mobile versions of such web applications. These developers are responsible for writing back-end code for such web applications and developing APIs for mobile versions.

© 2023 - Arashtad.com. All Rights Reserved.

How to Become a Back-end Developer?

When you learn back-end development, you will better understand several programming languages, which will help you in your career. If you have an understanding of logic, it is quite beneficial. Alternatively, you can always enroll in a basic computer language course to understand the groundwork. This will ensure you stay caught up on everything once you begin learning back-end programming. These steps include recommendations, alternate options, and learning new tools and technologies as you go.

1. Knowledge of the Internet, Operating Systems, and Front-ends

As with front-end development, back-end development requires a basic understanding of the internet (such as how it works, what HTTP and HTTPS are, how browsers work, how DNS works, and what domain names and hosting are). The next step is to learn about operating systems, which include memory management, terminal usage, OS working, processor management, threading, I/O management, and basic networking concepts. Next, you will need to familiarize yourself with the basics of the front-end mentioned in our previous article- An Ultimate Roadmap for Becoming a Front-end Developer. This will aid you in understanding how the front-end works and how it will be connected to the back-end.

2. Programming language

To improve their coding skills, back-end developers must learn a programming language. Java is the preferred language to learn, but other languages such as Javascript, C#, Python, Ruby, and PHP can also be used.

3. Version Control System

In addition to assisting front-end and back-end developers to interact and handle changes made over time, version control systems also provide information like what changes were made and who made them. Shortly, a version control system enhances the speed of a project by allowing developers to collaborate, remove errors, and recover the code if something goes wrong. Here are some version control systems you can use for back-end development: Git, GitHub, GitLab and BitBucket.

4. Database

A database is the brain of a web application. It helps a web app to be dynamic. Whenever you search for a product or request a login, the database stores data, accepts queries, retrieves information, and returns the required results to the web application. Generally, back-end developers use relational databases or NoSQL databases. Here are some examples:

Relational Databases: PostgreSQL, MySQL, MS SQL, Oracle, and MariaDB.

NoSQL Databases: MongoDB, RethinkDB, DynamoDB, CouchDB and GraphQL

Furthermore, you need to know about some basic database concepts, including ORMs, ACID, N+1 Problem, Transactions, and Data Normalization.
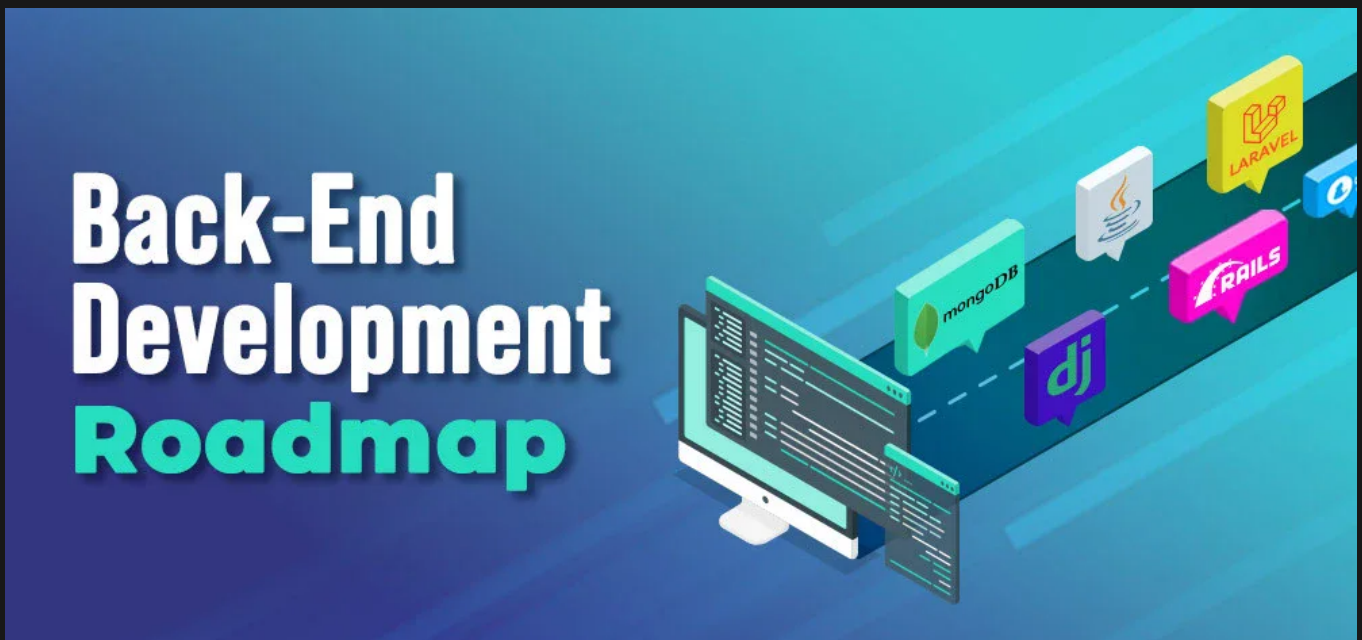
5. APIs

An Application Programming Interface or API is an intermediary between services allowing them to communicate with one another. APIs enable back-end developers to connect different applications or services to the front-end to provide a better user experience. You should learn about some APIs: REST, JSON, SOAP, GSON, XML-RPC, and AES.

6. Caching

As a result of caching, a copy of a resource is kept in a cache (temporary storage location) and delivered instantly whenever required. Caching enhances data retrieval performance while reducing the need to access the underlying

storage layer, which is often slow. CDN, Server Side, Client-Side, and Redis are caching techniques and tools that you should be aware of.

© 2023 - Arashtad.com. All Rights Reserved.

7. Testing

It is the process of checking a web application's database or server side. Back-end testing determines the database layer's efficiency and ensures it is free of corruption, deadlocks, or data loss. Back-end developers use the Integration, Unit, and Functional testing methods.

8. Code Analysis Tools

Code analysis is a method of debugging and analyzing code to ensure smooth operation. Code analysis tools include SonarLint, JUnit, JaCoCo, PMD, SonarQube, Qualys, and Jenkins.

9. Architectural Patterns

In software development, architectural patterns are reusable solutions to recurring problems. The Monolithic, SOA, Microservices, CQRS, Event Sourcing, and Serverless are a few of the most commonly used architectural patterns.

10. Message Broker

An application, service, or system can interact with one another to exchange information through a message broker. You can learn one of the message brokers to use in future projects. A message broker is a module that converts the server's formal messaging protocol into the client's formal messaging protocol (receiver). Use one of the RabbitMQ, Kafka, Kinesis, and JBOSS messaging message brokers in your future projects.

11. Containerization

To isolate services from one another in a container, containerization entails packaging software code with all the necessary components, such as frameworks, libraries, and other dependencies. Containerization is done by the back-end developer to easily move or run a container, regardless of its infrastructure or environment. Docker is one of the most commonly used containers.

12. Design Patterns

There is a variety of design patterns that you should become familiar with because they can solve a variety of problems that can arise during web app development. They provide a standardized approach for such recurring problems. Below is

a list of different design patterns you should get acquainted with.

Singleton

Factory

Observer

Decorator

Adapter

Template Method

Mediator

Composite

Facade

Iterator

Proxy

13. Authentication Method

An authentication method verifies the identity of an individual or device that wants to access resources, data, or applications. The authentication phase provides the security system with an identity. Back-end developers use the MD5, SHA, Scrypt, Bcrypt, and RSA authentication methods.

14. WebHook

An application uses a reverse API or webhook to provide real-time information to other applications. Unlike APIs, webhooks do not require a response after a request. Instead, webhooks just send data when available without a request, including custom callbacks. In this way, webhooks are efficient for both users and providers.

15. WebSocket

An advanced technology called WebSocket API allows the user's browser to communicate with a server using an interactive two-way communication session. You can use this API to send messages to a server and get an event-driven response without polling the server for a reply. WebSocket is a continuous connection between a client and the server. With WebSockets, a client and server can maintain a continuous connection. They provide a bi-directional, full-duplex communication channel over HTTP via a TCP/IP socket connection. They are a thin, lightweight layer over TCP that can be utilized to lodge messages using subprotocols.

Back-end Development Services

Server-side programming is a part of almost all web application projects these days. In the Arashtad web development team, we cover a wide range of technologies that can help you have a powerful and secure product with a high-performance grade. If you are looking for a team to handle the back-end development part of your project you are just where you need to be. Arashtad's back-end development team has worked on too many types of server-side programs and now, all those experiences in development, debugging, and security can be applied to your work with ease.

Product Types

Server Side Programs

SaaS Products

Custom CMS

Plugins and Add-ons for Famous Applications

API Servers Development

AI Development

Technologies

PHP and Laravel

Python and Django

NodeJS and Express

C++

C

OOP

MVC/MVT

There are multiple development teams in Arashtad that can help you see your ideas shaped in reality. Don't hesitate to get in touch with us and ask your questions about our team or your project if needed. We always will be happy to help you with the best suggestions that we can provide and the best work that you can ever imagine.

Conclusion

To become a web developer, you must spend a lot of time, effort, and determination. It would be best if you learned how to code and use specific frameworks, and you can still know plenty more. This roadmap for becoming a back-end developer is created to help you learn these skills quickly. Prioritizing roadmaps ensures that you can make the most progress possible.

Join Arashtad Community

© 2023 - Arashtad.com. All Rights Reserved.

Follow Arashtad on Social Media

We provide variety of content, products, services, tools, tutorials, etc. Each social profile according to its features and purpose can cover only one or few parts of our updates. We can not upload our videos on SoundCloud or provide our eBooks on Youtube. So, for not missing any high quality original content that we provide on various social networks, make sure you follow us on as many social networks as you're active in. You can find out Arashtad's profiles on different social media services.
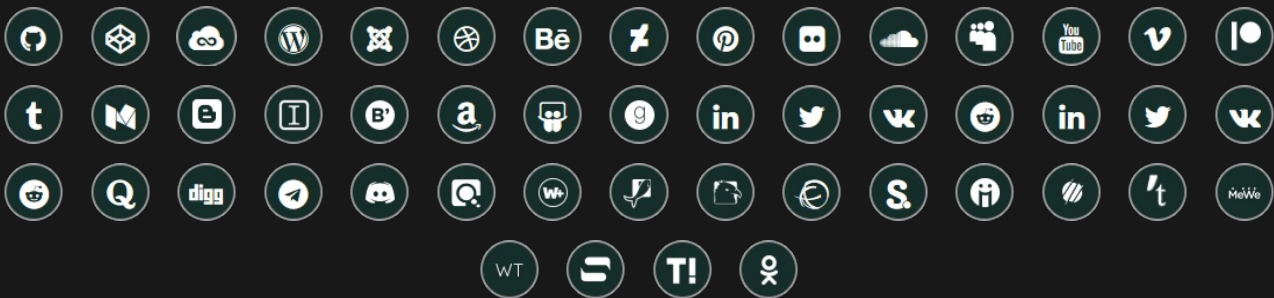
Get Even Closer!

Did you know that only one universal Arashtad account makes you able to log into all Arashtad network at once? Creating an Arashtad account is free. Why not to try it? Also, we have regular updates on our newsletter and feed entries. Use all these benefitial free features to get more involved with the community and enjoy the many products, services, tools, tutorials, etc. that we provide frequently.

SIGN UP   NEWSLETTER   RSS FEED