Roadmap: *Become a full-stack developer*

As a full-stack developer, you can:

- *Make a good living*
- *Join an in-demand profession*
- *Solve interesting challenges*

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Steps to a career as a full-stack dev

1 Make a career plan

Decide how you'll learn
🕐 Timeline: Variable

2 Get an education

CS degree, bootcamp, self-taught, etc.
🕐 Timeline: 12 weeks to 6 years

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Steps to a career as a full-stack dev

3 **Get real-world experience**

E.g., internships, hackathons, open-source projects
⏱**Timeline: A few months**

4 **Earn a certification***

E.g., Software developer & back-end certifications
⏱**Timeline: Could take multiple years**
* **optional**

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Steps to a career as a full-stack dev

⑤ Prepare for a job search

E.g., Build a GitHub portfolio, practice coding problems, study interview questions, network
🕒 **Timeline: A few weeks to a few months**

⑥ Search for dev jobs

Use Indeed, Glassdoor, Dice, etc., & keep track of applications
🕒 **Timeline: 1-2 months**

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Technical skills you'll need:

Front-end essentials

- **Logical reasoning**
- **How the internet works** (e.g., clients, servers, networks, webpages)
- **HTML, CSS, & web development basics**
- **Front-end programming languages & frameworks** (e.g., JavaScript, React, Angular, jQuery)
- **Version control systems** (e.g., Git & GitHub)
- **Web security standards**
- **RESTful APIs & services**
- **Testing & debugging** (e.g., unit testing, functional testing, usability testing, performance testing, regression testing)
- **Graphic design**

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Technical skills you'll need:

Back-end essentials

- **Back-end programming languages** (e.g., JavaScript, Python, PHP, Java, C++)
- **The JavaScript runtime environment Node.js**
- **Back-end web frameworks** (e.g., Django and Flask for Python, Laravel for PHP)
- **Relational databases** (e.g., PostgreSQL, MySQL)
- **NoSQL databases** (e.g., MongoDB, Cassandra, Firebase)
- **APIs** (e.g., REST, JSON APIs, SOAP, gRPC)
- **Data structures & algorithms**

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Technical skills you'll need:

Advanced skills

- **Other JS frameworks** (e.g., NextJS, Gatsby, NuxtJS)
- **Advanced database knowledge**
- **CI/CD practices**
- **Architectural patterns** (e.g., monolithic apps, microservices, SOA, serverless)
- **System Design concepts**
- **Message brokers** (e.g., Kafka, RabbitMQ)
- **Containerization vs virtualization** (e.g., Docker, Kubernetes)
- **GraphQL** (e.g., Apollo, Relay Modern)
- **Graph databases** (e.g., Neo4j)
- **Web sockets**
- **Web servers** (e.g., Apache, NGINX, Caddy, MS IIS)

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Technical skills you'll need:

- **CS diplomas:** Are expected by many employers
- **Non-degree options:** Take less time & cost less, but learning essential concepts & skills requires proactivity; may limit initial job prospects to more junior roles
- **Full-stack bootcamps:** Are available from many universities and companies
- **Certificate programs & self-study:** Are also potential non-degree options
- **Previous industry experience:** Is usually a prerequisite for getting hired
- **Internships:** Let you gain experience, work on real-world applications, & network
- **Professional certifications:** Show your proficiency & dedication

Join the conversation!

Where do you hope to work as a full-stack developer?

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