Software Engineering Boot camp

16-Week Program to transition from Beginner to Software Engineer.

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Everything about our Full Stack Software Engineering course.

What you will Learn

VAltair Labs, our Software Engineering Bootcamp is tailored to make you an expert Software Engineer in just 16 weeks, After the bootcamp you'll learn :

- Set up essential hardware, software, and workspace for learning.
- Grasp software engineering principles and methodologies.
- Master advanced JavaScript techniques.
- Apply backend development best practices.
- Develop applications using React and state management.
- Implement secure authentication and encryption.
- Deploy applications using cloud platforms and CI/CD pipelines.
- Develop a full-stack application using Agile practices.
- Understand core concepts of full-stack development.
- Create and style web pages with HTML, CSS, and JavaScript.
- Build web servers and APIs with Node.js and Express.
- Perform CRUD operations with SQL and NoSQL databases.
- Design user-friendly interfaces with UI/UX principles.
- Use testing frameworks to ensure software quality.
- Manage software projects with Agile methodologies.

Did you know that VAltair Labs have the best Web3 Bootcamp in the industry?

VAltair Labs provides the best Web3 bootcamps in the industry with **97.6% Student satisfaction rate** and **4.8/5 star rating** on both Course Report and Switch up

Why to Choose VAltair Labs

Personalized Instruction - Every week you will spend 30-60 minutes one-on-one with an Expert Instructor, Who will do an expert review of the code you wrote for the assignments. He or she will point out mistakes and suggest improvements. If serious mistakes are found, you must go back and fix them. This is critical in graduating the bootcamp. (If you don't like taking direct feedback on how to improve, VAltair Labs is not for you!).

Small Cohorts - In addition to your weekly personalized meeting, you will meet 1 hour per week with your cohort and the instructor to discuss what you learned, ask hard questions, discuss crypto news, and generally have an awesome discussion with smart and passionate people. Each cohort has a hard cap of 10, and we frequently make it smaller. You will be surrounded by like-minded people who help keep you accountable and stay on track.

Hands-on Emphasis - There is no tutorial hell with VAltair Labs. At least 80% of your learning hours will be spent coding or hacking.

Extremely Rigorous Curriculum - Although 80% is practice, the remaining 20% of theory matters too. We don't see theory and practice as either or. We want you to know the fundamentals and the minute details of how things work.

Overview

Our Software Engineering Bootcamp is meticulously crafted to teach the essentials of full-stack development, focusing on both front-end and back-end technologies.
Students gain proficiency in HTML, CSS, JavaScript, Node.js, and React, equipping them with the skills to build robust and dynamic web applications.

Think like a Developer

Beyond just technical skills, VAltair Labs emphasizes developing a problem-solving mindset essential for software engineering. Students learn to break down complex coding challenges, preparing them to independently learn and adapt to new technologies and frameworks in the ever-evolving tech landscape.

A Lifetime Community in Software Development

After the bootcamp, our students receive lifetime access to our online platform, featuring up-to-date videos and tutorials on the latest tools and best practices in software development. They also join a vibrant community of international talents and educators who continuously support each other, sharing knowledge and opportunities daily.

Our Alumni

Graduating from VAltair Labs's Web3 Solidity Bootcamp opens doors to varied blockchain careers, Our alumni has now successfully become:

- Become Blockchain Developers, Smart contract developers or product managers for some of the world’s best tech companies

- Has successfully created their own personal brand on platforms like Linkedin and successfully connected with other industry experts

- Some of our students with entrepreneurial spirit has successfully started their startups in the blockchain space

Course Format

Full-time Bootcamp (12-16 weeks)

- Courses run from Monday to Friday.
- 12 weeks of learning + 4 weeks agile project

In our Full-time Bootcamp, you'll experience:

- **Daily Immersive Learning:** Dive deep into the world of software development with daily classes that provide an immersive learning experience.
- **Comprehensive Curriculum:** Covering all aspects of software development, our curriculum ensures you master essential skills to excel in the field.
- **Hands-on Projects:** Put your learning into practice by building your own web applications from scratch, reinforcing your skills through hands-on projects.

Meetings

During the bootcamp, you'll also have:

- **Daily Stand-ups:** These meetings provide a platform for daily progress updates, allowing you to share your achievements, challenges, and goals with instructors and peers.
- **1-on-1 Sessions:** Personalized sessions with mentors are available for focused discussions, academic support, or assignment reviews, ensuring you receive tailored guidance throughout your journey.
- **Office Hours:** Group meetings where all students and mentors gather together. These sessions provide a platform for discussing common problems, tracking progress, sharing announcements, and receiving general updates related to the bootcamp.

Personalized Support Sessions

1- On -1 Meetings

1-on-1 meetings offer personalized support tailored to individual needs. Students can schedule sessions with mentors for focused discussions on academic topics, non-academic inquiries, or to review completed assignments and receive feedback.

- **Daily Stand-ups:** Brief meetings to discuss accomplishments, plans, and obstacles.
- **Academic Support:** These meetings are specifically for addressing academic roadblocks, clarifying course material, or seeking guidance on specific topics.
- **Non-Academic Support:** Students can use these meetings to discuss general progress updates, announcements, or non-academic inquiries unrelated to the bootcamp curriculum.
- **Assignment Review:** After completing assignments, students can schedule brief meetings to review their work with mentors and receive feedback.

Office Hours

Office hours are group meetings where all students and mentors gather together. These sessions provide a platform for discussing common problems, tracking progress, sharing announcements, and receiving general updates related to the bootcamp.

Detailed Curriculum

Module 01 – Introduction and Foundations for Software Engineering

- Software engineering principles and methodologies.
- Algorithms and problem-solving techniques.
- Basics of Linux.
- Introduction to IDEs.
- Version control with Git and GitHub.

Module 02 – HTML, CSS and JavaScript

- HTML and CSS fundamentals.
- JavaScript introduction.
- Responsive design principles.
- Static web hosting using Vercel.

Module 03 – Intermediate JavaScript

- Advanced JavaScript concepts.
- ECMAScript and its significance.
- Object-Oriented Programming.
- ES6 syntax.
- Intermediate to advanced JavaScript topics.

Module 04 – Getting Started with Backend Development with Node & Express

- Introduction to web applications.
- Node.js basics.
- Setting up and using Express.js.
- Middleware fundamentals.
- Introduction to NoSQL.
- MVC architecture.
- Deploying backend applications.

Module 05 – Backend Development Best Practices

- Implementing protected routes.
- In-depth exploration of middleware.
- Managing environment variables with Dotenv.
- Testing backend endpoints with Postman.

Module 06 – Database Integration

- Database introduction and design.
- PostgreSQL fundamentals.
- Basic and intermediate SQL queries.
- Using the psql console.
- Database migrations, maintenance, and security.

Module 07 – Front End Development with React

- Front-end development overview.
- Introduction to React and its features.
- Components, props, state, and JSX syntax.
- Server-side vs. client-side rendering.
- Single Page Applications (SPAs).
- React Router, hooks, and Redux.
- Building a To-Do app in React.

Module 08 – UI/UX Design and Styling

- Wireframing, UI kits, and responsive design.
- Front-end frameworks.
- Design inspiration and mockups using Figma.
- Mobile and responsive design basics.
- Adding custom fonts and icons.
- Integrating design elements into projects.

Module 09 – Authentication & Encryption

- Understanding authentication and encryption.

- Differentiating authentication vs. authorization.
- Various authentication methods and frameworks.
- Storing authentication data and secrets management.
- Token-based authentication, JWT, OAuth, and OpenID.
- Securing cookies and local storage.
- Protecting routes and REST API endpoints.

Module 10 – Testing

- Introduction to testing and its types.
- Test design approaches.
- Unit testing with Jest.
- TDD and BDD methodologies.
- API testing, mock introductions, and automated browser testing.
- Integration and end-to-end testing.
- Integrating testing with CI/CD pipelines.

Module 11 – Deploying and Cloud Platforms

- Introduction to DevOps and deployment environments.
- Hosting and deployment key terms.
- Containerization and various deployment options.
- Deploying to PaaS, VPS, and serverless functions.
- Database hosting and managing application secrets.
- Web server software, reverse proxies, domain names, and SSL.
- Example deployments on Vercel, Heroku, and AWS.

Module 12 – Project Management Strategies for Entrepreneurial Success

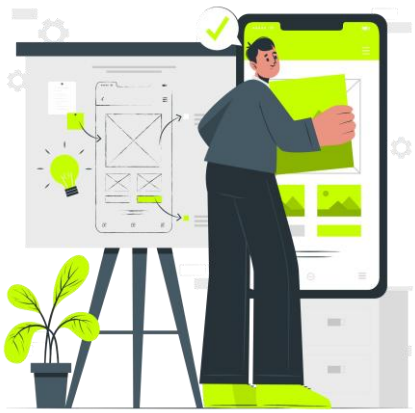
- Project management basics and software development methodologies.
- Development sprints and issue tracking.
- Introduction to entrepreneurship and mindset.
- Defining marketable ideas, MVPs, and creating pitch decks.
- Securing investment and understanding revenue models.
- Marketing strategies and making sales.
- Building and managing real-world projects.

4 Week Agile Project

Each student's 4-week Agile project will be customized to their goals. Here's a general idea of how the process works:

Choosing the Project

Work with a VAltair Labs advisor to select the best project idea from three options.

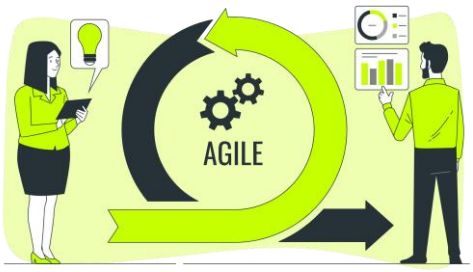


Creating a Pitch

Develop a project pitch deck.

Presenting the Pitch

Present your project pitch to a group of VAltair Labs admins for critical review.



Planning the Sprint

Plan out the 4-week development sprint with the help of an instructor.

Break the project into four one-week phases.

Divide each phase into several sub-tasks.

Creating the Project Board

Create a GitHub repository.

Set up a GitHub project board for project management.

Create issues for each sub-task and tag them by week (e.g., week-1, week-2).

Add the instructor to the GitHub project.

Begin the Sprint

Push each week's tasks into the GitHub Project.

Start development, moving tasks along the board as they progress.

Review progress weekly with your instructor.

Personal Portfolio (Module 04 - Module 11)

Module 4: Building the Backend Structure

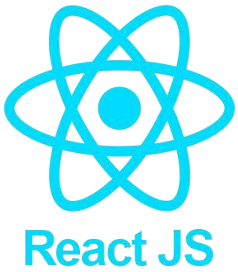
Setup Node and Express server, create CRUD operations with MongoDB, test routes with Postman, and deploy on Render.

Module 5: Extending the Backend

Implement user login/registration, create public endpoints, and test using Postman.

Module 6: Database Transition

Replace MongoDB with PostgreSQL, design schema, perform migrations, seed the database, and test with Postman and PSQL console.



Module 7: Front End Conversion to React

Convert frontend from HTML, CSS, and JavaScript to React, connect with backend, and test the full stack app.

Module 8: Custom Portfolio Design

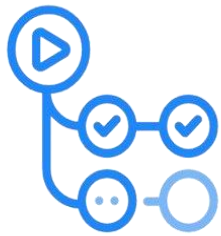
Design custom portfolio prototypes and build the frontend using React, replacing the previous version.

Module 9: Route Protection and Validation

Implement middleware for route protection, add frontend form validations, and include logout functionality.

Module 10: Comprehensive Testing

Conduct unit, integration, and browser automation tests, test the database, and implement GitHub Actions for automated testing.



GitHub Actions

Module 11: Deployment

Deploy the full stack application with a domain name on AWS.

Admission Policy and Process

You have to prove your seriousness in learning and then only you are admitted to our bootcamp. This makes our admission policy as unique as our Bootcamp.

Admission Policy

- You must be proficient in English.
- Past achievements. We want to see that you have the perseverance to work at something until you master it. We'll talk about these in the interview call.
- It will be beneficial to have some prior knowledge. Although prior knowledge is not required, our curriculum is fairly fast-paced, so having a head start will help you succeed and show us that you are committed to the subject.

Admission Process

- Submit your application through our Website.
- Make necessary payment of selected course.
- Confirmation mail receive in your mail box.
- Join the classes online mode as per the schedule.

Privacy Policy

Types of Information Collected

The policy differentiates between Personal Information (identifiable details like name, email, financial data, etc.) and Non-Personal Information (data that doesn't identify the user).

Collection Methods

Information is collected through direct user submission, registration, program applications, and other service-related activities. Automatic data collection via technology is also employed.

Information from Third Parties
Data may be received from third-party services (e.g., Facebook, Google), education partners, and other external sources.

Use of Information
Collected data supports service provision, including program delivery, communication, and marketing. Information may be shared with staff, partners, service providers, and for legal or safety reasons.

Sharing Personal Information
Information is not sold but may be shared with third parties for advertising, service provision, or legal reasons.

Data Retention
Information is kept as long as necessary for service provision or as mandated by law, with specific retention periods varying based on the information type and use.

Privacy Policy Updates
Changes to the policy will be posted on the service platform, with significant changes communicated to users, offering them choices regarding their data.

FAQs

All you need to know before applying to our Solidity Bootcamp

What are the tuition fees?

Detailed Fee structure of various courses is available on website. You can pay your tuition via card, bank transfers, or by using UPI.

Why does VAltair Labs teach Full Stack JavaScript?

The future of web development has moved toward sophisticated, responsive, and dynamic single-page applications running in the browser. Apps like Gmail, Asana, Trello, Facebook, and Google Maps have redefined what users expect from web applications and what developers need to deliver. Another plus point is that once you master JS, you'll be eligible to join VAltair Labs's advanced solidity bootcamp.

After observing these trends, plus conducting lots of research and conversations with industry experts, we've come to the conclusion that full-stack JavaScript is the future of web development. Consequently, it is what we primarily immerse our students in VAltair Labs.

What about Ruby on Rails, Python, or other engineering languages? Why are other schools teaching these—or a combination of these—instead?

Ruby on Rails has been instrumental in consolidating many best practices in back-end web development—making it easier for developers to build large sites organized. Meanwhile, Python has completely revolutionized the way sites record and use data—and we do teach Python foundational skills in our Data Analytics bootcamps.

However, research and use cases show that today's web runs on highly interactive and responsive experiences that don't require a page refresh at every step. As a result, single-page applications (SPAs) written in JavaScript using frameworks like React or Vue.js make JavaScript one of the best programming languages to learn.

JavaScript also offers professional advantages over other languages. VAltair Labs graduates are well-rounded coders with both a thorough understanding of the full stack and programming concepts in general. We've learned through years of tech education that students may more easily understand and master other coding languages once they've learned full-stack JavaScript. This gives our graduates a more in-demand skill set that separates them from the competition and widens the range of coding job types they're qualified for.

What is the remote study experience like in the Software Engineering Bootcamp?

All our coding bootcamps are thorough, comprehensive, immersive, and rigorous. We're backed by multi-year experience in online tech training to deliver consistent, in-demand coding curricula and digital learning tools in a remote environment.

Specifically, the Software Engineering Bootcamp is designed to support you in leveling up your coding skills, building a robust portfolio, and launching a career in tech.

What is the format of the software engineering bootcamp? Is the bootcamp online or in-person?

VAltair Labs's Full stack software engineering bootcamp is a 4-month (6 Months Part time) program delivered in online sessions. Participants will have access to online course materials and lectures.

Who should join this bootcamp?

Both **intermediate and beginner coders** are welcome. No matter where you are in your coding journey, you can hone the skills, knowledge, and practical experience of a professional web developer with VAltair Labs.

What is the time commitment for the bootcamp?

For the full-time program, with participants expected to devote approximately 40 hours per week to coursework and projects.

If done part time, 20-30 hours per week is sufficient.

Will I receive a certificate upon completion of the bootcamp?

Yes, participants who successfully complete the bootcamp will receive a certificate of completion.

Are there any prerequisites for the bootcamp?

You must be proficient in English.

How is artificial intelligence (Al) impacting the software engineering profession?

The recent leap in artificial intelligence (Al) tools will enhance the productivity of the software engineer like nothing before it. Perhaps the greatest recipients of this technology will be our graduates, and those just starting out or entering the software engineering field.

That is why we're proud to teach the Al-powered tool GitHub Copilot in our instructor-taught curriculum in all our coding bootcamps. VAltair Labs we believe that new coders and new software engineers should learn foundational skills before being introduced to these types of productivity-enhancing tools.

Do you teach anything related to Al in your coding bootcamps?

A BIG YES. We teach students how to use the Al-powered tool GitHub Copilot in all our coding bootcamps. We teach students how to integrate Copilot into their software development workflow during the later modules of all of our coding bootcamps, after proficiency in programming has been obtained. Students will use this tool to build a portfolio project (a non-trivial application) to demonstrate their ability to evaluate and blend Al-generated code with their own.

Our instructional teams, which are composed of industry veterans, have managed the responsible use of productivity-enhancement tools throughout their careers and are well-equipped to teach this newest tool.

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