



# Bootcamp Course

Description and Specifications

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## Course Description

### Software Development Bootcamp

Join us in this software development bootcamp. It is an innovative short-term, accelerated learning, and immersive coding education. It is designed for aspiring tech professionals and high school students considering tech majors. The bootcamp provides the coding skills students need to start careers in software engineering or get a head start and a clear understanding of what a software development major will be like in college.

Students will learn web development (HTML, CSS, Javascript) and Python programming. And they will combine these skills to build database-based fullstack web applications with user authentication and other features we find in most of the apps we

## General Details

**Title:** Build and Publish Web Applications

**Subtitle:** Intro to Python and Web Development

**Time:** 2 Weeks (40 hours total)

- Mon- Fri
- 4 Hours / day [Ex: 10:00am-12:00pm and 12:30pm-2:30pm]

**Capacity:** 10 students

**Age Group:** 14+ years old (High School age students)

**Location:** Online

### Prerequisites:

- Basic coding experience required
- (students who already have interests in coding or computer science)
- (we can maybe use a simple google form to ask basic coding questions)
- (Record a video ??)

### Format (for each day):

- 1.5 hours learning/lecture
- 1.5 hours hands-on project work
- Approx. 1 hour of outside class required Homework Assignments
- Homework help via discord

## Main Objectives

Within 2 weeks (30 hours of instructions total), learn and build projects using:

- HTML / CSS
- Javascript & Bootstrap
- Python using the Flask Framework

## Tool & Coding Environments

- [Replit.com](https://replit.com) (online code editor)
- [Heroku.com](https://heroku.com) (free online web application hosting)
- Buy a domain name (optional)

## Week 1: Web Development

*5 days and 4 hours/day (2 hours learning & 2 hours project work)*

### [Focused on web development]

Intro to HTML, CSS, and basic Javascript.

Intro to Bootstrap framework to make the website look beautiful.

### [Outcome]

Know how to build a static website (responsive and good looking)

Have 2 projects done:

- One finished and polished website project (published): school website, dance team website, coding club website, soccer fun website
- Front end part of the major fullstack application (the one they will add python to later)

### [Overall concepts]

- Students build their own profile page using HTML and CSS
- This should be entered on a website somewhere so they can click and view other student's profiles
- Fancy CSS
  - Cool CSS tricks
  - Students use them to make their profile look even cooler
- Basic JavaScript
- Students are given JavaScript snippets to make their profile page interactive
- **Examples:** Show/hide, change color, question & answer, etc.

## Week 2: Python Programming

*5 days and 4 hours/day (2 hours learning & 2 hours project work)*

- **Day 1:** Intro to Flask & Python I
- **Day 2:** Flask Framework + Intro to project
- **Day 3:** Database setup + Project
- **Day 4:** Finalizing the project + working on the presentations
- **Final Day:** Presentations (recorded) & Certificates

### [Focused on web development]

Intro to Python programming.

Intro to Flask framework to combine Python with web development.

## **[Outcome]**

- Know how to code in Python
- Be able apply Python and build a Python-based fullstack web application and publish it on & answer, etc.

## **Have 2 projects done:**

- One finished and polished fullstack application, such as chat app, meme generator,
- Back-end part of the major fullstack application (and also add database to it), such a social media app.

## **[Overall concepts]**

- Fundamentals of Python Programming
- Introduction to Flask (combining Python and web development)
- Introduction to database
- User registration and login
- Publishing a full stack web application