The digital revolution has transformed virtually every area of human activity — and you can be part of it by acquiring valuable web development skills. The **Penn Summer High School Coding Camp** is an immersive three-week, part-time program where you’ll build websites and games while gaining foundational programming, critical thinking, and problem-solving skills.

Our program is designed to formally introduce you to the knowledge, skills, and abilities needed to explore the field of computer programming. Made to fit into your summer schedule, the High School Coding Camp combines structured lessons, paired practice, and flexible group work throughout the week. Class sessions are led by veteran industry practitioners and mentors who can answer questions and provide insight based on real-world developer experience.

This program is designed for beginners, covering a range of foundational website topics. You’ll develop proficiency through hands-on projects, creating sample portfolio pieces that can be shared with family and friends or used for college applications.
Skills We’ll Cover
You will complete this program with a range of front end web development skills,* including:

Browser Based Technologies
• HTML
• CSS
• JavaScript
• jQuery

*The material covered in this program is subject to change due to market demand.
Building On The Basics

In web development, as in sports, you can’t succeed without a solid grounding in the fundamentals. That’s why our curriculum includes both theory and practice in website coding foundations. We recognize that the surest way to absorb new material is to apply your skills to real-world projects. You’ll have ample opportunity for hands-on involvement through individual exercises, pair programming activities, and group projects — all of which will make up your final portfolio.
What You Will Learn

You will complete this program with front end web development skills, including the ability to:

- Create and style working interactive web-based games and simple applications
- Build a sample website using a front end framework called Bootstrap
- Work independently or in a group on complex projects throughout the entire development life cycle

In this program, you will learn how to:

- Define basic website architecture and terminology
- Apply foundational programming concepts with JavaScript
- Build HTML pages
- Enhance web-page interactions with jQuery
- Style pages with CSS
- Create and customize sample interactive games
Program Structure

Over the course of three weeks, you’ll attend engaging live classes and take part in a variety of activities, working independently and in groups. Our veteran instructors will guide you through sample exercises and explanations, providing you with ample opportunities to build and apply what you’ve learned. Our goal is to give you a comprehensive learning experience that will teach you about the range of skills, applications, and career opportunities made possible with code.

**DISCUSSION**
Instructor-led discussions will walk you through the background, use, and real-world application of each new concept or skill.

**LAB WORK**
You’ll put your lessons into practice by working individually, in pairs, and in groups to complete in-class activities and projects.

**PORTFOLIO PROJECTS**
Along the way, you’ll build up a portfolio of work to demonstrate your new abilities, including sample websites, games, and web applications.
We’re Here To Help

Throughout the program, you’re likely to have questions about some of the topics covered in class. Fortunately, we’re here to help — through instructor-led Q&A sessions, online resources, and dedicated help channels and forums where you can get support and assistance from trained staff members and fellow classmates.
Building Your Portfolio

Our curriculum teaches you how to apply what you've learned to actual portfolio projects, ranging from HTML and CSS code to simple JavaScript applications. Here are a few examples:

**Website Portfolio Page**
Your portfolio page will help you showcase your work with links and descriptions to samples of projects you've created. Think of your portfolio page as your new home on the web.

**Skills Needed**
- HTML5
- CSS
- JavaScript
- Bootstrap

**Objectives**
- Create a home on the web to showcase your skills
- Build a site using modern web tools
- Learn to apply standard design conventions

**Trivia Game**
Trivia games may seem like simple questions and answers. Yet once we add in timers, scores, and messages based on correct or incorrect answers, building a trivia game in the browser can get a little more complicated.

**Skills Needed**
- HTML5
- CSS
- JavaScript
- jQuery
- Bootstrap

**Objectives**
- Build a functional web-based trivia game
- Use timers in the browser
- Track correct and incorrect statistics for each game

**Group Project**
Our final project will force you to think outside of your comfort zone and bring together all of the technologies you've learned so far — and even explore new ones. You and your group will select from a range of options to challenge yourself and build something impressive.

**Skills Needed**
- You will work with a small team to apply the skills you have learned to create a final project.

**Objectives**
- Work together in a group to define a scope and build a final project
- Combine all of your skills into a creative website or interactive application
- Prepare to present and share your work
# Program Topics By Week

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Description</th>
<th>What You'll Learn</th>
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| **Week 1:** | When most people think of the “internet,” their mind immediately conjures up their web browser. We'll dive into detail about how a browser works, what source code does, and how you can build your own. | • Define basic website architecture  
• Apply stylesheets for different devices  
• Create web pages from scratch                                                                 |
| HTML and CSS|                                                                                                                                                                                                 |                                                                                                         |
| **Week 2:** | Here's a secret about programming: most languages follow similar rules. We'll teach you some foundational programming concepts using JavaScript, one of the world's most popular website languages, while building engaging modern web apps. | • Explain programming principles in JavaScript  
• Program interactions for sample online games  
• Use timers and rules to track information in a web app                                                   |
| JavaScript & jQuery |                                                                                                                                                                                                 |                                                                                                         |
| **Week 3:** | Throughout the program, you’ve learned foundational website skills through hands-on activities. Now it’s time to take all of the technologies you’ve learned and make something distinctly your own. | • Work in groups to build, style, and present a sample site, game, or web application of your choice     |
| Group Project|                                                                                                                                                                                                 |                                                                                                         |

## PROJECT WEEK EXAMPLE

### Sample Schedule

<table>
<thead>
<tr>
<th>Day 1</th>
<th>Work in your groups to research and select a suitable topic</th>
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</thead>
<tbody>
<tr>
<td><strong>Day 2</strong></td>
<td>Build and iterate in groups with instructor support</td>
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<tr>
<td><strong>Day 3</strong></td>
<td>Share out and get feedback on your progress so far</td>
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<tr>
<td><strong>Day 4</strong></td>
<td>Build and iterate in groups with instructor support</td>
</tr>
<tr>
<td><strong>Day 5</strong></td>
<td>Present your work and celebrate your success</td>
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