Computer Science Summer Certificate Program Live Online

In this live online summer certificate, high school students will master the fundamentals of programming in both Java and Python. Students will get a head start on the AP Computer Science Exam as well as learn the fundamentals of data science and machine learning.

> Group classes in Live Online and onsite training is available for this course. For more information, email hello@nextgenbootcamp.com or visit: https://www.nextgenbootcamp.com/certificates/computer-science-summer-cert

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Course Outline

This package includes these courses

- Java Programming Summer Program Live Online (50 Hours)
- Python for Data Science & AI Live Online (45 Hours)

Java Programming Summer Program Live Online

This course teaches high school students the core principles of Java programming, preparing them for AP Computer Science or introductory college-level courses. With a project-based approach, students will learn how to write code and develop problem-solving skills through hands-on practice.

- Write and use industry-standard algorithms using Java syntax and best practices
- Understand variables, data types, operators, and control flow for logic-based programming
- Build and manipulate arrays, strings, and dictionaries in structured programs
- Work with file input/output and manage data streams and formatting
- Apply object-oriented programming principles including inheritance, polymorphism, and encapsulation
- Solve problems using recursive functions and learn how to break down complex tasks into manageable steps

Python for Data Science & AI Live Online

This course introduces high school students to the core principles of Python programming for data science and artificial intelligence. Through hands-on lessons and real-world projects, students will gain practical experience in data analysis, machine learning, and visualization techniques.

- Write Python scripts using key concepts like variables, functions, loops, and conditionals
- Use lists, dictionaries, and sets to organize and manipulate data efficiently
- Read and write text and CSV files, and clean and prepare data for analysis using Pandas

- Visualize data through custom charts with Matplotlib, including scatter plots and histograms
- Explore core machine learning techniques such as linear regression and K-nearest neighbors
- Complete a final project using real datasets to present insights with analysis and visuals