



# The Evidence-Based Learning Platform for Computer Science

Bring your vision of CS  
education to life.

Codio is the pedagogically agnostic cloud-based learning platform that enables faculty to teach more effectively, thereby yielding better student learning outcomes.

With robust auto-grading capabilities, an editable assessments library, customizable curricular resources, and actionable student learning insights, the Codio toolkit enables teachers to optimize their students' engagement, satisfaction, and performance.

### WITH CODIO, YOU CAN:

- Scale your environment to meet enrollment demands.
- Replace burdensome hardware with our flexible, cloud-based, browser-accessible platform.
- Design fully customizable learning experiences with sudo-level access, a fully-featured built-in IDE, preconfigured software stacks, and more.
- Combat plagiarism with our intelligent plagiarism detection tool.
- Boost student engagement and performance with features like instant student feedback and fully customizable, interactive curricular resources.
- Quickly identify students who need help or more of a challenge with advanced learning insights.
- Start delivering courses within just days of getting started.

Codio is used by leading higher education institutions to deliver courses like Intro to Programming, Advanced Programming, Data Structures and Algorithms, Software Development, Big Data, AI, and Web Development.

### EASY-TO-USE WITH SEAMLESS INTEGRATION

Codio integrates seamlessly with your existing LMS.

Augment existing course materials with expertly curated curriculum resources and our library of auto-graded assessments.

Incorporate previously produced grading scripts with our auto-grading feature.



**Grade  
75% faster.**



**Automate  
90% of grading  
in Codio.**



**“Codio's partnership approach has enabled us to be far more successful than we otherwise would have been with our online course delivery and management.”**

— JOHN HALL, ECORNELL

# Powerful infrastructure means enormous time savings for teachers

Flexible and completely configurable for your teaching context, Codio's infrastructure is unlike any other platform. Install, configure, and teach any language, version, database, and software component, with unlimited cloud-based computers for faculty, teaching assistants, and students. Codio provides fully configured Ubuntu servers with the following features:

- A browser-based IDE
- Command-line access via a terminal window
- Unix sudo-level access privileges
- A code editor with syntax highlighting
- An auto-generated domain name
- A wide range of ports

Codio's infrastructure is massively scalable, providing a consistently high-quality experience, regardless of a student's setup. No matter your class size or requirements, Codio's infrastructure scales to support your needs.



**Reduce time spent on admin tasks by more than 25%**



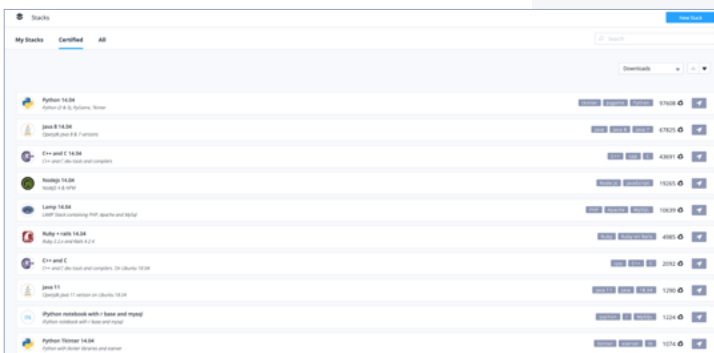
**“Codio is extremely useful for teaching university programming courses. Having a capable and uniform environment cuts down on setup and configuration tasks, so I can spend more time teaching.”**

- GREG DELOZIER,  
KENT STATE UNIVERSITY

## SYS ADMIN FREE!

With Codio, you're able to configure the environment you need and instantly push to your students. You can even create templates of standard environments to pull “off-the-shelf” when you need them. No more waiting days or weeks for a sys admin to prepare an environment to match your needs!

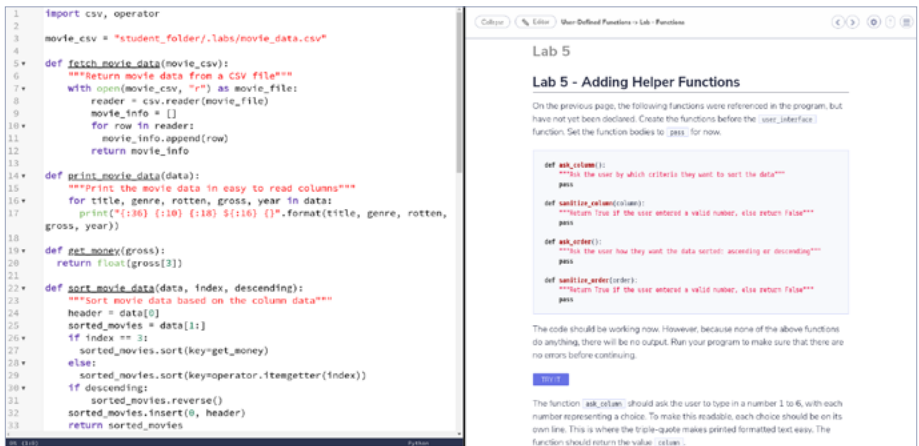
Plus, waste no time on setup or configuration with pre-configured stacks, including Python, Java, C, C++, Ocaml, Ruby on Rails, R, R-Studio, NodeJS, Jupyter, Bash, SQL, and more.



# Customizable curricular resources enable exceptional course curation and maintenance

Codio comes with a library of editable teaching resources—entirely customizable for your teaching context and curated so that every page layout compliments the text, with exercises converted into interactive, auto-graded assessments. Use them immediately as-is or adapt them as you like.

Authoring content is easy—easily port existing course resources or create your own or blend ours with yours.



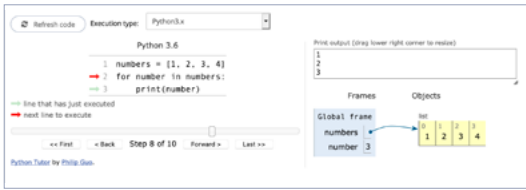
The image shows a split-screen view of a code editor. The left pane displays Python code for processing a CSV file. The code includes functions for fetching data from a CSV file, printing it in a readable format, getting the gross value, and sorting the data by a specific index in descending order. The right pane shows a web interface for a lab exercise titled "Lab 5 - Adding Helper Functions". The text explains that several functions mentioned in the code on the left have not yet been implemented and need to be added before the program can run. The functions to be added are: `ask_column()` to ask the user which column to sort by, `valid_column(column)` to validate the user's input, `ask_order()` to ask the user how they want the data sorted, and `valid_order(order)` to validate the user's sorting choice. A "Next" button is visible at the bottom of the lab page.

Our library of curriculum content emphasizes students applying and exploring the information presented. Our code editor accompanies each page, with new concepts so students can see for themselves how the computer responds to the code they're writing. Additionally, the content provides code snippets so students can get started quicker, as well as suggesting avenues for investigation.

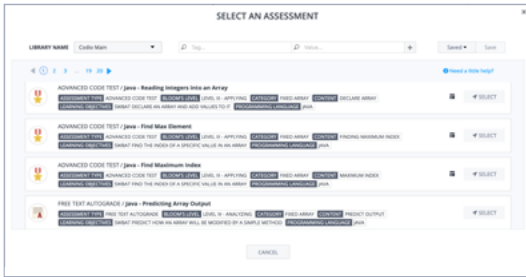
**15%**  
Improve student  
grade performance  
by over 15%

**10%**  
Boost student  
satisfaction by  
10% or more

## REDUCE STUDENT ATTRITION AND BOOST GRADE PERFORMANCE WITH FEATURES LIKE:



Code visualizers, integrated into the content so students can see for themselves how the computer navigates complex flow and structures like conditionals, loops, and list iterations.



An auto-graded assessments library, containing hundreds of customizable, auto-graded assessment questions covering a wide range of topics, difficulty levels, and assessment types.



Instant student feedback gives students an immediate, rich explanation of their work. Students will get a sense of their understanding of the material immediately after they are introduced to it and as they attempt more difficult problems.

## LESS TEXT, MORE ENGAGEMENT

Students want and need educational content that engages them. Codio enables students to take the abstract concepts of computer science and render them more tangibly.

Codio's curricular resources present the material in smaller units that are more manageable for students. The same vocabulary and concepts are covered, but in a more approachable way — state things as plainly as possible, and, when appropriate, use images, tables, or lists.



**“The use of Codio has coincided with a steady increase in student performance and satisfaction as well as far greater data on student engagement and performance.”**

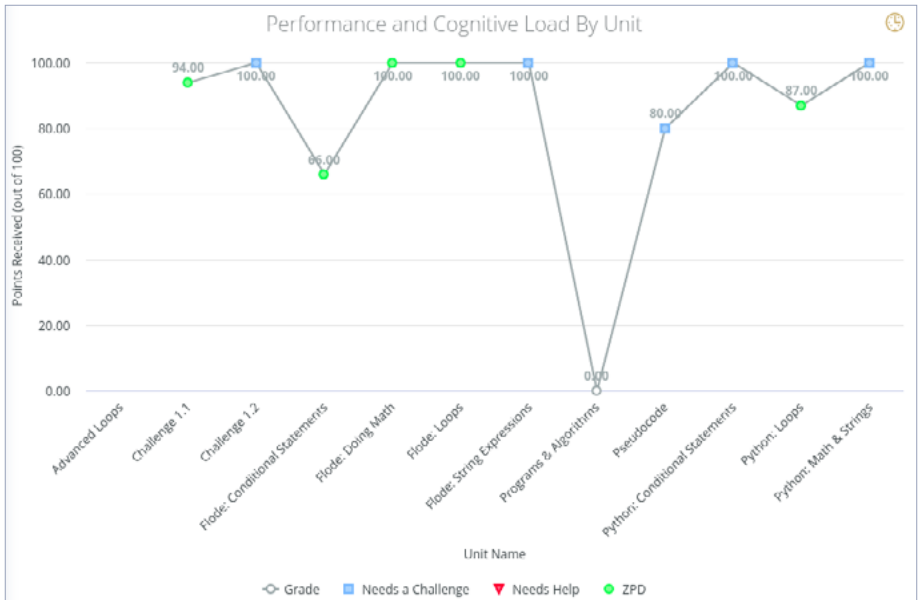
– CROFT, D., AND ENGLAND, M. (2019). COMPUTING WITH CODIO AT COVENTRY UNIVERSITY. PROCEEDINGS OF THE 3RD CONFERENCE ON COMPUTING EDUCATION PRACTICE – CEP '19.

# Student Learning Insights help you teach more effectively and efficiently

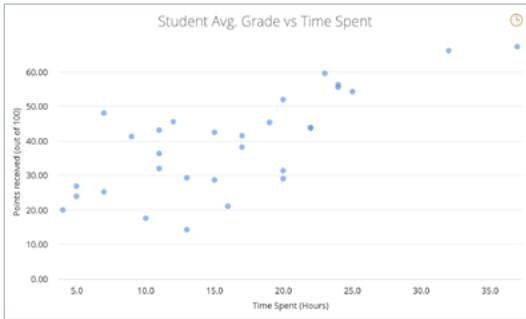
Codio excels at optimizing how you teach. Our Learning Insights provides compelling and actionable visualizations of performance at the student, unit, module, and class levels, enabling you to identify students who need more help or need to be challenged.



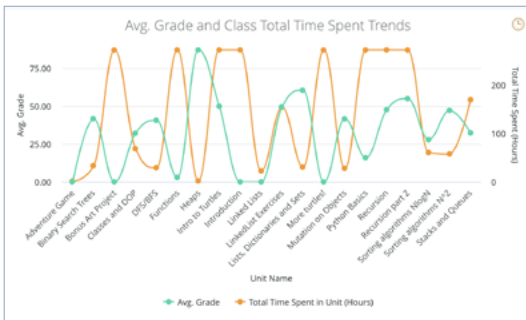
From overall class performance to individual student cognitive load estimates, Codio's Learning Insights brings together all the relevant pieces of information on one screen—accessible with the press of a button.



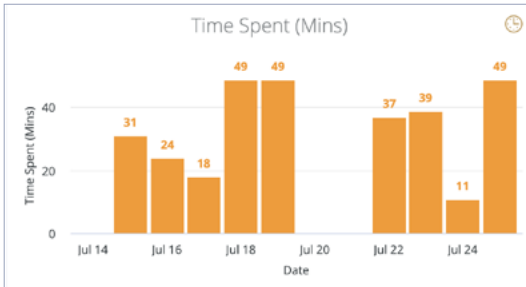
**LEARNING INSIGHTS FEATURES INCLUDE:**



Scatter plot visualizations of the average student grade vs. time spent in class to identify those within the zone of proximal development (ZPD)—an estimate of student cognitive load—as well as those who need more help or need more of a challenge.



A trend line chart of the average class grade, with total time spent by a class per unit to highlight the units which demanded more of a cumulative effort by the class.



Grouped bar chart visualizations to compare the number of students that started a given unit, the number of students that completed that unit, the average student grade in the unit, and the average time spent by students on it.



**“The flexibility, the power, the control, and the scale. It’s so easy to scale. That’s my favorite part.”**

— GWEN BRITTON, SOUTHERN NEW HAMPSHIRE UNIVERSITY

