Traditional programming education has a long feedback cycle with students making assignments in the lab and teaching assistants manually grading (sometimes still on paper) submitted assignments. In addition, the approach requires installation of programming environments on lab machines and/or a wide variety of student’s own computers. Finally, exams are typically conducted on paper, making it hard to test programming skills and insight, and again making for a large grading effort.

WebLab is a web-based learning management system with a focus on programming education. The application is provided as a web service that can be used by instructors and students at any computer with an internet connection. WebLab completely avoids the problem of installing programming environments. By adding support for a programming language to WebLab once, it can be used in all courses by all students.

WebLab assignments can be used during scheduled lab sessions, so that teaching assistants can focus on explaining rather than checking solutions. WebLab can also be used to administer computer-based programming exams. Students sign in to the exam using a personal key handed out on paper to verify physical presence in the exam room. Using unit-testing based grading, exam grades can be published on the day of the exam.

http://weblab.tudelft.nl