Martin MARES,
Department of Applied Mathematics,
Faculty of Mathematics and Physics,
Charles University Malostranske nam. 25, 118 00 Praha 1,
Czech Republic, e-mail: mares@kam.mff.cuni.cz

Programming contests often employ automatic grading of submitted solutions, but frequently in an ad-hoc way. This article describes our attempt at creating a modular and flexible grading system called Moe, which is not tied to the specifics of a single contest.

Bruce MERRY,
ARM Ltd 110 Fulbourn Road,
Cambridge, CB1 9NJ, United Kingdom
e-mail: kolstad@usaco.org

The goal of a programming contest grading system is to take unknown code and execute it on test data. Since the code is frequently buggy and potentially malicious, it is necessary to run the code in a restricted environment to prevent it from damaging the grading system, bypassing resource constraints, or stealing information in order to obtain a better score.

We present some background on methods to construct such a restricted environment. We then describe how the South African Computer Olympiad has used a Linux Security Module to implement a restricted environment, as well as the limitations of our solution.

Rob KOLSTAD,
USA Computing Olympiad 15235 Roller Coaster Road,
Colorado Springs, CO 80921, USA,
e-mail: kolstad@usaco.org

The USA Computing Olympiad annually conducts six internet-based computer programming competitions, each including three to four algorithmic tasks in each of three divisions. Coupled with the training camp competitions, a typical annual USACO `problem budget' approaches 75 new tasks at three distinct levels of difficulty.

In order to exploit a distributed coaching staff, USACO developers created and evolved the web-based `probgate' problem-development system to speed production of acceptable quality programming contest tasks that are machine-gradable, well-accepted, and yield no or few complaints, regrades, or requests for clarification.

This paper describes each of the major modules and shows how they are used to simplify, speed up, and automate administration of contests regularly accessed by more than 1,000 students.

Yesterday was the second day of the scientific conference on „Task Development and Grading" held in parallel to the Olympiad. The professionals exchanged experience on the mastering of Informatics as a new subject in the general schools, as well as on the new methods in the training of gifted children to take part as competitors in big events.

Hong WANG,
Tsinghua University 100084,
Beijing, China,
e-mail: wanghong@tsinghua.edu.cn

Baolin YIN, Beijing University
of Aeronautics and Astronautics
100083, Beijing, China,
e-mail: yin@nlsde.buaa.edu.cn

Wenxin LI, Peking University 100871,
Beijing, China,
e-mail: lwx@pku.edu.cn

This article presents a general overview of the historic development, exploration and practice of CNOI during the past 23 years. It includes: 1) some historical data recording the development of CNOI; 2) main contest activities organized by the Scientific Committee and Competition Committee of NOI of CCF, and some relevant management experiences; 3) the selection mechanism for the best contestants of CNOI; 4) the development and characteristics of a testing and evaluation system; 5) the development and characteristics of a visible team competition; 6) training of contestants and teachers, and the improvement and perfection of competition rules.