Curator System Introduction

The Curator System allows an Instructor to securely collect any type of assignment over the Internet, and to archive those assignments for later grading. In addition, the Curator supports automated grading of elementary programming assignments.

From the administrative perspective the issues are largely the same, whether the Curator System is used for automated grading or not.

The submission process uses password authentication to verify the identity of the person submitting an assignment, logs each client transaction, and verifies receipt of each submission by an e-mail message sent to the student. In addition, there is a web-hosted tool that a student may use to view a list of his/her submissions, retrieve archiving or scoring information, and retrieve the submitted file itself, if necessary.

Students submit their assignments via a network connection to the Internet, using Curator Client software. The Student Guide to the Curator describes how your students may obtain and set up the necessary software, and how they would use the Curator Client to submit their work.

Curator administrators and instructors can perform most of the required management tasks via web-hosted clients included in the Curator System.

This document describes the steps an Administrator must carry out in order to install and prepare a Curator Server to manage submissions from students. An *Instructor's Guide* describes management at the course section level, and a *Student's Guide* provides the information a student will need to submit assignments.

Server-side Requirements

The Curator Server has been tested on Intel-based systems running MS Windows NT Workstation 4.0 and NT Server 4.0. The Java JDK, version 1.2 or later, is required due to the use of Java Swing components and the Java 2 security model.

We have tested the Curator Clients with MS Internet Explorer 4.0 and 5.0 and Netscape Communicator 4.6. We experienced the fewest problems while using Internet Explorer 5.0 with the latest patches.

The Curator System authenticates users by checking PID/password pairs against a POP server on a central e-mail server. In the absence of such a facility, the authentication code may easily be replaced by a scheme tailored to your local setup. Eventually, we will replace the POP authentication with an internal ID/password management scheme.

The Curator System itself requires less than 10MB of storage, including source and user manuals.

Archival drive space requirements will, of course, vary. For example, in an introductory C++ course with 700 students each completing six programming assignments, and each allowed up to five submissions per assignment, and assuming that a typical submission will be about 15KB in size, archival space would require about 600MB of storage (allowing for the duplication designed into the system).

If your Curator System will be used to provide automated grading, you will need a command-line compiler and the command-line `kill` utility from the MS Windows NT Server Resource Kit. The NTFS file system should also be used, in order to support the advanced security features used when testing student submissions. If automated grading is used, we recommend that the test area be located on a different partition than the Curator installation.

In order to use the MOSS submission tool, you will need several command-line utilities that are not incorporated into Windows NT. In particular, a uuencode utility, a command-line mail utility, and a command-line zip tool are needed, as is support for the execution of Perl scripts. The Curator distribution contains suitable freeware tools.

Client-side Requirements

The web-hosted and stand-alone Curator Clients have been tested on Intel-based systems running MS Windows 9x, NT Workstation 4.0 and NT Server 4.0. The Java Plug-in, version 1.2 or later, is required, and the web-hosted Client requires that a security configuration utility, provided with the Curator System, must be executed on each Client system.

How to Contact the Curator System Team

The Curator System is available free of charge to faculty at academic institutions (see License section that follows). Manuals and the Curator distribution may be obtained by sending e-mail to eags@cs.vt.edu.

The Curator System development team consists of several graduate and undergraduate programmers working under the direction of William McQuain, an Instructor in the Department of Computer Science, Virginia Tech. The development team may be contacted by sending e-mail to eags@cs.vt.edu.

We will attempt to respond to questions and bug reports as quickly as possible, given our resource limits.

Suggestions for new features are always welcome, but we make no guarantees that such suggestions will be incorporated into future versions of the system. We do request that e-mail relating to the Curator System be sent to the address above, rather than directly to individual members of the Curator team.

A Note on Terminology

In the early stages of development of the Curator System, our focus was primarily on an automated grading system. The predecessor was called the New Automated Grader (NAG for short) and we referred to the new system as the Enhanced Automated Grading System or Curator.

As we approached release of the system, it became apparent to us that the widest use of the system would certainly be to collect student assignments and archive them for evaluation by humans. In view of this, we felt the EAGS name was not terribly descriptive. After quite a few humorous, but unusable suggestions from colleagues, we settled on the name Curator, as being descriptive of the collection and archiving functions that lie at the core of the system.

You will undoubtedly notice references in our documentation to the older name. We trust those will not be confusing.

Background

The Curator is a client-server application written in the Java programming language, developed by the Virginia Tech Department of Computer Science, with support from Virginia Tech and Microsoft Research Corporation. Development is ongoing, and beta testing of the latest system will be performed at a limited number of academic sites during the Fall 1999 term. The first official release of the Curator will be available, at no charge, to academic institutions for the Spring 2000 term.

The Curator System is the latest in a sequence of automated grading systems that have been used by the Virginia Tech Computer Science department over a period of more than 25 years. The immediate predecessor, the New Automated Grading system, was developed in 1997 and used for over two years, processing more than 9000 submissions from almost 2000 students. The beta version of the Curator System was used at Virginia Tech in the fall 1999 term, by about 1600 students who made over 15000 submissions.