Teacher’s Getting Started Guide for the LoCuS Project

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May 29, 2012

TD-14

A Tau Technical Document
LoCuS (Laboratory fOr CompUter Science) System is instructional software for teaching computer science theories through experiments. Experiments within the context of LoCuS are laboratory excursions akin to those found in other sciences like biology, chemistry, and physics. A locus (Latin for “place”) is a “collection of points which share a property” or “the path through which a point moves to satisfy a given condition.” The LoCuS logo is a Boy’s surface, named after its founder, Werner Boy. Boy’s surface is a particularly intricate locus which is described by a system of complex equations. Just like the Mobius strip, Boy’s surface has only a single side. Our goal is for LoCuS to define a new place to emphasize the science of computation as well as a new path for computer science, in the form of labs.

For additional information, see the Field Guide homepage:
URL: http://cgi.cs.arizona.edu/projects/focal/ergalics/fieldguide/
Chapter 1

Introduction

The goal of the Field Guide Project is to develop a body of content that reveals the deep insights of scientific theories of computing, engages a broad range of students, and establishes a new perception that computing is a natural part of science. A specific part of this project, LoCuS, is involved with creating labs for middle and high school students. These labs introduce different computing theories in an interactive way. From the LoCuS website, you are able to schedule one of several computer-based lessons for your students. These lessons are designed to fill a 50-minute class period. In addition to the explanations and experimentation, there are multiple choice and short answer questions that each student will complete. The individual student-submitted answers can also be downloaded from the LoCuS website for grading.
Chapter 2

Using the Website


2. Create your teacher ID and password by selecting [Instructor Login](http://cgi.cs.arizona.edu/projects/locus/labs/) from the menu to the right.

3. Choose your ID and password. This can now be used to log into the website. Do not share this information with students.

After logging in with your new ID, a list of all currently available labs will be displayed with brief descriptions.
Chapter 3

Setting Up a Lab Time

1. From the [Submissions] sidebar, select [Create lab token].

2. A default token will be created. This can be changed to something easier for you and the students to remember by typing over the default tokens in the two fields.

3. Select the lab you would like to use from the drop-down menu.

4. Select the start and end times and dates for the lab. Make sure to choose the appropriate timezone. It is best to start the lab a bit early and end a bit late to allow for set-up time.

5. Click the [Create] button.

The lab will now be available for student use beginning at the time you specified. Remember the token name you gave to this lab! To see all tokens that you have created (both past and future), select [View Submissions Tokens] from the sidebar.
Chapter 4

Have Students Access a Lab

After the lab time has been set up, students may access the lab by following these steps.

1. From the front page of http://cgi.cs.arizona.edu/projects/locus/labs/, select [Download lab by token].

2. Enter in the lab token which was created in advance by the instructor and click [Download Lab]. It may be useful to write the token on the board for the students to enter.

3. The lab should be automatically downloaded and run on the student’s computer.

4. Have the students enter their pre-determined student code on the front page of the lab notebook in the area labeled [Student Code] if you have one for each student. Otherwise, have them enter their names.

5. To navigate through the lab, the students can click on the green arrow on the bottom right of the lab notebook.

6. Once they have finished with the lab, make sure students clicks [Submit]. This will save the lab to the archive online. See the next section for directions to access the submissions. If the submission does not work (a warning will pop-up), have the student choose [Save as PDF] to save their answers to their computer in whichever the file the students indicate.
Chapter 5

Accessing Student Answers


2. Log in with your Instructor ID and password.

3. Select [View Submissions](#) from the sidebar.

4. This page will have the list of students (by their given code, not name) who submitted their work in chronological order.

5. To download their notebook file, click on the underlined [Download](#) button next to their name.
Chapter 6

Managing Network Disruptions

LoCuS implements the following techniques to manage network disruptions.

Every time the student clicks the right arrow button, the lab is automatically saved to the following location: `home/.locus/labs/lab-name_student-code.nb`, where `home` is the user’s home folder (usually `C:\Documents and Settings\username` on Windows XP, `C:\Users\username` on Windows Vista and Windows 7 and `/user/home/username` on Unix and Linux).

LoCuS provides a utility called `exporter` to automatically find and upload saved lab files to the web.

Features Under Development

The next minor release of LoCuS will include a feature to upload a single page with student’s answers to the web every time a student advances to the new page. This page will be automatically appended to the previous answers. If the student decides to change an answer to a question on the previous page, this page will replace the previously uploaded one.