Batch Automation of Cardkey Access

- The current process; much better than before!
- But there’s still a problem
- Programming is the solution (Data Analyzer demo)
- Creating the batch uploads (WebAcct demo)
- Terminology: Clearance, Prox number, C*Cure
- Thanks: Scott, Laura, Kali, Loretta, Tracie, …
- [http://inst.eecs.berkeley.edu/~kevinm/cardkey/](http://inst.eecs.berkeley.edu/~kevinm/cardkey/)

Kevin Mullally
[http://inst.eecs.berkeley.edu/~kevinm](http://inst.eecs.berkeley.edu/~kevinm)
Batch Automation of Cardkey Access
How student data used to get to UCPD

SID #s from printouts for each course

Prox #s from each student

Manual entry per class took weeks

UCPD C*Cure

UCPD C*Cure
Batch Automation of Cardkey Access
How student data now gets to UCPD

- SIDs from
  - Course lists (OLADS)
  - EECS majors (SIS)
  - Manual entries

- SIDs + Prox #s
  - From CAL1 data
  - Customized for EECS (Housing & Dining)

WebAcct per student enabled 1st day

Excel Spreadsheet (*.csv)

<table>
<thead>
<tr>
<th>Name</th>
<th>SID</th>
<th>Prox</th>
<th>Clearances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student,A.</td>
<td>12345678</td>
<td>987674</td>
<td>CoryInst Fall 14</td>
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UCPD C*Cure may collide with current data
Batch Automation of Cardkey Access
How student data should get to UCPD

SID #s from
Course lists (OLADS)
EECS majors (SIS)
Manual entries

SID #s + Prox #s
From CALL data
Customized for EECS
(Housing & Dining)

Current data
from UCPD C*Cure

WebAcct per student enabled 1st day
Read-only ODBC connection
merges with current data

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UCPD C*Cure
Batch Automation of Cardkey Access
How student data should get to UCPD

SID #s from
- Course lists (OLADS)
- EECS majors (SIS)
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SIDs + Prox #s
- From CAL1 data (Housing & Dining)

Current data
- from UCPD C*Cure

WebAcct per student enabled 1st day

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UCPD C*Cure
UCPD could use this data for pre-processing batch input

Read-only ODBC connection

Manual entries
Excel Spreadsheet (*.csv)
UCPD C*Cure
Current data from UCPD C*Cure
Prox
Clearances
987674
EXPIRED

Sep 2014
EECS Instructional Support Group
Batch Automation of Cardkey Access
"automating" mass cardkey updates

Some limitations in the CCure system:

1. limited number of clearances, UCPD charges us for them, they are running out.

2. limited number of slots in the CCure user object, existing entries are easily overwritten with new data, and your cardkey suddenly stops working somewhere.

3. traditionally they have used the expiration of the entire card rather than the individual door or clearance to stop access. If a card like that is later un-expired, it gets access to all the old doors again.
Batch Automation of Cardkey Access
"automating" mass cardkey updates

Logic For Merging New Data

1. If the card is expired:
   1. Remove all old clearances regardless of their expiration dates.
   2. If an old clearance has no expiration date, treat it as if it expired when the card expired.
   3. Add the new clearances.

2. If the card is not expired:
   1. Remove any old clearances that have expired.
   2. If an old clearance has no expiration date, treat it as if it will expire when the card expires.
   3. Add the new clearances.

3. If a new clearance has no expiration date:
   1. treat it as if it expires on the farthest date of the new clearances or

4. If the expiration date of the card is sooner than the expiration of any of the new clearances:
   1. Advance the expiration date of the card to the farthest date of the new clearances.
Batch Automation of Cardkey Access
"automating" mass cardkey updates

Demos:

- CCURE Data Analyzer (merge old and new clearances)
- WebAcct (Generate the batch upload spreadsheet)
Batch Automation of Cardkey Access
"automating" mass cardkey updates

Lunch!
Batch Automation of Cardkey Access
"automating" mass cardkey updates

My materials are at http://inst.eecs.berkeley.edu/~kevinm/cardkey/

• I'll review the process ("slides"),
• demonstrate how we generate the spreadsheets ("WebAcct adm")
• and how we could merge our new requests with the existing CCure data to avoid the conflicts that Tracie finds ("CURE Data Analyzer").
Batch Automation of Cardkey Access
"automating" mass cardkey updates

The conditions:

1. EECS has about 6000 students, 14 labs and 25 lab courses each semester.
2. Each building and lab has a cardkey reader.
3. We want to enable 24x7 access to most labs.
4. We want most students to be enabled all at once on the first day and disabled all at once on the last day.
5. We assign specific labs for specific classes, so that the access given to any individual might be a unique combination of doors that is determined by the combination of EECS classes he/she is taking.
Batch Automation of Cardkey Access
"automating" mass cardkey updates

The problems:

1. Prior to 2007, each student had to be entered into the UCPD cardkey database manually.

2. EECS hired numerous temporary student staff at the start of each semester to try to keep up. They used printouts of the course enrollment lists to verify the students' eligibility.

3. It was not possible to enter them all, so students had to go to the office and leave a request form. Students would not know when their access would be enabled (sometimes days or weeks later).

4. And worse, students often had to return and submit additional forms for their other classes.
Batch Automation of Cardkey Access
"automating" mass cardkey updates

The bottleneck was caused by 3 technical shortcomings:

1. We could not get the students' cardkey numbers without asking them.

2. We could not do the data entry in a batch into the UCPD database.

3. We used to disable the cards at the end of the semester, because it was too labor-intensive to remove all the doors that had been added at the start of the semester.

As cardkeys became more widely used on campus, that conflicted with other departments. Some students regained access to our labs when another dept turned the card back on again.
Batch Automation of Cardkey Access
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There were 4 technical improvements that solved this (thanks to Scott):

1. Cal1 office gave us access to cardkey numbers (they make the cardkeys)

2. Use of temporary door groups ("clearances") to enable and disable access on our own schedule.

3. WebAcct combines cardkey numbers with enrollments from Registrar and produces Excel (*.csv) file that we email to UCPD. The data has one record per student, ie it combines the access for all of their courses.

4. UCPD implemented batch imports via Excel file
Batch Automation of Cardkey Access
"automating" mass cardkey updates

Demos:

- CCURE Data Analyzer (merging old and new clearances)
- Using WebAcct
  - generate spreadsheet using WebAcct
  - filter spreadsheet using cardkeys-diff.pl
- Importing data into WebAcct:
  - download OLADS course enrollments (includes SIDs)
  - download CAL1 data (includes SIDs and prox numbers)
  - enter manual data and refresh the database