

Suppressing Small Cells

A database modification strategy
to avoid reporting cells
smaller than 10.

Why make your database do the work, instead of your reporting program?

- Local databases enable multiple users to report the same findings independently.
- Multiple users, however, often use multiple tools for reporting.
- Storing the logic of a report (in this case, small cell size suppression) in the database itself provides consistency among users' reports, without identical logic needing to be programmed into each individual's reporting tool.

Method Overview

- Aggregate the student data into a report-level file.
- Find the small cells in this “report” and – in a new field – change them to a general, non-descriptive category that masks sensitive personal information.
- Join this new field back into the student data, to make the new non-descriptive category available for reporting.
- Report from the new “suppressed” field using whatever the reporting tool.

Using the CSS 3rd Week Enrollment File:

- Create a table that contains one record per student per academic program (double majors and joint majors would have two records in the file).

This can be accomplished by:

- Creating a file of all students with only one major by:
 - Selecting from the full file only those students with css_major_code<=002, 009, or 003
 - Deleting the css_college_code_1 and _2 fields and the css_major_code_1 and _2 fields
 - Saving this file
- Adding to that saved file the first major of students having two majors by:
 - Selecting from the full file only those students with css_major_code_1<=>[empty]
 - Deleting the css_college_code, css_college_code_2, css_major_code, and css_major_code_2 fields
 - Changing field names of css_college_code_1 to css_college_code, and css_major_code_1 to css_major_code
 - Adding these records to the file of students with only one major
- Adding to that file the second major of students having two majors by:
 - Selecting from the full file only those students with css_major_code_2<=>[empty]
 - Deleting the css_college_code, css_college_code_1, css_major_code, and css_major_code_1 fields
 - Changing field names of css_college_code_2 to css_college_code, and css_major_code_2 to css_major_code
 - Adding these records to the file of students with only one major plus the first of two majors.

We'll pretend nobody can have a third major...

Aggregate this new CSS file into a report by College, Major, Level, and Ethnicity, counting heads:

ID	College	Major	Level	Ethnicity
00001	Letters and Science	Physics	1	White
00002	Letters and Science	Physics	1	Asian
00003	Engineering	Civil Engineering	3	White
00003	Letters and Science	Mathematics	3	White
00004	Letters and Science	Physics	1	Hispanic
00005	Arts and Architecture	Ethnomusicology	6	White

(This is just a sample of cases from the whole file.)

(etc.)



(This is just part of the aggregated result.)

College	Major	Level	Ethnicity	Count
Letters and Science	Physics	1	White	30
Letters and Science	Physics	1	Unknown	2
Letters and Science	Physics	1	Asian	1
Letters and Science	Physics	1	Hispanic	1

(etc.)

For example, three of the four Physics freshmen cells, by Ethnicity, will need to be suppressed (they are smaller than 10)...

College	Major	Level	Ethnicity	Count
Letters and Science	Physics	1	White	30
Letters and Science	Physics	1	Unknown	2
Letters and Science	Physics	1	Asian	1
Letters and Science	Physics	1	Hispanic	1

In this aggregated report file, add another field called Suppress Ethnicity...

College	Major	Level	Ethnicity	Count	Suppress Ethnicity
Letters and Science	Physics	1	White	30	
Letters and Science	Physics	1	Unknown	2	
Letters and Science	Physics	1	Asian	1	
Letters and Science	Physics	1	Hispanic	1	

Populate it with a general category, such as “Unstated, Unknown, Other, Cannot Be Reported” if the Count is less than 10; otherwise, populate it with Ethnicity.

College	Major	Level	Ethnicity	Count	Suppress Ethnicity
Letters and Science	Physics	1	White	30	White
Letters and Science	Physics	1	Unknown	2	Unknown
Letters and Science	Physics	1	Asian	1	Unknown
Letters and Science	Physics	1	Hispanic	1	Unknown

Join this report table, with its new Suppress Ethnicity field, into the student data, joining on College, Major, Level, and Ethnicity.

ID	College	Major	Level	Ethnicity	Suppress Ethnicity
'00001	Letters and Science	Physics	1	White	White
'00002	Letters and Science	Physics	1	Asian	Unknown
'00003	Engineering	Civil Engineering	3	White	White
'00003	Letters and Science	Mathematics	3	White	White
'00004	Letters and Science	Physics	1	Hispanic	Unknown
'00005	Arts and Architecture	Ethnomusicology	6	White	White

If this student data file is aggregated on College, Major, Level, and Suppress Ethnicity, there will be no small cells that reveal sensitive information anymore.

College	Major	Level	Suppress Ethnicity	Count
Letters and Science	Physics	1	White	30
Letters and Science	Physics	1	Unknown	4

Kelly Wahl
UCLA Office of Analysis and
Information Management
(310) 825-3139
kwahl@ponet.ucla.edu