

Adventures with Data Definitions and Reporting (and maybe some solutions)

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CIRPA Conference 2017



University
of Regina

About University of Regina

- Fall 2017: 15,276 total students
 - 13,375 Undergraduate level
 - 1,901 Graduate level
- ERP System: Ellucian Banner
- Analytics and Reporting: new Cognos 11 implementation (Enterprise); Tableau (Desktop for IR users); home-built centralized reports via Access
- Metadata: Data Cookbook

Let's discuss!

- Informal session
- “Student Data Special Interest Group”
- Introduce yourself (name and institution) the first time you speak
- Let's continue the conversation after the session and conference!



Why This Session? - HEDW



Higher Education Data Warehousing Conference 2016

Hosted by University of Rochester, April 3-6, 2016

SOLD OUT!

The HEDW Forum includes technical developers and administrators of data access and reporting systems, data custodians, institutional researchers, and consumers of data representing a variety of internal university audiences. The Annual Conference, sponsored by the Forum, is also open to this same focused audience. The 2016 conference includes three days of sessions as well as the optional Sunday training.

<https://hedw.org/>

Today's Topics

- Data Warehousing and reporting concepts and roles
- Duplicate headcounts (majors and minors, HEDW)
- Registered and Withdrawn student counts
- Single class counts
- Applicants vs. Applications
- Retention rates
- Elements of at-risk students
- MORE ? – audience suggestions please !

Concepts and Roles

- Are you or is someone else in your IR office or institution (IT department?) knowledgeable about:
 - Data Architecture or Information Architecture
 - Facts and Dimensions
 - Conformed dimensions
 - Grain of a table
- Does your institution have a defined role responsible for understanding how your data fits together conceptually – NOT (just) data tables and queries? A “Data Architect”, “Information Architect”, “BI Architect”, or other?

Complex Data Definitions

- Generally combine multiple fields from the student information system (e.g. Banner) or possibly from a combination of systems (e.g. SIS and LMS)
- Initial set up of fields was commonly transactional
 - Little thought to reporting or summarizing
- Context is required
 - Difficult to document and describe concisely
 - Difficult to share solutions
- What complex data definitions do you struggle with and want to see how others handle them?

Duplicate Headcounts

- Count all students touching a program for purposes of program capacity planning
 - First Major AND Second Major (and possibly Minors)
 - Concurrent programs

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How Do You Report on Double Majors?: The Process
Towards Counting “Hidden” Students

HEDW MARCH 10, 2016

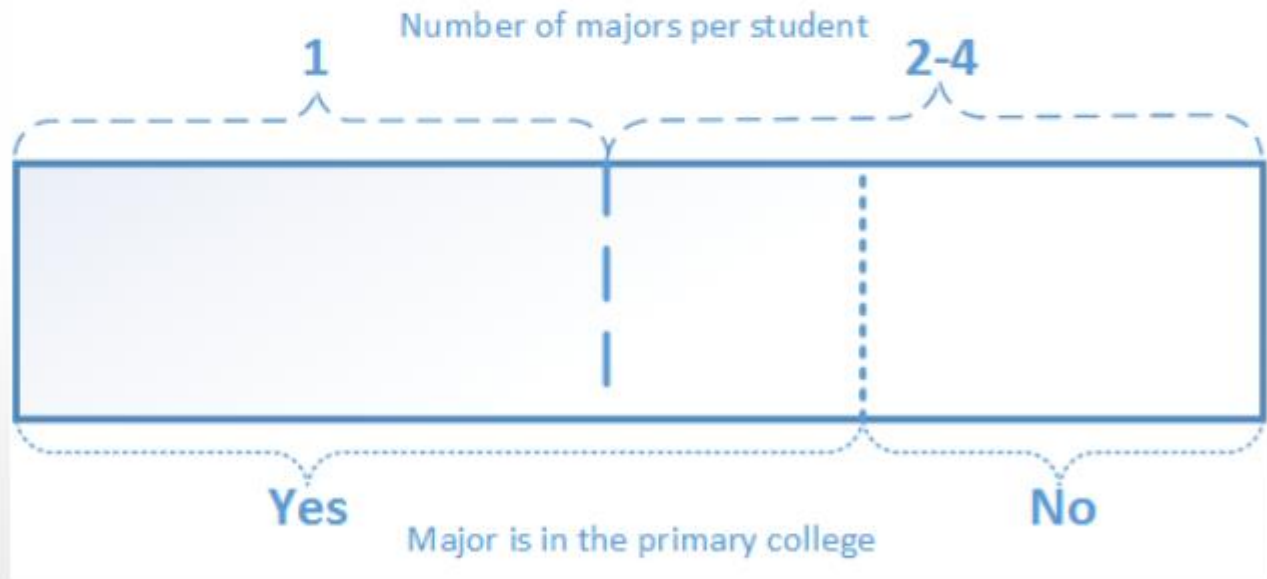
Katarina Durasova & Michelle Stine, Penn State

<https://hedw.org/hedwpresentation/how-do-you-report-on-double-majors-the-process-towards-counting-hidden-students/>



- Start with answering simple questions
 - Does a student have more than 1 major? ... Yes or No
 - Is student's major in the primary college? ...Yes or No

- Visualize



- Define sets that can use simple aggregation (sum)
 - Student has only 1 major in primary college
 - Student has more than 1 major in primary college
 - Student has primary major is elsewhere, but his Major 2-4 in college





A student is pursuing

- both a Bachelor's and Master's in Accounting and
- a secondary Bachelor's in Economics

College	Degree	Major
Business	B S	Accounting
Liberal Arts	B S	Economics
Business	M ACC	Accounting

Student counts by colleges

Academic College (Majors 1-4)	Only 1 Major within the Primary College	More than 1 Major within the Primary College	Primary Major Elsewhere: Major 2- 4 in College	Total Student Count
Business	0	1	0	1
Liberal Arts	0	0	1	1
Grand Total	0	1	1	1



Duplicate Headcounts - UofR

Summary of Majors and Minors, with code list, for Unit: **CS - Computer Science**

MJ&MN4: Census Date Students, Summary of Majors & Minors for:
CS&M M&CS SSD CS

MajMin Level	LEVEL	MajMinLevelDetail	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016
			201030	201130	201230	201330	201430	201530	201630
Major	UG	MJ1 First Major (CS&M)	5	4	4	3	1	1	4
		MJ1 First Major (CS)	171	186	216	231	266	299	385
		MJ1 First Major (M&CS)	2	1	1		1		1
		MJ1 First Major (SSD)	6	7	5	5	7	12	12
		MJ2 Added Major (CS)	3	1					
		Total			187	199	226	239	275
Grad		MJ1 First Major (CS)	62	61	59	80	83		
		Total							
		Total							
			249	260	285	319	358		
Minor	UG	MN1 Added Minor (CS)	5	2	3	5	2		
		MN2 Added Minor (CS)	1						
		Total							
		Total							
			6	2	3	5	2		
		Total						1	1
		Total							
			6	2	3	5	2		
Grand Total			255	262	288	324	360	384	489

URegina Major/Minor codes for CS - Computer Science

Code	Description
CS	Computer Science
CS&M	Combined Computer Science Math
M&CS	Combined Math Computer Science
SSD	Software Systems Development

Duplicate Headcounts – UofR Calculation

(Filters on <>"": MajMinLevelDetail =)

```
IF LEN([ProgramList])>=3
  AND contains(" "+UPPER([ProgramList])+ " ", " "+TRIM(UPPER([Program Code]))+" ")
  THEN "PROG "+TRIM([Program Code])
ELSEIF LEN([ProgramSearch])>=3 and [ProgramSearch]=left([Program Code],LEN([ProgramSearch]))
  THEN "PROG "+TRIM([ProgramSearch])+""
ELSE
  if contains(" "+UPPER([MajMinList])+ " ", " "+TRIM(UPPER([Major Code 1]))+" ")
    then "MJ1 First Major (" +TRIM(UPPER([Major Code 1]))+" )"
  elseif contains(" "+UPPER([MajMinList])+ " ", " "+TRIM(UPPER([Major Code 2]))+" ")
    then "MJ2 Added Major (" +TRIM(UPPER([Major Code 2]))+" )"
  elseif contains(" "+UPPER([MajMinList])+ " ", " "+TRIM(UPPER([Minor Code 1]))+" ")
    then "MN1 Added Minor (" +TRIM(UPPER([Minor Code 1]))+" )"
  elseif contains(" "+UPPER([MajMinList])+ " ", " "+TRIM(UPPER([Minor Code 2]))+" ")
    then "MN2 Added Minor (" +TRIM(UPPER([Minor Code 2]))+" )"
  else ""
end
END
```

Registered & Withdrawn Students

- Peak counts for purposes of teaching/class capacity planning
- Withdrawn students usually require space and teaching resources for a good portion of the course duration
- Related question: Do you distinguish between Enrolled vs. Registered students?

Registered & Withdrawn: UofR

- Query containing one row per course registration with identification of registration status and credit hours. Option to summarize by registered and withdrawn for Course Seats and Program Head Count.

Term	SID / PIDM	Course CRN	ETL reporting as of date	Registration Status	Credit Hours
201730	13	8011		R	3.0
201730	13	8022		W	3.0
201730	13	8025		W	3.0
201730	13	9199		W	1.0
		# Registered	# Withdrawn	Registered Credit Hours	Withdrawn Credit Hours
		1	3	3.0	7.0
		Program Head Count			
		1	0	3.0	7.0

Single Classes (“Meets”)

- Identifying single classes, for purposes of teaching load, where the “class” may be split up amongst multiple sections, organisational funding units, and/or multiple faculties/colleges

Single Meets: UofR

Query to identify class sections taught on the same day, at the same time, by the same instructor or 'team' (may be various locations with web and distance delivery).

- 1 Meet (= “class” for Instructor)
- has 1 or more Courses (= “class” for Student)
multi-level: GEOG 410 & 810 &/or crosslisted: GEOL 410
- each course has 1 or more Sections
- often want to split for attribution ex 1 meet for teaching load is 0.8 meets UnderGrad and 0.2 meets Graduate

Meets – UofR report (Note TWO grains)

CRSE details for AR Faculty GOES BAC Dept, fiscal year 2016-17

BAC SCCD	BAC Level	Crse	V Term	MeetXD	SEQ	SCCD Code	SD Faculty	CRN	Bldg Code	Room Code	S Instructor	# Meets	# Enrol	Enrol / Meet	CrHr (meet)	Cr Hr / M..	All CrHr
2XX	ENST-200	201630	201630-31274	AR	ARTS	31274	CL	312	Hardenbicker, Ulrike	1	20	20.0	60	60	60		
	GEOG-203	201630	201630-31418	AR	ARTS	31418	CL	109	Siemer, Julia	1	24	24.0	72	72	72		
	GEOG-207	201630	201630-31419	AR	ARTS	31419	CL	317	Siemer, Julia	1	23	23.0	69	69	69		
	GEOG-210	201630	201630-31420	AR	ARTS	31420	CL	312	Widdis, Randy	1	8	8.0	24	24	24		
		201710	201710-11528	AR	ARTS	11528	CL	312	Widdis, Randy	1	21	21.0	63	63	63		
	GEOG-222	201630	201630-31421	AR	ARTS	31421	CL	345	Chattopadhyay, Sutap..	1	8	8.0	24	24	24		
	GEOG-255	201630	201630-31422	AR	ARTS	31422	Null	Null	Siemer, Julia	<&&>						<&&>	
		201710	201710-11530	AR	ARTS	11530	Null	Null	Siemer, Julia	<&&>						<&&>	
Total												6	104	17.3	312	52	312
3XX	GEOG-303	201710	201710-11532	AR	ARTS	11532	CL	317	Siemer, Julia	1	25	25.0	75	75	75		
	GEOG-307	201710	201710-11533	AR	ARTS	11533	CL	135	Siemer, Julia	1	12	12.0	36	36	36		
	GEOG-309	201630	201630-5G	AR	ARTS	31423	CL	232	Piowar, Joseph	1	21	21.0	63	63	63		
	GEOG-321	201710	201710-11534	AR	ARTS	11534	CL	317	Cote, Mark	1	13	13.0	39	39	39		
	GEOG-323	201630	201630-32838	AR	ARTS	32838	CL	312	Hardenbicker, Ulrike	1	22	22.0	66	66	66		
	GEOG-325	201710	201710-11536	AR	ARTS	11536	CL	312	Hardenbicker, Ulrike	1	12	12.0	36	36	36		
	GEOG-326	201630	201630-31426	AR	ARTS	31426	CL	313	Chattopadhyay, Sutap..	1	14	14.0	42	42	42		
	GEOG-327	201710	201710-11537	AR	ARTS	11537	CL	317	Cote, Mark	1	19	19.0	57	57	57		
	GEOG-355	201630	201630-31428	AR	ARTS	31428	Null	Null	Siemer, Julia	<&&>						<&&>	
		201710	201710-11540	AR	ARTS	11540	Null	Null	Siemer, Julia	<&&>						1	
	GEOG-396AK	201630	201630-31429	AR	ARTS	31429	CL	313	Widdis, Randy	1	2	2.0	6	6	6		
Total												9	140	15.6	420	47	421
												9	9.0	27	27	27	

AR_BAC_I02: FB CRSE details for None Dept, # Meets (XD), avg. enrol & cr-hr/meet, total credit hours (all sources)

NOTES: <&&> = CRSE is cross-listed under a primary CRSE or is not categorized as a "teaching Meet"



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Applicants vs. Applications

- If an applicant submits more than one application in a term, identification of the proper application (i.e. program) to count when measuring new individuals touched by recruitment.

Applicants vs. Applications: UofR

- Assign 'tiers' to groups of decision codes to identify which application made it the furthest in the process.

Tier 1: Accepted/Eligible to Register

Tier 2: Offered Admission

Tier 3: Waitlisted for Admission

Tier 4: No longer eligible to register

Tier 5: Declined offer/Not selected

Tier 6: Not Qualified/Completed

Tier 7: In Progress

Tier 8: Not processed

- Count the application with the lowest tier number. If more than one app exists in the same tier, then count the one with the highest application number.

Retention Rates

- Calculation of retention rates that are meaningful at a faculty or department or program level, using less specific definitions than CSRDE reporting

Elements of At Risk Students

- Identification of each element that may feed into identifying student as “at risk” of dropping out or failing
- For example: identifying Financial risk but ensuring it is not based on library fees for overdue books (as use of library may indicate success) or outstanding fees for a student who is sponsored when fees are not paid until after successful completion.

Continue the discussion

- Delegate's contact information is in the mobile app
- LinkedIn discussions
- Coming soon to the CIRPA website: discussion forum behind the secure login area

Contact Us



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