

Understanding, Creating and using OLAP
cubes for multidimensional reporting:
*The coolest visualization you're
probably not using*

John Tong and Andrea Halow



Enterprise Information
Technology Services
UNIVERSITY OF GEORGIA

evisions
conference



About the University of Georgia

Chartered in 1785 we are America's first state chartered and state supported land grant university

Fall 2017 enrollment totaled 37,606

Undergraduates 28,848

Graduate and Professional 8,758

Work force of 10,370 faculty, staff and administration

UGA went live with Banner and Argos in Fall of 2014

John Tong

Application Analyst Principal

Student Reporting Team Lead (URR/ODS/EDW)

Responsible for reporting and improving data quality and service with functional areas

20+ years of Banner/Higher Education experience

Part-time Door Guard



John Tong



Andrea Halow

Application Analyst Specialist

Administrator for Argos reporting and development

Student Reporting and Administration (ODS/EDW)

15 years of higher education experience 12 of those
years working in the Registrar's office

No part time job



Quick poll

How knowledgeable are you about OLAP cubes?

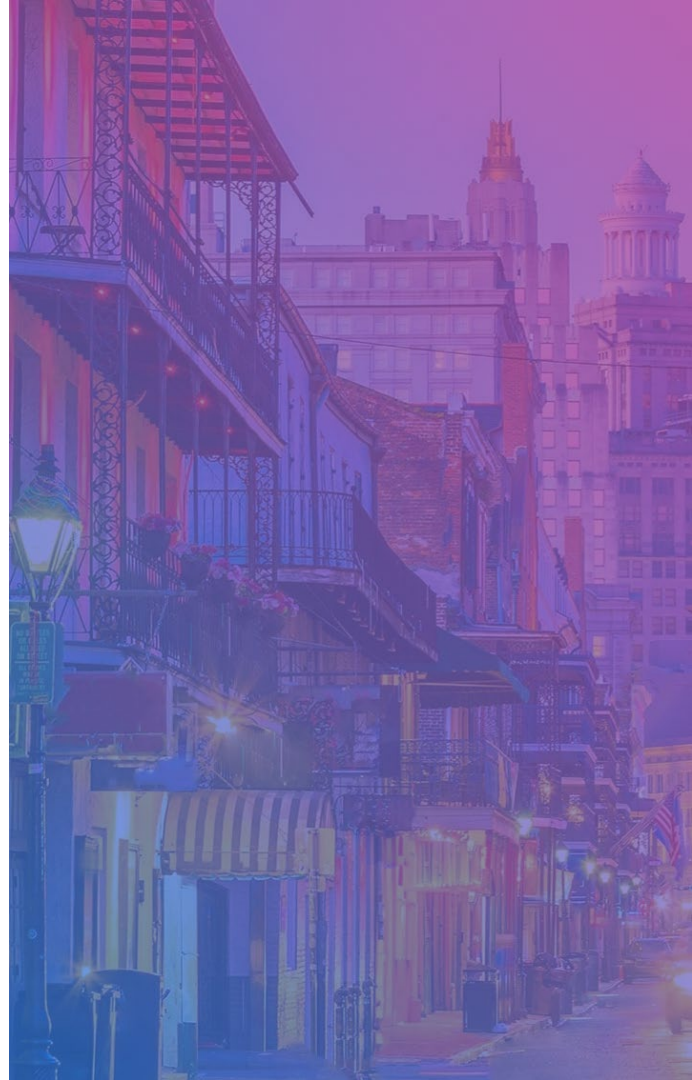
1. Know almost nothing
2. Heard of them, they might be useful
3. I've seen and used them, but don't know how to make one
4. I know a pretty good bit, just here to see if the presenters do



AGENDA

- 1 OLAP Overview
- 2 Argos Demonstration
- 3 Creating an OLAP
- 4 Common Pitfalls
- 5 Tips and Tricks
- 6 Summary
- 7 Q & A

OLAP Cube Overview



WHAT IS AN OLAP CUBE?

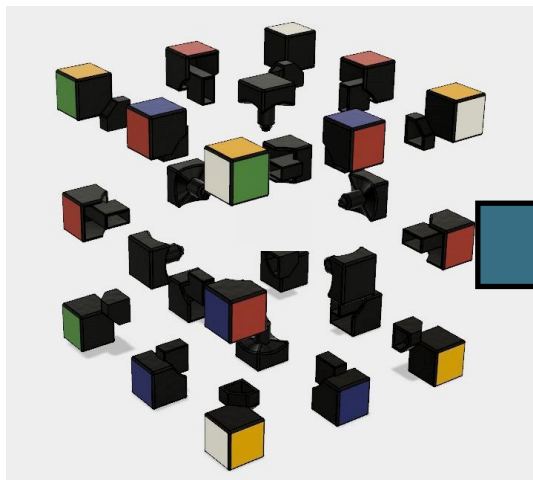
OLAP is an acronym for **O**nline **A**nalytical **P**rocessing.

OLAP cubes are used to analyze a multidimensional dataset.

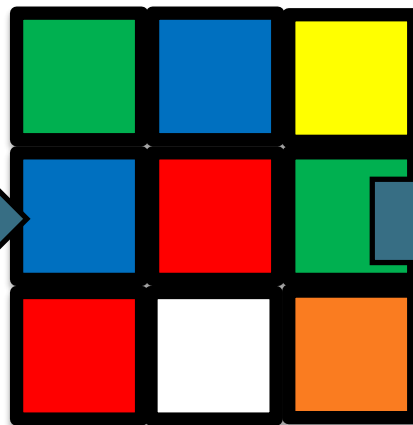
OLAPs are used for analysis and to look for insights or relations.

- A visualization tool that allows users to analyze data real time
- AKA 1000 reports in a box AKA Pivot Tables on Steroids
- Originally created for browsing EDW data, but can be adapted to ODS or Transactional data.

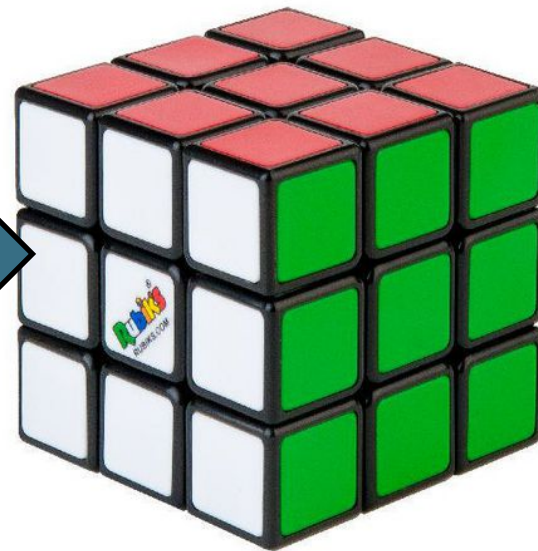
Your data



Your report

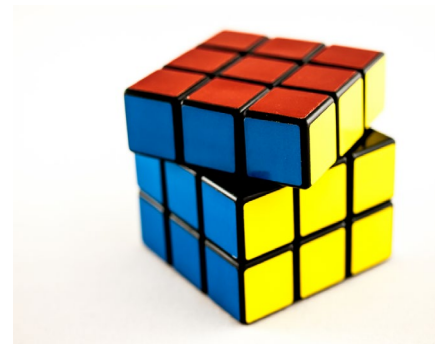


Your data in the cube

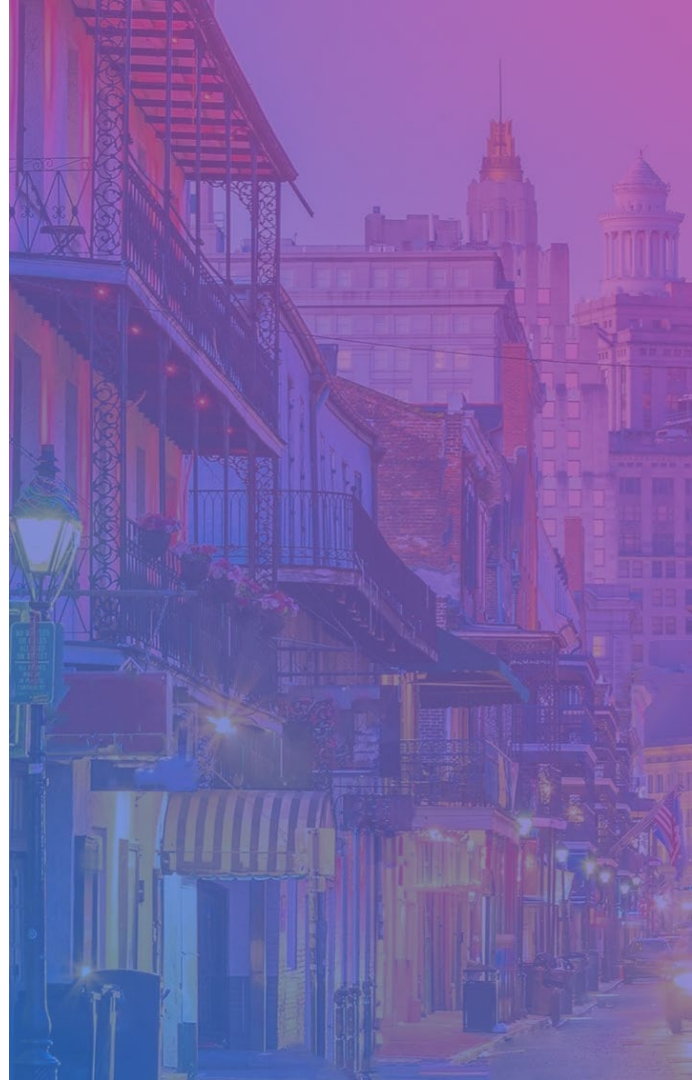


BEST USES FOR AN OLAP?

- Focused scope of data, but large in volume
- When dynamic analysis and trends are more important than straight lists
- For users who want more control/flexibility than a static report
- Where the data needs (like filters) may change frequently



Demo of OLAP Cubes



Demo

Term:

DisplayTerm	TermCode
201602 - Spring 2016	201602
201605 - Summer 2016	201605
201608 - Fall 2016	201608
201702 - Spring 2017	201702
201705 - Summer 2017	201705
201708 - Fall 2017	201708
201802 - Spring 2018	201802

Run OLAP

Available Dimensions

ENROLLED_IND ☐ REGISTERED_IND ☐ RESIDENCY ☐ RESIDENCY_DE ☐ SUB_ACADEMIC ☐ TOTAL_CREDIT ☐ STUDENT_CLAS ☐ GENDER ☐ GENDER_DESC ☐ UGA_Reg_Ind ☐

STUDENT_STAT ☐ STUDENT_STAT ☐ Count ☐ COLLEGE (2) ☐

Columns

ACADEMIC_PER ☐

COLLEGE_DESC	EMIC_PERIOD (2)	201608	201708	201808	Total by ROWS
DEGREE	COLLEGE_DESC (2)	Count	Count	Count	Count
DEGREE_DESC		Value	Value	Value	Value
MAJOR	Biomed and Health Sci Inst	37.00	39.00	33.00	109.00
MAJOR_DESC	College of Agr and Env Science	2183.00	2181.00	2345.00	6709.00
	College of Arts and Sciences	12527.00	12736.00	13129.00	38392.00
	College of Business	9015.00	9404.00	9797.00	28216.00
	College of Education	4790.00	4627.00	4737.00	14154.00
	College of Engineering	2099.00	2296.00	2480.00	6875.00
	College of Env and Design	406.00	430.00	394.00	1230.00
	College of Fam and Consumr Sci	1647.00	1799.00	1866.00	5312.00
	College of Jour and Mass Comm	2287.00	2335.00	2264.00	6886.00
	College of Pharmacy	1021.00	1037.00	1040.00	3098.00
	College of Public Health	1044.00	1106.00	1089.00	3239.00
Total by COLUMNS		41969.00	43269.00	44455.00	129693.00

Measures

Demo

Drill Down

Term: DisplayTerm TermCode

201602 - Spring 2016	201602
201605 - Summer 2016	201605
201608 - Fall 2016	201608
201702 - Spring 2017	201702
201705 - Summer 2017	201705
201708 - Fall 2017	201708
201802 - Spring 2018	201802

Run OLAP

Available Dimensions

ENROLLED_IND REGISTERED_IND RESIDENCY RESIDENCY_DE SUB_ACADEMIC TOTAL_CREDIT STUDENT_CLAS GENDER GENDER_DESC UGA_Reg_Ind

STUDENT_STAT STUDENT_STAT Count COLLEGE (2)

Columns

ACADEMIC_PER

COLLEGE_DESC DEGREE DEGREE_DESC MAJOR MAJOR_DESC

COLLEGE_DESC	DEGREE	DEGREE_DESC	MAJOR	MAJOR_DESC	201608	201708	201802
					Count	Count	Count
					Value	Value	Value
Biomed and Health Sci Inst					37.00	39.00	
	MBB	Master of Biomfg Bio	BMBP	Biomanufact and Bioprocess	17.00	11.00	
	PHD	Doctor of Philosophy			20.00	28.00	
			IBSC	Interdisciplinary Biomed Sci	2.00	1.00	
			NEUR	Neuroscience	18.00	27.00	
College of Agr and Env Science					2183.00	2181.00	2
	BSA	Bachelor of Sci in Agriculture			1404.00	1351.00	1
			0000	Unspecified	15.00	9.00	
			AGBU	Agribusiness	146.00	146.00	
			AGCM	Agricultural Communication	39.00	36.00	
			AGEC	Agricultural and Applied Econ	35.00	35.00	
			AGED	Agricultural Education	71.00	65.00	
			AGEV	Agriscience and Environ	41.00	42.00	
Total by COLUMNS					41969.00	43269.00	4

Measures

Count

Demo

Filtering Sorting and Grouping

Term:

201608 - Fall 2016	201608
201702 - Spring 2017	201702
201705 - Summer 2017	201705
201708 - Fall 2017	201708
201802 - Spring 2018	201802
201805 - Summer 2018	201805
201808 - Fall 2018	201808

Run OLAP

Available Dimensions

ENROLLED_IND | REGISTERED_IND | RESIDENCY | RESIDENCY_DE | SUB_ACADEMIC | TO

STUDENT_STAT | STUDENT_STAT | Count | COLLEGE (2) |

Columns

ACADEMIC_PER |

COLLEGE_DESC |

DEGREE |

DEGREE_DESC |

MAJOR |

MAJOR_DESC |

COLLEGE_DESC (2)	EMIC_PERIOD (2)	201608	201708	201808	Count
COLLEGE_DESC (2)	Count	Count	Count	Count	Count
	Value	Value	Value	Value	Value
Biomed and Health Sci Inst		37.00	39.00		
College of Agr and Env Science		2183.00	2181.00		
College of Arts and Sciences		12527.00	12736.00		
College of Business		9015.00	9404.00		
College of Education		4790.00	4627.00		
College of Engineering		2099.00	2296.00		
College of Env and Design		406.00	430.00		
College of Fam and Consumr Sci		1647.00	1799.00		
College of Jour and Mass Comm		2287.00	2335.00		
College of Pharmacy		1021.00	1037.00		
College of Public Health		1044.00	1106.00		
Total by COLUMNS		41969.00	43269.00		

Measures

Count

Dimension editor: COLLEGE_DESC (2)

Caption

COLLEGE_DESC (2)

Enable prev. forecast value

Enable next forecast value

Forecasting method

Triple Exponential Smoothing

Items count: 20

Visible

Filtered

Grouping

Sorting

Demo

Filtering Sorting and Grouping

Term: DisplayTerm TermCode

201608 - Fall 2016	201608
201702 - Spring 2017	201702
201705 - Summer 2017	201705
201708 - Fall 2017	201708
201802 - Spring 2018	201802
201805 - Summer 2018	201805
201808 - Fall 2018	201808

Run OLAP

Available Dimensions

ENROLLED_IND REGISTERED_IND RESIDENCY RESIDENCY_DE SUB_ACADEMIC TOTAL_CREDIT STUDENT_CLAS GENDER GENDER_DESC UGA_Reg_Ind

STUDENT_STAT STUDENT_STAT

Columns

ACADEMIC_PER Count

COLLEGE (2)	ACADEMIC_PERIOD (2)	201608	201708	201808	Total by ROWS
COLLEGE_DESC (2)	COLLEGE_DESC (2)	Count	Count	Count	Count
DEGREE		Value	Value	Value	Value
EC		218.00	239.00	241.00	698.00
ED		4790.00	4627.00	4737.00	14154.00
EN		2099.00	2296.00	2480.00	6875.00
EV		406.00	430.00	394.00	1230.00
FC		1647.00	1799.00	1866.00	5312.00
FR		546.00	546.00	596.00	1688.00
GR		1.00	4.00	5.00	10.00
HI		0.00	94.00	97.00	191.00
JO		2287.00	2335.00	2264.00	6886.00
LW		634.00	633.00	710.00	1977.00
PB		1044.00	1106.00	1089.00	3239.00
PI		1556.00	1672.00	1709.00	4937.00
SW		737.00	705.00	684.00	2126.00
Professional		1741.00	1795.00	1810.00	5346.00
College of Pharmacy		1021.00	1037.00	1040.00	3098.00
College of Veterinary Medicine		720.00	758.00	770.00	2248.00
Total by COLUMNS		41969.00	43269.00	44453.00	129691.00

Measures

Count

Demo

Rotating the Cube

Term:

DisplayTerm	TermCode
201608 - Fall 2016	201608
201702 - Spring 2017	201702
201705 - Summer 2017	201705
201708 - Fall 2017	201708
201802 - Spring 2018	201802
201805 - Summer 2018	201805
201808 - Fall 2018	201808

Run OLAP

Available Dimensions

ENROLLED_IND | REGISTERED_IND | RESIDENCY | RESIDENCY_DE | SUB_ACADEMIC | TOTAL_CREDIT | STUDENT_CLAS | GENDER_DESC | GENDER | UGA_Reg_Ind |

STUDENT_STAT | COLLEGE (2) | DEGREE | DEGREE_DESC | MAJOR | MAJOR_DESC | Count

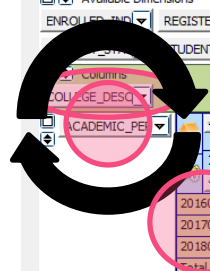
Columns

COLLEGE_DESC | ACADEMIC_PERIOD

	COLLEGE_DESC (2)	Biomed and Health Sci Inst	College of Agr and Env Science	College of Arts and Sciences	College of Business	College of Education	College of Engineering	College of Env Design
ACADEMIC_PERIOD (2)	Count	Count	Count	Count	Count	Count	Count	Count
	Value	Value	Value	Value	Value	Value	Value	Value
201608		37.00	2183.00	12527.00	9015.00	4790.00	2099.00	40
201708		39.00	2181.00	12736.00	9404.00	4627.00	2296.00	43
201808		33.00	2345.00	13129.00	9797.00	4737.00	2480.00	39
Total by COLUMNS		109.00	6709.00	38392.00	28216.00	14154.00	6875.00	123

Measures

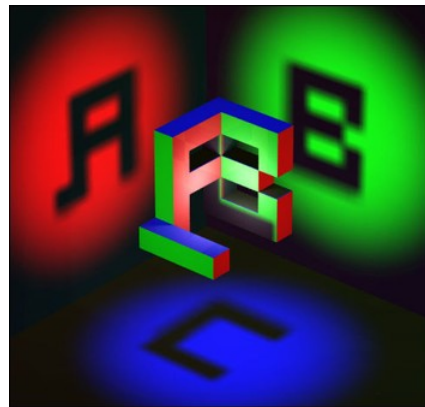
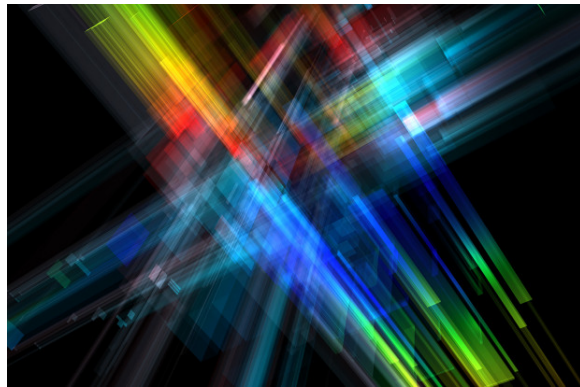
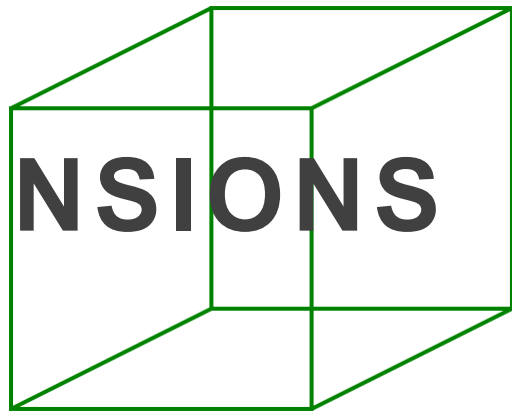
Count



OLAP Vocabulary Summary

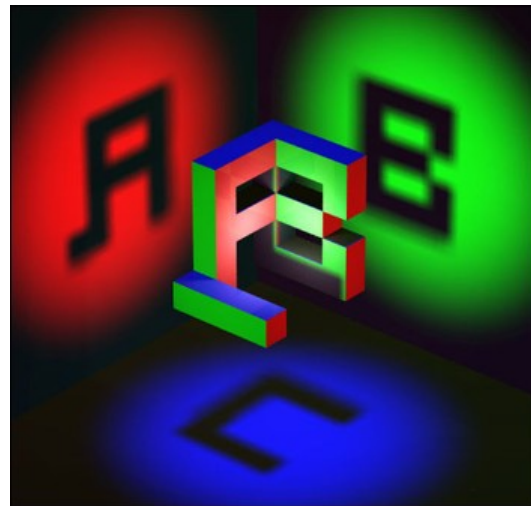
- **Dimension** – ‘Bucket’ or category you want to be able to slice/dice by. For example, Demographics, Major, Account Type. Usually comes from a Dimension table in Star Schemas.
- **Measures** – Numerics that you want to track. Usually a count or an amount like money.
- **Hierarchy** – Breakdown or ‘Roll up’ categories for Dimensions.
- **Granularity/Grain** – The lowest level of detail you can get to on a Cube. For example, for student accounts it might be Per Account Detail Transaction, or a summary Per Student. Too high level and you can’t get at the details, too low and you pay a performance cost.

DIMENSIONS

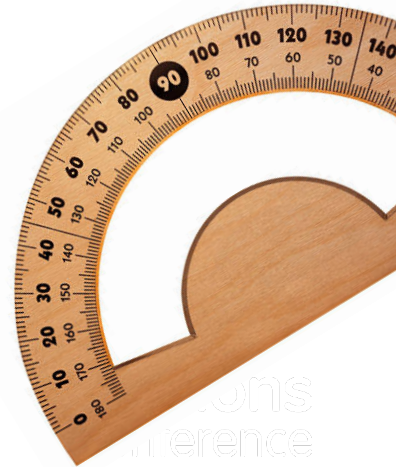


Dimension Techniques

- Dragging and Dropping
- Drilling down
- Rotating the cube
- Filtering
- Sorting
- Grouping



FACTS/ MEASURES



Measure Techniques

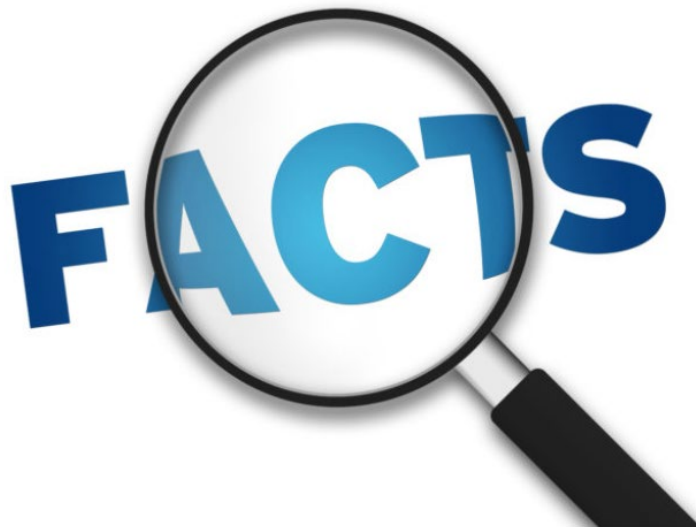
Can be calculated or built in:

- Count
- Average
- Sum
- Percentages
- Create formulas

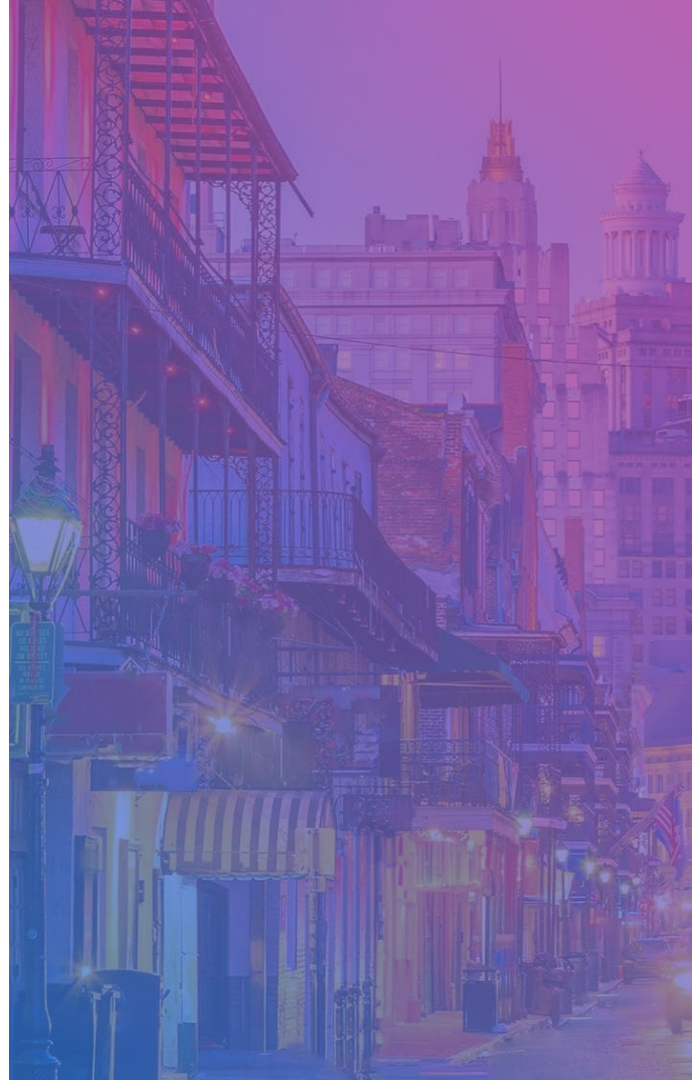


Types of Facts

- Factless facts
- Additive
- Semi-additive
- Derived



Designing an OLAP



OLAP Design Process

1. What questions are we trying to answer?

Involve functional from the start

OLAP Design Process

2. What kind of data do we need to answer the questions?

What measures and dimensions?

What data sources?

OLAP Design Process

3. What is the lowest level of detail needed?

Granularity: Be flexible!

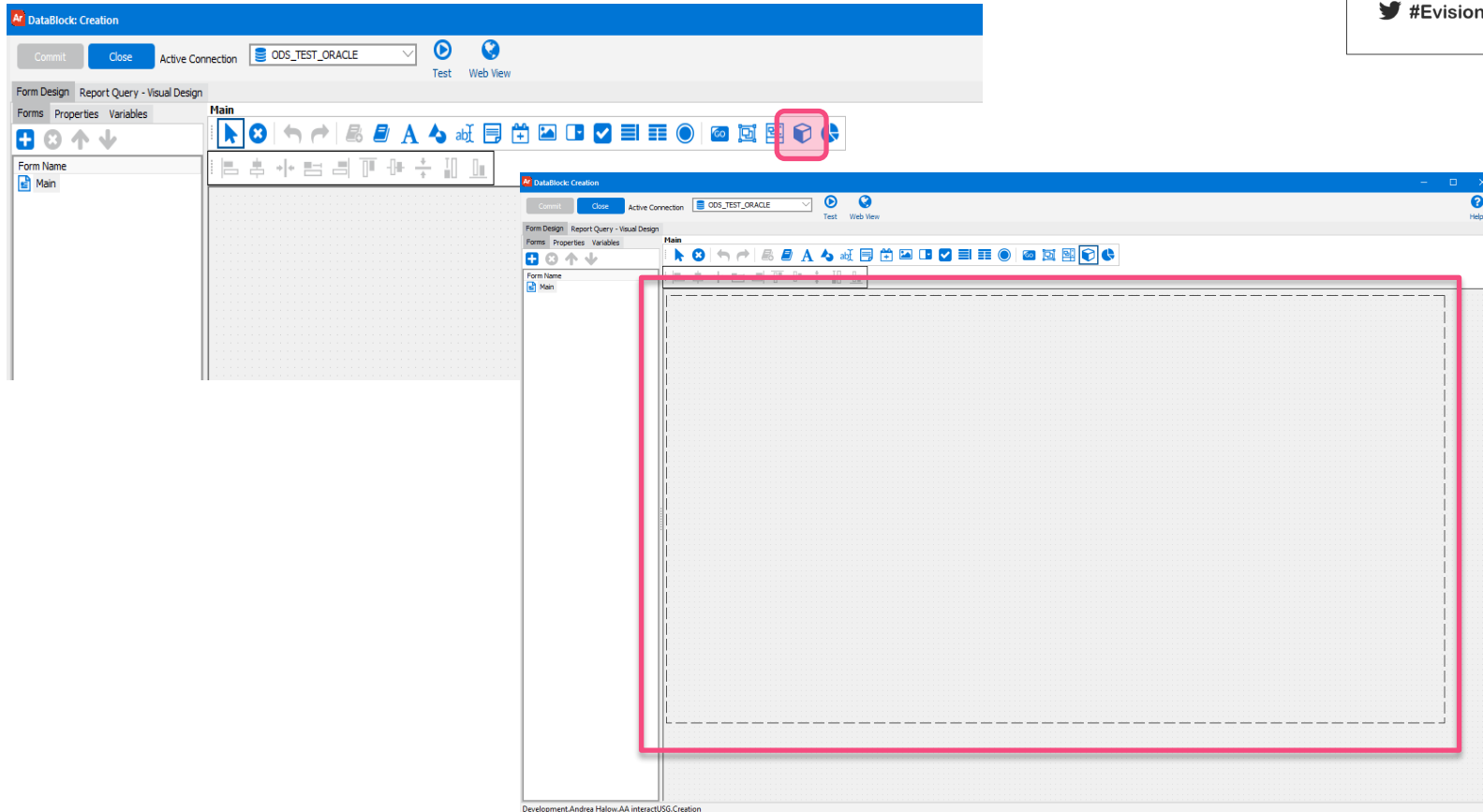
BUILD EXAMPLE IN ARGOS



Building an Argos OLAP example

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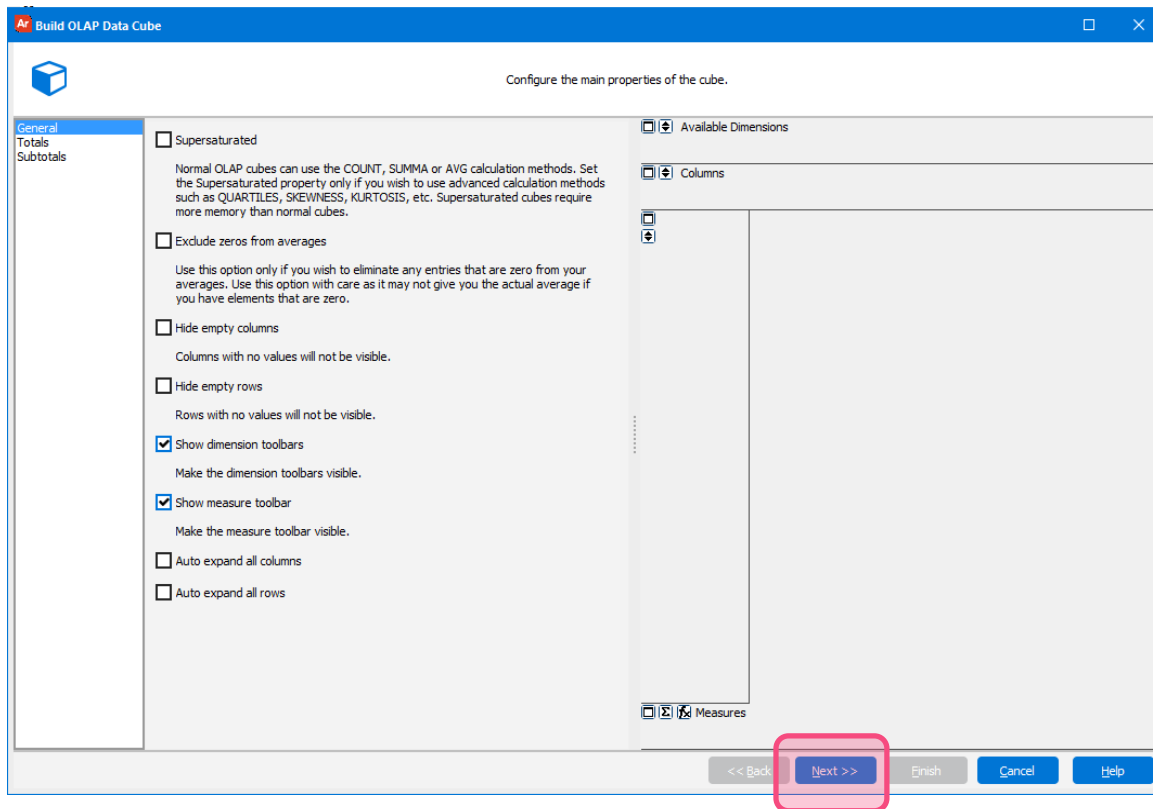
#Evisions19

The screenshot displays the 'DataBlock: Creation' application window. The interface is divided into several sections:

- Top Bar:** Includes 'Commit' and 'Close' buttons, an 'Active Connection' dropdown set to 'ODS_TEST_ORACLE', and 'Test' and 'Web View' buttons.
- Form Design Tab:** The 'Form Design' tab is selected, showing a 'Properties' pane on the left with various settings for 'Cube1 (Cube)'. The 'Main' workspace is on the right.
- Properties Pane:** Lists properties such as 'Accessible Text', 'Align', 'Auto Expand Column', 'Auto Expand Rows', 'Build Super Saturate', 'Color Theme', 'Cube', 'Enabled', 'Exclude Zeros From', 'Height', 'Hide Empty Column', 'Hide Empty Rows', 'Left', 'Show Dimension T.C.', 'Show Measure T.O.', 'Tab Order', 'Tab Stop', 'Top', 'Variable Name', 'Visible', and 'Width'.
- Main Workspace:** The central area for designing the OLAP cube. It features a 'Main' toolbar with icons for adding, deleting, and formatting elements. Below the toolbar, there are sections for 'Available Dimensions' and 'Columns'. The 'Measures' section is also visible at the bottom.

Development: Andrea Halow, AA interactUSG, Creation

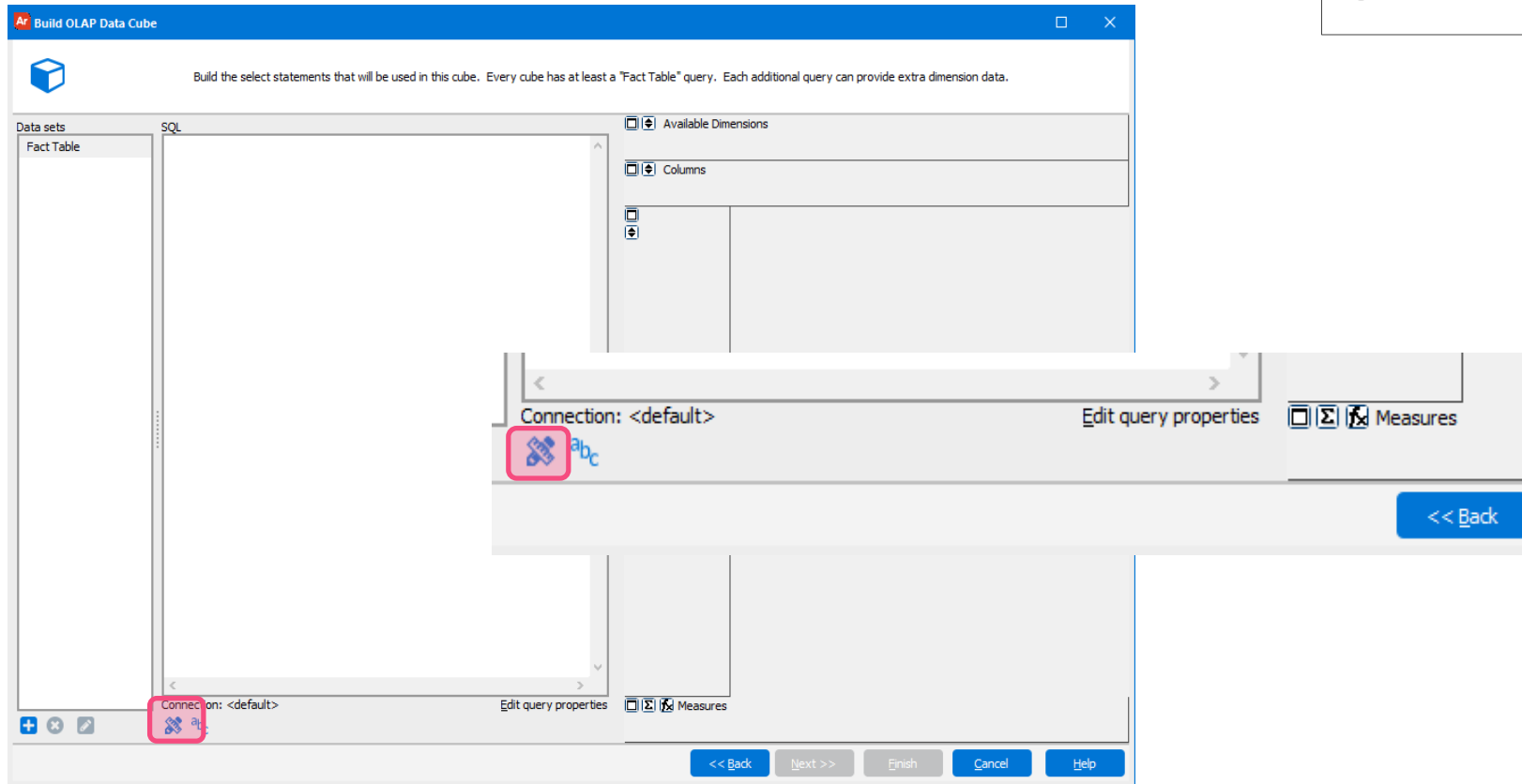
Building an Argos OLAP example



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Building an Argos OLAP example

Building an Argos OLAP example

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Build OLAP Data Cube

Build the select statements that will be used in this cube. Every cube has at least a "Fact Table" query. Each additional query can provide extra dimension data.

Data sets

- Fact Table

SQL

```
select STUDENT.ID "Count",
       STUDENT.ACADEMIC_PERIOD,
       STUDENT.SUB_ACADEMIC_PERIOD,
       STUDENT.STUDENT_STATUS,
       STUDENT.STUDENT_STATUS_DESC,
       STUDENT.ENROLLED_IND,
       STUDENT.REGISTERED_IND,
       STUDENT.RESIDENCY,
       STUDENT.RESIDENCY_DESC,
       STUDENT.TOTAL_CREDITS,
       STUDENT.STUDENT_CLASSIFICATION_BOAP,
       ACADEMIC_STUDY.MAJOR,
       ACADEMIC_STUDY.MAJOR_DESC,
       ACADEMIC_STUDY.COLLEGE,
       ACADEMIC_STUDY.COLLEGE_DESC,
       ACADEMIC_STUDY.DEGREE,
       ACADEMIC_STUDY.DEGREE_DESC,
       PERSON_DETAIL.GENDER,
       PERSON_DETAIL.GENDER_DESC,
       NVL((select distinct 'Y' "calc1"
            from ODSMGR.STUDENT_COURSE STUDENT_COURSE
            SATURN.STVRSTS STVRSTS
       where ( STUDENT_COURSE.REGISTRATION_STATUS
              and ( STUDENT_COURSE.PERSON_UID = ACADEM
                    and STUDENT_COURSE.ACADEMIC_PERIOD
                    and STVRSTS.STVRSTS_VOICE_TYPE in(
                    and not ( STUDENT_COURSE.SUBJECT =
                          or STUDENT_COURSE.SUBJECT = 'FST
                          or STUDENT_COURSE.SUBJECT = 'SAB
```

Available Dimensions

Columns

Connection: <default> Edit query properties

<< Back Next >> Finish Cancel Help

Building an Argos OLAP example

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Build OLAP Data Cube

Build the select statements that will be used in this cube. Every cube has at least a "Fact Table" query. Each additional query can provide extra dimension data.

Data sets

Fact Table

SQL

```
select STUDENT.ID "Count",
STUDENT.ACADEMIC_PERIOD,
STUDENT.SUB_ACADEMIC_PERIOD,
STUDENT
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
STUDEN
PERSON
PERSON
NVL (
from
where
and
```

Available Dimensions

ENROLLED REGISTER RESIDENC RESIDENC SUB_ACAD
TOTAL_CF STUDENT GENDER GENDER UGA_Reg

Test Values

Enter test values for the following variables

Variable Name	Value
MC_Term.TermCode	
Button1	

OK Cancel Help

and STVRSTS.STVRSTS_VOICE_TYPE in(
and not (STUDENT_COURSE.SUBJECT =
or STUDENT_COURSE.SUBJECT = 'FST
or STUDENT_COURSE.SUBJECT = 'SAB

Connection: <default> Edit query properties

Measures

Count TOTAL CF RESIDENC REGISTER

Total by ROWS

TOTAL_CREDITS	RESIDENCY
Value	Value
0.00	0.00

<< Back Next >> Finish Cancel Help

Building an Argos OLAP example

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Build OLAP Data Cube

Configure the measures. Measures represent the numerical data such as price and quantity.

Available Fields

Count	STUDENT_STATUS_DESC	RESIDENCY_DESC	MAJ
ACADEMIC_PERIOD	ENROLLED_IND	TOTAL_CREDITS	COL
SUB_ACADEMIC_PERIOD	REGISTERED_IND	STUDENT_CLASSIFICATION_BOAP	COL
STUDENT_STATUS	RESIDENCY	MAJOR	DEG

Available Dimensions

Columns

Measures (check to make active)

Display Name

Method of Calculation

Display Format

☐ Distinct

Measures

<< Back Next >> Finish

Available Fields

Count	STUDENT_STATUS_DESC	RESIDENCY_DESC	MAJ
ACADEMIC_PERIOD	ENROLLED_IND	TOTAL_CREDITS	COL
SUB_ACADEMIC_PERIOD	REGISTERED_IND	STUDENT_CLASSIFICATION_BOAP	COL
STUDENT_STATUS	RESIDENCY	MAJOR	DEG

Measures (check to make active)

- ☒ Count
- ☐ TOTAL_CREDITS
- ☐ RESIDENCY
- ☐ REGISTERED_IND

Display Name

Count

Method of Calculation

Count

Display Format

0.00

☐ Distinct

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Build OLAP Data Cube

Configure the dimensions. Dimensions modify the drill-down of the data by allowing the user to group data precisely as needed.

Fields available to be used as dimensions

MAJOR_DESC	DEGREE	GENDER_DESC
COLLEGE	DEGREE_DESC	UGA_Reg_Ind
COLLEGE_DESC	GENDER	

Available Dimensions

ACADEMIC STUDENT STUDENT ENROLLED REGISTER
RESIDENCY RESIDENCY TOTAL_CH STUDENT MAJOR

Columns

Initial location of dimension (drag-n-drop to other tabs if needed)

Available Column Row

ACADEMIC_PERIOD
STUDENT_STATUS
STUDENT_STATUS_DESC
ENROLLED_IND
REGISTERED_IND
RESIDENCY
RESIDENCY_DESC
TOTAL_CREDITS
STUDENT_CLASSIFICATION_BOAP
MAJOR
MAJOR_DESC
COLLEGE
COLLEGE_DESC
DEGREE
DEGREE_DESC
GENDER
GENDER_DESC
UGA_Reg_Ind

Display Name

UGA_Reg_Ind

Data for this dimension comes ...

☒ directly from the Fact table
☐ from another data set

Default Sort Method

Sort by keyfield value

Forecasting

No forecasting

Measures

Count

<< Back Next >> Finish Cancel Help

Fields available to be used as dimensions

Count	STUDENT_STATUS	REGISTERED_IND	TOT
ACADEMIC_PERIOD	STUDENT_STATUS_DESC	RESIDENCY	STU
SUB_ACADEMIC_PERIOD	ENROLLED_IND	RESIDENCY_DESC	MAJ

Initial location of dimension (drag-n-drop to other tabs if needed)

Available Column Row

ACADEMIC_PERIOD
Count

Display Name

ACADEMIC_PERIOD (2)

Data for this dimension comes ...

☒ directly from the Fact table
☐ from another data set

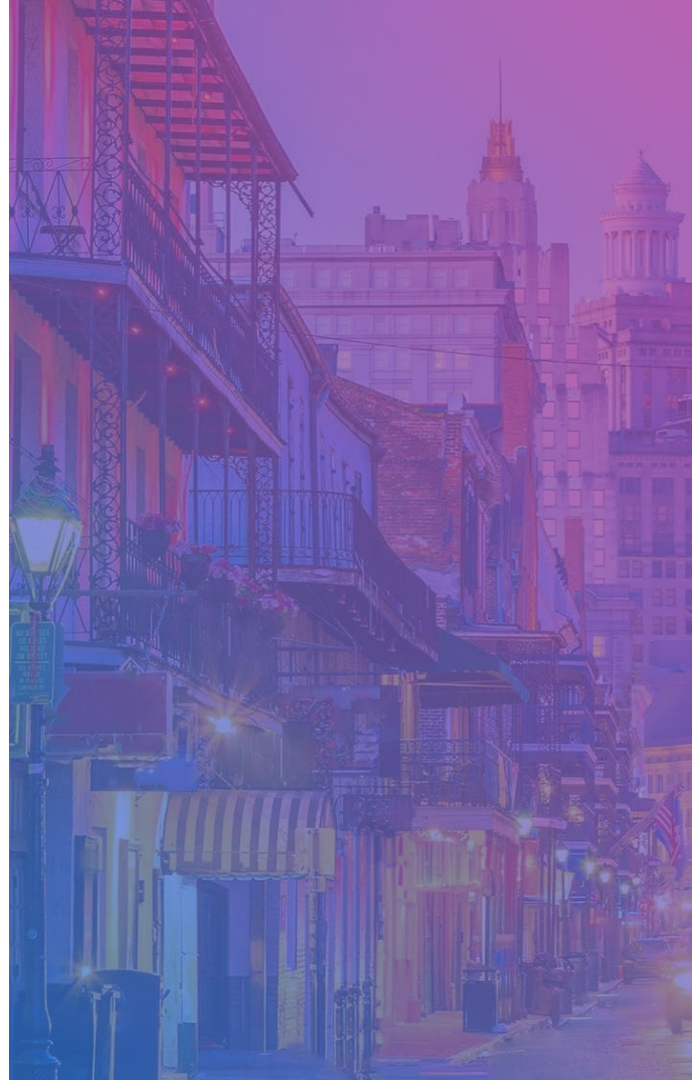
Default Sort Method

Sort by keyfield value

Forecasting

No forecasting

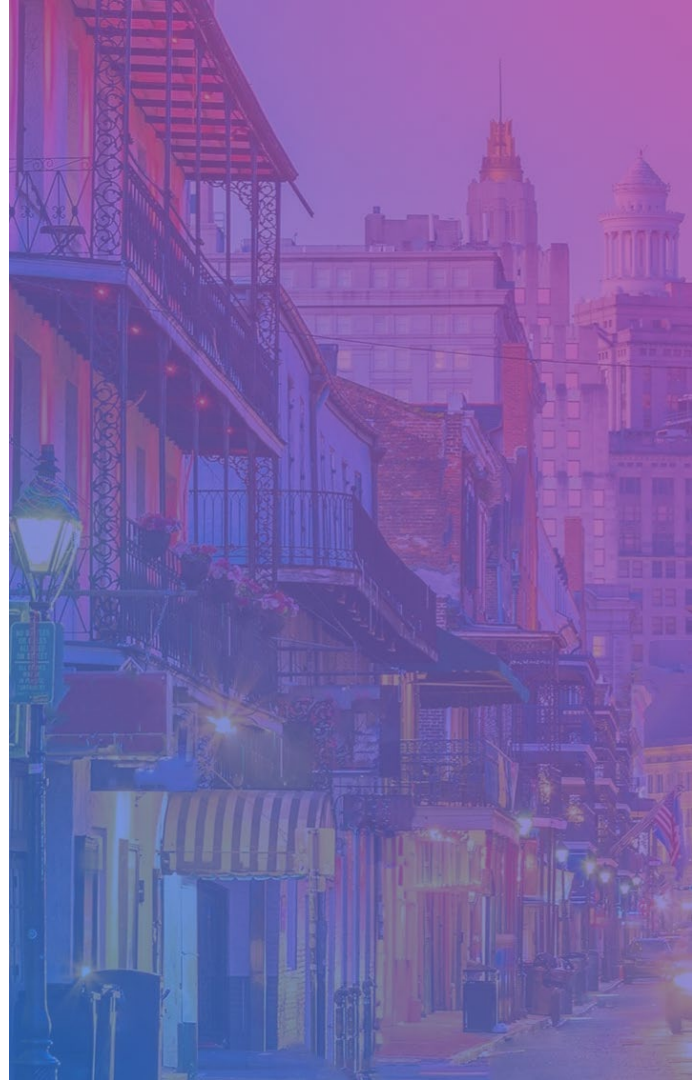
Common Pitfalls



Pitfalls

- There is a learning curve for using OLAPs
 - Understanding vocabulary and proper use (all the techniques we've demoed)
- Counts are off
 - Cartesians, bad queries, 'overlapping' data
- Granularity Problems
 - A special case of Cartesians.

Tips and Tricks



Tip #1: Keep your data set focused

BEFORE



AFTER



Tip #1: Keep your data set focused

Term:

DisplayTerm	TermCode
201402 - Spring 2014	201402
201405 - Summer 2014	201405
201408 - Fall 2014	201408
201502 - Spring 2015	201502
201505 - Summer 2015	201505
201508 - Fall 2015	201508

Available Dimensions

STUDENT_CLAS | COLLEGE | GENDER | GENDER_DESC | UGA_Reg_Ind | STUDENT_STAT | DEGREE_DESC | ACADEMIC_PER | STUDENT_STAT | RESIDENCY_DE | RESIDENCY_DE | MAJOR_DESC | COLLEGE_DESC | DEGREE | DEGREE_DESC | STUDENT_LEVE | STUDENT_LEVE | CAMPUS | CAMPUS_DESC | ACADEMIC_STA | ACADEMIC_STA | GRAD_YEAR_IN | GRAD_YEAR_IN | EXPECTED_GRA | MAJOR_DESC (| DEGREE (2)

Columns

ACADEMIC_PER | COLLEGE_DESC

STUDENT_STAT | RESIDENCY_DE

ACADEMIC_PERIOD (2)		201505							
COLLEGE_DESC (2)		Biomed and Health Sci Inst	College of Agr and Env Science	College of Arts and Sciences	College of Business	College of Education	College of Engineering	College of Env and Design	
STUDENT_STATUS_DESC (2)	RESIDENCY_DESC (3)	ID	ID	ID	ID	ID	ID	ID	
		Value	Value	Value	Value	Value	Value	Value	
Active		31881.00	24.00	1783.00	9747.00	6648.00	3864.00	1275.00	8.00
	Georgia Resident	26332.00	11.00	1457.00	7985.00	5659.00	3198.00	1150.00	189.00
	International Student	1536.00	1.00	140.00	543.00	222.00	185.00	55.00	40.00
	Non Georgia Resident	4013.00	12.00	186.00	1219.00	767.00	481.00	70.00	49.00
Graduated-Inactive		4866.00	0.00	204.00	1363.00	1080.00	609.00	55.00	46.00
	Georgia Resident	4065.00	0.00	169.00	1156.00	882.00	513.00	49.00	23.00
	International Student	182.00	0.00	12.00	53.00	34.00	30.00	3.00	5.00
	Non Georgia Resident	619.00	0.00	23.00	154.00	164.00	66.00	3.00	18.00
Inactive		1394.00	0.00	77.00	524.00	176.00	168.00	47.00	9.00
	Georgia Resident	1084.00	0.00	65.00	456.00	145.00	135.00	44.00	7.00
	International Student	115.00	0.00	4.00	16.00	8.00	3.00	2.00	0.00
	Non Georgia Resident	195.00	0.00	8.00	52.00	23.00	30.00	1.00	2.00
No Show		133.00	0.00	3.00	40.00	19.00	38.00	1.00	1.00
	Georgia Resident	103.00	0.00	1.00	36.00	13.00	27.00	1.00	0.00
Total by COLUMNS		38296.00	24.00	2069.00	11685.00	7927.00	4679.00	1379.00	334.00

Measures

ID

Tip #2: 'Pre-process' the data in your query.



Tip #3: Add/create your own Dimensions

- Creating a custom dimension from an existing field.
- For example: Converting DATE field to year/Month.
 - `TO_CHAR (SYSDATE, 'mm-Month')` -> 01-January
 - `TO_CHAR (ACTIVITY_DATE, 'YYYY')` -> 2018

Tip #4: Hide unnecessary measures

Available Dimensions

ENROLLED_IND ▼ REGISTERED_IND ▼ RESIDENCY ▼ RESIDENCY_DE ▼ SUB_ACADEMIC ▼ TOTAL_CREDIT ▼ STUDENT_CLAS ▼ GENDER ▼ GENDER_DESC ▼ UGA_Reg_Ind ▼

STUDENT_STAT ▼ Count ▼

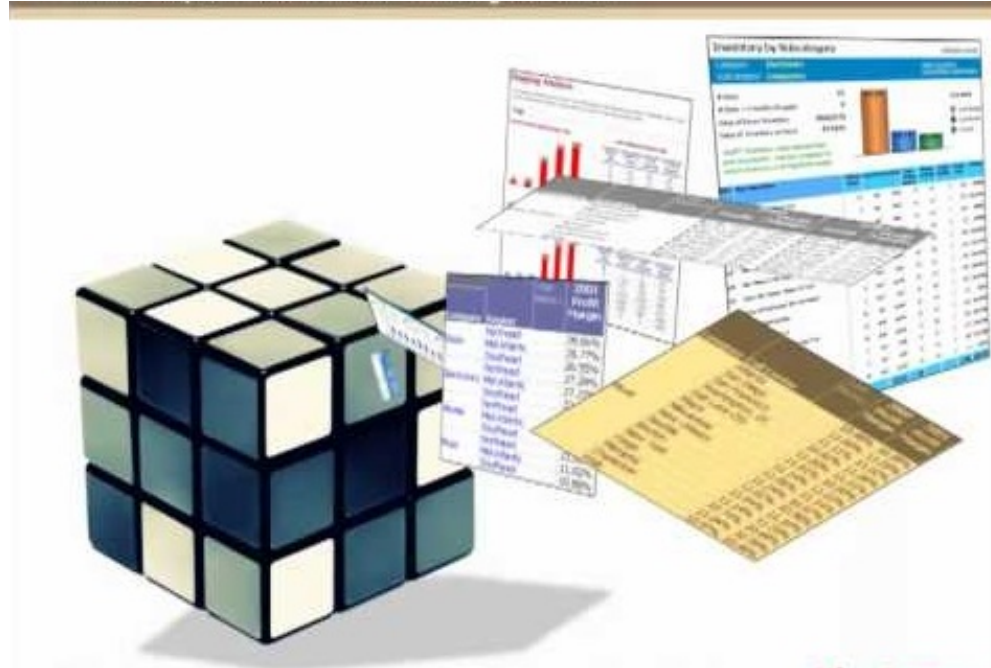
Columns

ACADEMIC_PER ▼

COLLEGE (2) ▼	EMIC_PERIOD (2)	201608	201708	201808	Total by ROWS
COLLEGE_DESC ▼	COLLEGE (2)	Count	Count	Count	Count
DEGREE ▼		Value	Value	Value	Value
DEGREE_DESC ▼	00	479.00	600.00	427.00	1506.00
	AE	2183.00	2181.00	2345.00	6709.00
MAJOR ▼	AS	12527.00	12736.00	13129.00	38392.00
MAJOR_DESC ▼	BH	37.00	39.00	33.00	109.00
	BI	22.00	28.00	40.00	90.00
	BU	9015.00	9404.00	9797.00	28216.00
	EC	218.00	239.00	241.00	698.00
	ED	4790.00	4627.00	4737.00	14154.00
	EN	2099.00	2296.00	2480.00	6875.00
	EV	406.00	430.00	394.00	1230.00
	FC	1647.00	1799.00	1866.00	5312.00
	FR	546.00	546.00	596.00	1688.00
	GR	1.00	4.00	5.00	10.00
	HI	0.00	94.00	97.00	191.00
	JO	2287.00	2335.00	2264.00	6886.00
	LW	634.00	633.00	710.00	1977.00
	Unl	1000.00	1000.00	1000.00	3000.00
Total by COLUMNS		41969.00	43269.00	44455.00	129693.00

Measures

Count ▼



Tip #5: Extract the data

Extract to Excel – Step 1

Term: DisplayTerm TermCode

201402 - Spring 2014	201402
201405 - Summer 2014	201405
201408 - Fall 2014	201408
201502 - Spring 2015	201502
201505 - Summer 2015	201505
201508 - Fall 2015	201508

Available Dimensions

ID SUB_ACADEMIC ENROLLED_IND REGISTERED_IN RESIDENCY RESIDENCY_DE TOTAL_CREDIT STUDENT_CLAS MAJOR MAJOR_DESC COLLEGE COLLEGE_DESC DEGREE DEGREE_DESC GENDER GENDER_DESC UGA_Reg_Ind STUDENT_STAT

Columns

ACADEMIC_PER

STUDENT_STAT

ACADEMIC_PERIOD	201505	Total by ROWS
STUDENT_STATUS_DESC	ID	ID
	Value	Value
Active	31881.00	31881.00
Graduated-Inactive	4866.00	4866.00
Inactive	1394.00	1394.00
No Show	133.00	133.00
Registrar-Inactive	22.00	22.00
Total by COLUMNS	38296.00	38296.00

Measures

ID

Export to Excel

Saved OLAP Settings

Undo Ctrl+Z

Cut Ctrl+X

Copy Ctrl+C

Paste Ctrl+V

Print ...

Select All Ctrl+A

Extract to Excel - Step 2

Term:

DisplayTerm	TermCode
201402 - Spring 2014	201402
201405 - Summer 2014	201405
201408 - Fall 2014	201408
201502 - Spring 2015	201502
201505 - Summer 2015	201505
201508 - Fall 2015	201508

☒ Available Dimensions

ID SUB_ACADEMIC ENROLLED_IND REGISTERED_IN RESIDENCY

MAJOR_DESC COLLEGE COLLEGE_DESC DEGREE DEGREE_DESC

☒ Columns

ACADEMIC_PERIOD

☒ STUDENT_STAT

ACADEMIC_PERIOD	201505	Total by ROWS
STUDENT_STATUS_DESC	ID	ID
	Value	Value
Active	31881.00	31881.00
Graduated-Inactive	4866.00	4866.00
Inactive	1394.00	1394.00
No Show	133.00	133.00
Registrar-Inactive	22.00	22.00
Total by COLUMNS	38296.00	38296.00

☒ Measures

ID

Save Exported File As

Save in: Cohesion2018

Quick access

Desktop

Libraries

This PC

Network

No items match your search.

Name

Date modified

Type

File name: StudentCountByStudentStatus

Save as type: Excel Workbook (*.xls, *.xlsx)

Save

Cancel

Extract to Excel – Step 3

[illegible]

Tip #6: Using Percentages



Tip #6: Using Percentages

Term: DisplayTerm TermCode
201602 - Spring 2016 201602
201605 - Summer 2016 201605
201608 - Fall 2016 201608
201702 - Spring 2017 201702
201705 - Summer 2017 201705
201708 - Fall 2017 201708
201802 - Spring 2018 201802

Run OLAP

Available Dimensions

ID NAME SUB_ACADEMIC ENROLLED_IND REGISTERED_IND RESIDENCY RESIDENCY_DE TOTAL_CREDIT STUDENT_CLAS MAJOR MAJOR_DESC COLLEGE COLLEGE_DESC

DEGREE DEGREE_DESC GENDER GENDER_DESC UGA_Reg_Ind STUDENT_STAT STUDENT_STAT COLLEGE (2)

Columns

ACADEMIC_PER

COLLEGE_DESC

EMIC_PERIOD (2)	201505	201605	201705	Total by ROWS
COLLEGE_DESC (2)	ID	ID	ID	ID
	Value	Value	Value	Value
College of Arts and Sciences	11685.00	11484.00	11298.00	34467.00
College of Jour and Mass Comm	2125.00	2185.00	2174.00	6484.00
College of Education	4679.00	4778.00	4412.00	13869.00
College of Agr and Env Science	2069.00	2042.00	2036.00	6147.00
School of Forestry and Nat Res	569.00	551.00	514.00	1634.00
College of Public Health	901.00	883.00	901.00	2685.00
College of Business	7927.00	8566.00	8737.00	25230.00
College of Pharmacy	864.00	923.00	936.00	2723.00
No College Designated	539.00	554.00	531.00	1624.00
College of Veterinary Medicine	648.00	680.00	704.00	2032.00
School of Pub and Intl Aff	1442.00	1459.00	1447.00	4348.00
College of Fam and Consumr Sci	1740.00	1764.00	1699.00	5203.00
School of Ecology	175.00	201.00	217.00	593.00
School of Law	608.00	609.00	578.00	1795.00
College of Env and Design	334.00	337.00	338.00	1009.00
School of Social Work	578.00	601.00	594.00	1773.00
Total by COLUMNS	38296.00	39355.00	39204.00	116855.00

Measures

ID

Tip #6: Using Percentages

Term: DisplayTerm TermCode
201602 - Spring 2016 201602
201605 - Summer 2016 201605
201608 - Fall 2016 201608
201702 - Spring 2017 201702
201705 - Summer 2017 201705
201708 - Fall 2017 201708
201802 - Spring 2018 201802

Run OLAP

Available Dimensions
ID NAME SUB_ACADEMIC ENROLLED_IND REGISTERED_IND RESIDENCY RESIDENCY_DE TOTAL_CREDIT STUDENT_CLAS MAJOR MAJOR_DESC COLLEGE COLLEGE_DESC
DEGREE DEGREE_DESC GENDER GENDER_DESC UGA_Reg_Ind STUDENT_STAT STUDENT_STAT COLLEGE (2)

Columns
ACADEMIC_PER

COLLEGE_DESC

EMIC_PERIOD (2)	201505	201605	201705	Total by ROWS
COLLEGE_DESC (2)	ID	ID	ID	ID
	Value	Value	Value	Value
College of Arts and Sciences	11685.00	11484.00	11298.00	34467.00
College of Jour and Mass Comm	2125.00	2185.00	2174.00	6484.00
College of Education	4679.00	4778.00	4412.00	13869.00
College of Agr and Env Science	2069.00	2042.00	2036.00	6147.00
School of Forestry and Nat Res	569.00	551.00	514.00	1634.00
College of Public Health	901.00	883.00	901.00	2685.00
College of Business	7927.00	8566.00	8737.00	25230.00
College of Pharmacy	864.00	923.00	936.00	2723.00
No College Designated	539.00	554.00	531.00	1624.00
College of Veterinary Medicine	648.00	680.00	704.00	2032.00
School of Pub and Intl Aff	1442.00	1459.00	1447.00	4348.00
College of Fam and Consumr Sci	1740.00	1764.00	1699.00	5203.00
School of Ecology	175.00	201.00	217.00	593.00
School of Law	608.00	609.00	578.00	1795.00
College of Env and Design	334.00	337.00	338.00	1009.00
School of Social Work	578.00	601.00	594.00	1773.00
Total by COLUMNS	38296.00	39355.00	39204.00	116855.00

Measures
ID

Σ

Tip #6: Using Percentages

The screenshot shows the 'Measure manager' window with the following measures listed:

- Count
- Value
- Percents by COLUMN** (highlighted with a red arrow)
- Percents by ROW
- Rank[Column]
- Rank[Row]
- Difference with previous Column
- Difference with previous Row
- Sum with previous Column
- Sum with previous Row
- Running Total by Column
- Running Total by Row
- % by c group
- % by r group
- TOTAL_CREDITS
- RESIDENCY
- REGISTERED_IND

The 'General' tab is selected, showing the following settings:

- Calculation type: Count
- Display caption: Count
- Value representation: Cell
- Operation: (empty)

The 'OK' button is highlighted with a red arrow at the bottom right of the window.

Tip #6: Using Percentages

Ar Testing "New DataBlock OLAP Shows Percentages"

Term:

DisplayTerm

TermCode

201602 - Spring 2016201602

201605 - Summer 2016201605

201608 - Fall 2016201608

201702 - Spring 2017201702

201705 - Summer 2017201705

201708 - Fall 2017201708

201802 - Spring 2018201802

<

>

Run OLAP

Available Dimensions

IDNAMESUB_ACADEMICENROLLED_INREGISTERED_INRESIDENCYRESIDENCY_DETOTAL_CREDITSTUDENT_CLASMAJORMAJOR_DESCCOLLEGECOLLEGE_DESCDEGREEDEGREE_DESCGENDERGENDER_DESCUGA_Reg_IndSTUDENT_STAT

Columns

ACADEMIC_PER

COLLEGE (2)

COLLEGE_DESC (2)

ACADEMIC_PERIOD (2)

STUDENT_STATUS...

201505

201605

201705

Total by ROWS

COLLEGE_DESC

STUDENT_STAT

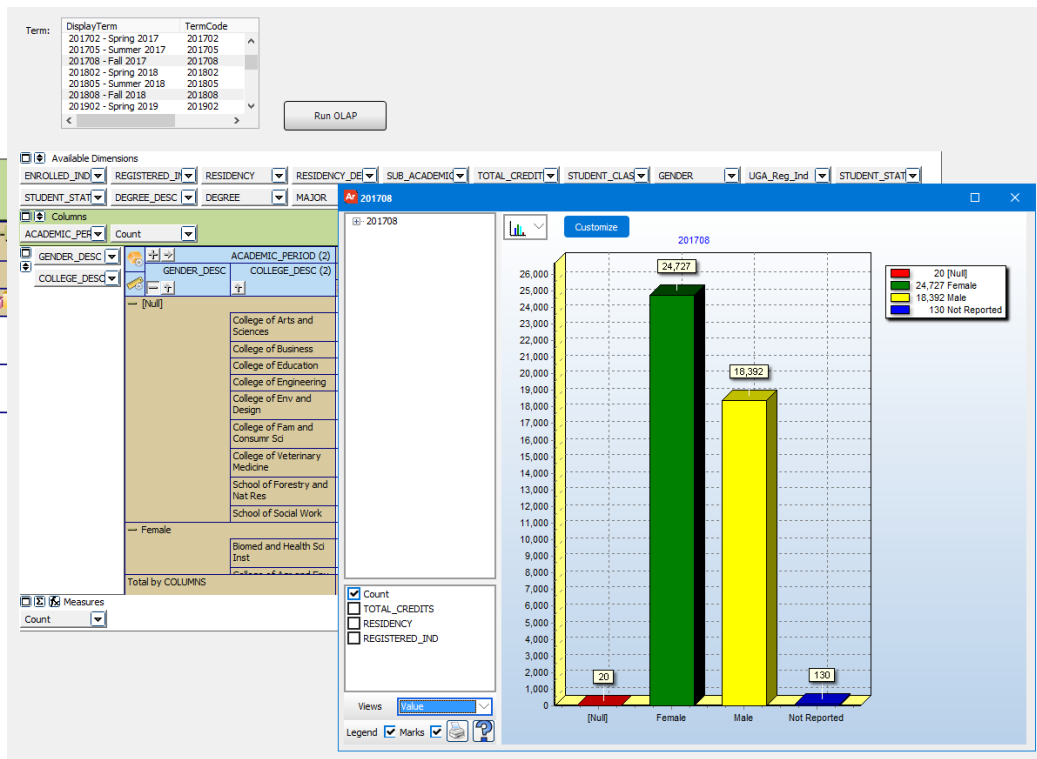
	ID	Value	Percents by COLUMN	ID	Value	Percents by COLUMN	ID	Value	Percents by COLUMN	ID	Value	Percents by COLUMN
00		539.00	1.41%		554.00	1.41%		531.00	1.33%		1624.00	1.39%
AE		2069.00	5.40%		2042.00	5.19%		2036.00	5.19%		6147.00	5.26%
AS	College of Arts and Sciences	11685.00	30.51%		11484.00	29.18%		11298.00	28.82%		34467.00	29.50%
	Active	9747.00	25.45%		9629.00	24.47%		9481.00	24.18%		28857.00	24.69%
	Graduated-Inactive	1363.00	3.56%		1306.00	3.32%		1304.00	3.33%		3973.00	3.40%
	Inactive	524.00	1.37%		508.00	1.29%		471.00	1.20%		1503.00	1.29%
	No Show	40.00	0.10%		41.00	0.10%		40.00	0.10%		121.00	0.10%
	Registrar-Inactive	11.00	0.03%		0.00	0.00%		2.00	0.01%		13.00	0.01%
BH		24.00	0.06%		34.00	0.09%		37.00	0.09%		95.00	0.08%
BI		10.00	0.03%		15.00	0.04%		22.00	0.06%		47.00	0.04%
BU		7927.00	20.70%		8566.00	21.77%		8737.00	22.29%		25230.00	21.59%
EC		175.00	0.46%		201.00	0.51%		217.00	0.55%		593.00	0.51%
ED		4679.00	12.22%		4778.00	12.14%		4412.00	11.25%		13869.00	11.87%
EN	College of Engineering	1379.00	3.60%		1689.00	4.29%		1951.00	4.98%		5019.00	4.30%
	Active	1275.00	3.33%		1563.00	3.97%		1715.00	4.37%		4553.00	3.90%
	Graduated-Inactive	55.00	0.14%		62.00	0.16%		165.00	0.42%		282.00	0.24%
	Inactive	47.00	0.12%		60.00	0.15%		64.00	0.16%		171.00	0.15%
	No Show	1.00	0.00%		4.00	0.01%		7.00	0.02%		12.00	0.01%
	Registrar-Inactive	1.00	0.00%		0.00	0.00%		0.00	0.00%		1.00	0.00%
EV		334.00	0.87%		337.00	0.86%		338.00	0.86%		1009.00	0.86%
FC		1740.00	4.54%		1764.00	4.48%		1699.00	4.33%		5203.00	4.45%
FR		569.00	1.48%		551.00	1.40%		514.00	1.31%		1634.00	1.40%
Total by COLUMNS		38296.00	100.00%		39355.00	100.00%		39204.00	100.00%		116855.00	100.00%

Measures

ID

Tip #7: Charting from the OLAP

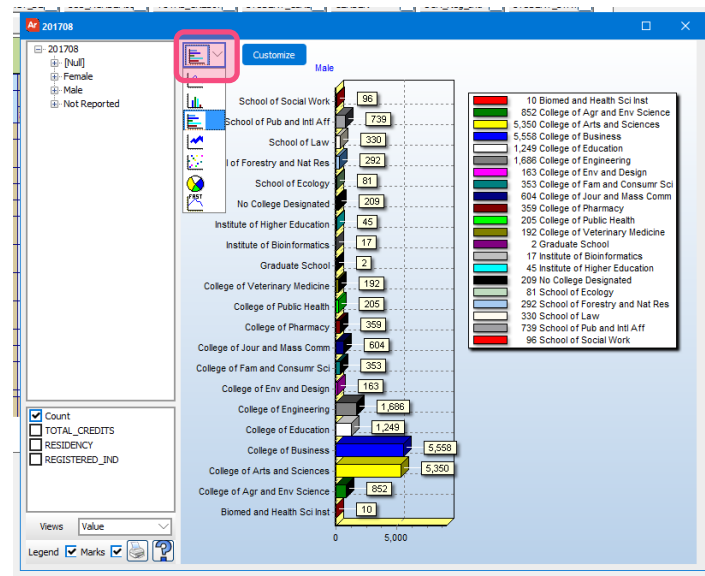
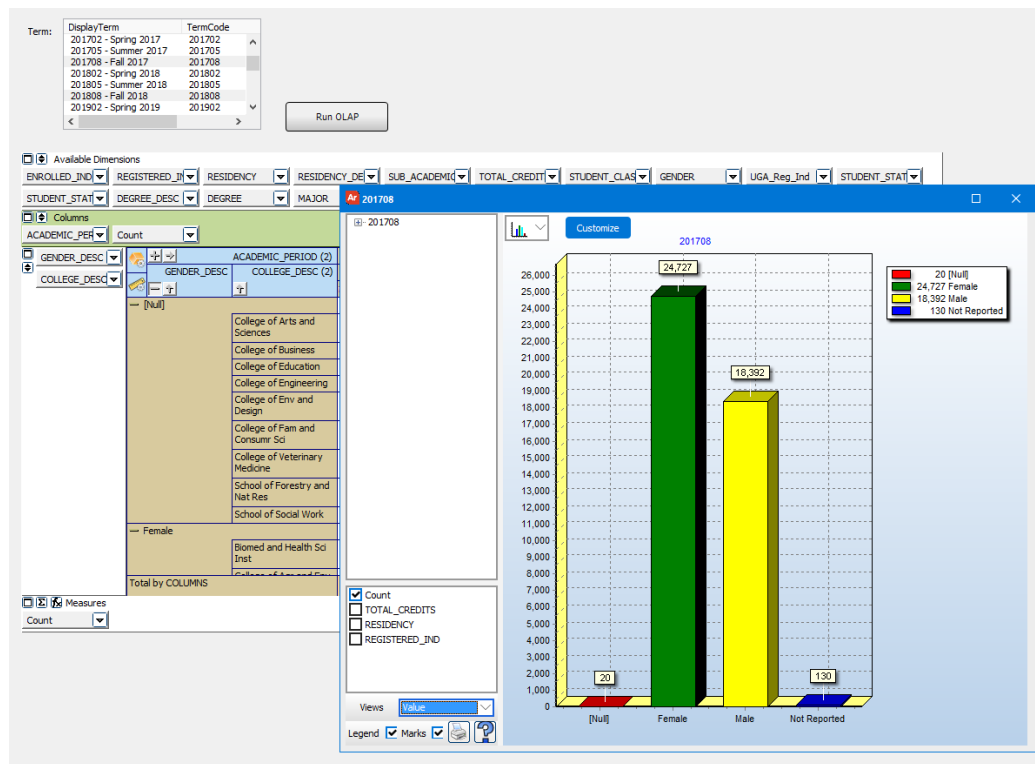
Columns			
ACADEMIC_PER	Count		
COLLEGE_DESC	IC_PERIOD (2)	201608	
COLLEGE (2)	COLLEGE_DESC (2)	Count	
DEGREE		Value	
DEGREE_DESC	Biomed and Health Sci Inst	37.00	
MAJOR	College of Agr and Env Science	2183.00	
MAJOR_DESC	College of Arts and Sciences	12527.00	



Tip #7: Charting from the OLAP

evisions
conference

#Evisions19



Tip #8: End User Filtering

Dimension editor : COLLEGE_DESC (2)

Caption
COLLEGE_DESC (2)

☐ Enable prev. forecast value Forecasting method
☐ Enable next forecast value Triple Exponential Smoothing

Items count: 20

College of Fam and Consumr Sci
College of Jour and Mass Comm
College of Pharmacy
College of Public Health
Graduate School
Institute of Bioinformatics
Institute of Higher Education
No College Designated
School of Ecology
School of Forestry and Nat Res
School of Pub and Intl Aff
School of Social Work
VP Instruction

Items count: 20

Buttons: [Eye] [Filter] [Group] [Sort] [Refresh] [Save] [Cancel] [Help]

Columns

ACADEMIC_PER Count

COLLEGE (2)

COLLEGE_DESC

DEGREE

DEGREE_DESC

MAJOR

MAJOR_DESC

00

AE
AS
BH
BI
BU
EC
ED
EN
EV
FC
FR
GR
HI

Measures
Count

Columns	ACADEMIC_PER	Count				
COLLEGE (2)	IC_PERIOD (2)	201608	201708	201808	Total by ROWS	
COLLEGE_DESC	COLLEGE (2)	Count	Count	Count	Count	
DEGREE	Value	Value	Value	Value	Value	
DEGREE_DESC	AE	2183.00	2181.00	2345.00	6709.00	
MAJOR	AS	12527.00	12736.00	13129.00	38392.00	
MAJOR_DESC	BH	37.00	39.00	33.00	109.00	
	BI	22.00	28.00	40.00	90.00	
	BU	9015.00	9404.00	9797.00	28216.00	
	EC	218.00	239.00	241.00	698.00	
	ED	4790.00	4627.00	4737.00	14154.00	
	EN	2099.00	2296.00	2480.00	6875.00	
	EV	406.00	430.00	394.00	1230.00	
	FC	1647.00	1799.00	1866.00	5312.00	
	FR	546.00	546.00	596.00	1688.00	
	GR	1.00	4.00	5.00	10.00	
	HI	0.00	94.00	97.00	191.00	
	JO	2287.00	2335.00	2264.00	6886.00	
	LW	634.00	633.00	710.00	1977.00	
	PB	1044.00	1106.00	1089.00	3239.00	
Total by COLUMNS		41490.00	42669.00	44028.00	128187.00	
Total by COLUMNS		41969.00	43269.00	44455.00	129693.00	

Tip #9: Saved States

A version of the OLAP can be saved for future use. These saved states can be created in the schedule

Warning!!

Edit Schedule

Configure the tasks that this scheduled report will perform.

General Schedule **Tasks** Events API

Available tasks

- Execute the report
- Save execution state

Edit the "Save Execution State" Task

Maximum number to keep: 10

Title: %%Now()%%

Buttons: OK, Cancel, Help (for sub-dialog); Test, OK, Close, Help (for main dialog)

SUMMARY

- 1 OLAP Overview
- 2 Argos Demonstration
- 3 Creating an OLAP
- 4 Common Pitfalls
- 5 Tips and Tricks
- 6 Summary
- 7 Q & A

Questions & Answers

A stylized, painterly illustration of a city street scene, likely New York City, featuring multi-story buildings, a street lamp, and a striped awning. The image is overlaid with a semi-transparent purple and blue gradient.

Q&A



THANK YOU!

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evisions
conference

Presentation notes - order

1 Intro - both

7 Agenda - John

8 OLAP Overview - John

12 Argos Demonstration - Andrea

18 terms - Andrea

19 Dimensions - John

21 Measures - John

3 Creating an OLAP - John

24 design - John

28 build - Andrea

38 Common Pitfalls- John

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6-9 Andrea

59 Summary - Andrea

60 Q & A