

# **CCC Data Warehouse and the Student Journey**

April 29, 2025

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# Agenda

**CCC Data Overview**

**The Platform**

**The Data**

**Student Journey Data**

**Discussion/Questions**

**Accessing the Data Warehouse**

# CCC Data Overview



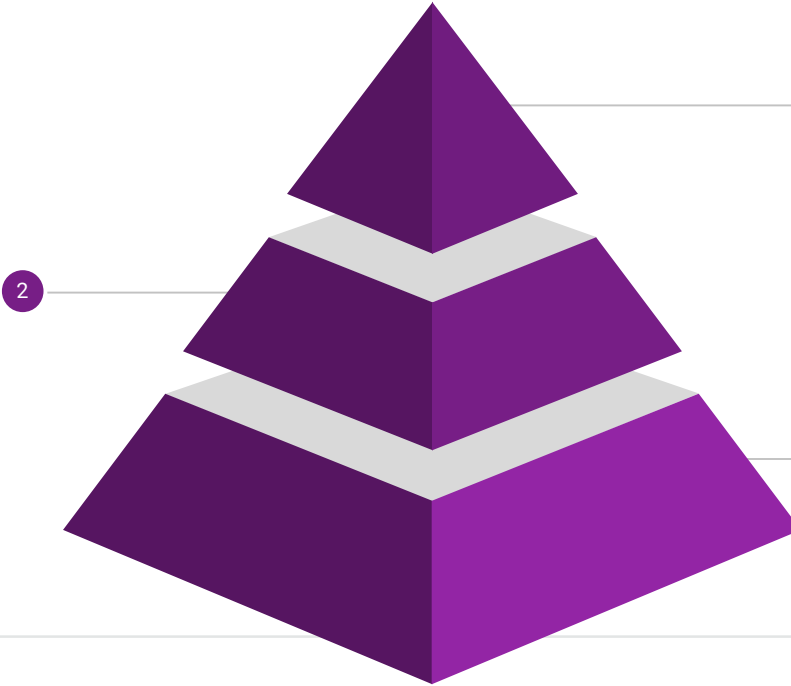
California Community Colleges  
Chancellor's Office

Supported by the Data Management Grant (DMG) initiative from the California Community Colleges Chancellor's Office, CCC Data provides our Colleges with access to critical data used to support institutional decision-making aligned with the CCCCCO Vision 2030.

# Developing a Data Platform

## Aggregate Data

Aggregated data from disparate sources to bring together multiple sources of systemwide data and enable access to college and district Researchers



## Develop Architecture

Developed on AWS which offers flexible, highly scalable architecture, robust security and 24/7 Monitoring

## Enhance Usability

Develop datasets using canonical and dimensional modeling to increase usability and unlock data insights for the CCC Research community

# Shared Governance

## CCC Chancellor's Office

CCC Data developed under the direction of the CCCCCO, bi-weekly meeting between CCCTC & CCCCCO Research

## Data Warehouse Advisory Group

DW Advisory Group comprised of individuals named by the RP Group, along with CCCCCO and CCCTC staff

## Discussions with Researchers

DW Product Manager and Architect 1:1 meetings with college & district researchers

# How CCC Data is Utilized

## District and College Researchers

CCC Data Warehouse access to District and College Researchers and supporting IT staff.

- Connect with systemwide data sources
- Connect BI tools
- Produce reporting

## CCCCO Researchers and Consultants

CCC Data Warehouse and select Data Lake access to CCCCCO Researchers and Consultants.

- Access CCCApply and other systemwide data
- Combine datasets to answer questions
- Produce reporting

## Select CCC Data Partners

Limited access authorized by CCCCCO to identified Systemwide Initiatives and CCC Data Partners.

- CVC Report supporting MIS submission
- Facilitate secure data transfer in production of dashboards

# The Data

		Direct Connect	Report Server	Comments
1	CCCApply Standard and Noncredit Application	✓	✓	<ul style="list-style-type: none"><li>Secure access to PII, including fields encrypted in CCCApply Report Center</li><li>One of top 3 viewed datasets in DW</li></ul>
2	CCCApply International Application	✓	✓	<ul style="list-style-type: none"><li>Data from the International application</li></ul>
3	CCCApply Promise Grant Application	✓	✓	<ul style="list-style-type: none"><li>Data from the Promise Grant application</li></ul>
4	Multiple Measures Placement Service (MMPS)	✓	✓	<ul style="list-style-type: none"><li>Placement recommendations, independent of utilization of MMPS</li></ul>
5	MyPath	✓	✓	<ul style="list-style-type: none"><li>Advisor card data</li><li>Advisor usage data</li><li>Audit table</li></ul>
6	Chancellor's Office Curriculum Inventory (COCI)	✓	✓	<ul style="list-style-type: none"><li>Data from the Curriculum Inventory System</li></ul>

# The Data

		Direct Connect	Report Server	Comments
7	Course ID Numbering System (C-ID)	✓	✓	<ul style="list-style-type: none"><li>• Data from Course ID Numbering system</li></ul>
8	Canvas	✓	✗	<ul style="list-style-type: none"><li>• Requires district to “opt-in”</li><li>• One of top 3 viewed datasets in DW</li><li>• Leveraging Instructure CD2 API</li></ul>
9	SuperGlue Fraud Data	✓	✓	<ul style="list-style-type: none"><li>• Fraud data identified by spam filter, or</li><li>• Reported by colleges</li><li>• Available through SuperGlue and in DW</li></ul>
10	CO-MIS	✓	✗	<ul style="list-style-type: none"><li>• Made available to colleges with CCC Data 3.0 release</li><li>• Post processed MIS data</li></ul>
11	Student Journey	✓	✗	<ul style="list-style-type: none"><li>• Brings together tables from CCCApply &amp; CO-MIS</li><li>• Linked by a common identifier</li></ul>



# Requesting Access & Support Resources

- To request access to the Data Warehouse:  
[cems@ccctechcenter.org](mailto:cems@ccctechcenter.org)
- Mark Cohen, Product Manager  
[mcohen@cccTechCenter.org](mailto:mcohen@cccTechCenter.org)



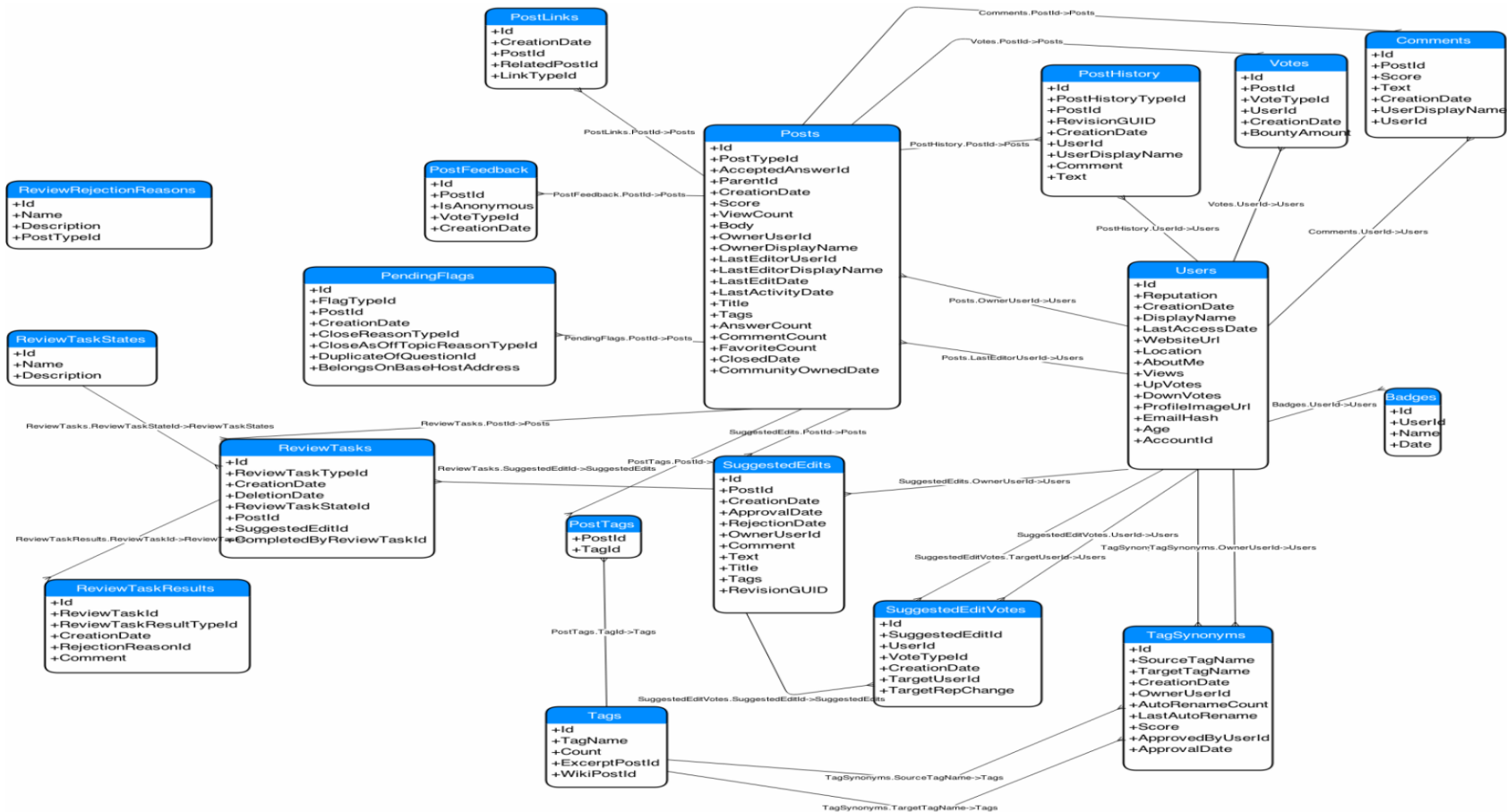
# Student Journey Data

- Unified Data Source
- Canonical/Dimensional Modeling Approach
- Adaptive & Research-Driven
- Enhanced Usability & Accessibility
- Deeper Insights & Correlations
- Simplify Queries

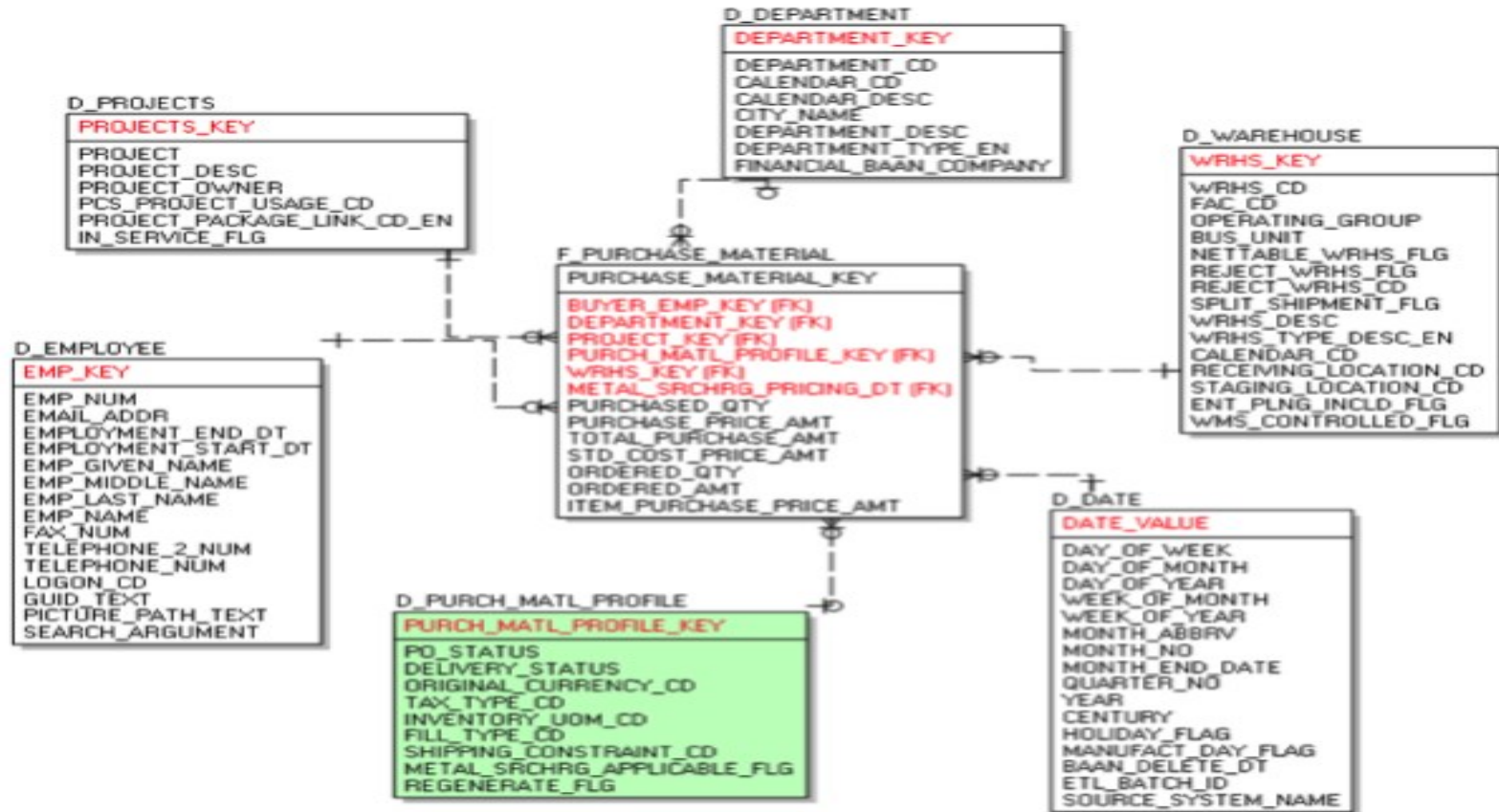
# Student Journey Data Mart

- The Student Journey Data Mart's first release organizes data from the individual college's MIS submissions and creates a set of tables that contain aggregatable values (facts) and dimensional values.
  - In order to provide meaningful dimensional attributes, the Technology Center has translated MIS codes to meaningful values.
- The Student Journey Data Mart is an evolving model that will continue to be enriched in response to user feedback
- It is intended to enable the creation of self-serve reporting
- Removes the complexity of querying a 3nf model

# Complex Data Model - 3nf



# Simplified Data Model - Star Schema



# Student Journey Data Mart

- The development of a useable Star Schema requires that descriptive information is available for each dimensional element
- The MIS database does provides only codes, not descriptions
- In order to remedy this translations from the MIS submission instructions were extracted and converted into database tables

# MIS Codes for Dimension Creation

code	description	identifier
A	Obtain an associate degr...	ss01
B	Transfer to a baccalaurea...	ss01
C	Obtain a two-year associa...	ss01
E	Earn a career technical c...	ss01
F	Discover / formulate care...	ss01
G	Prepare for a new career ...	ss01
H	Advance in current job / c...	ss01
I	Maintain certificate or lice...	ss01

# Conformed Dimensions

- College
- Term
- District
- Courses



# Conformed Dimensions - College

district_id	name	address1	address2
1	Cuyamaca College	900 Rancho San Diego Pky	""
39	Clovis Community College	10309 N. Willow Ave	""
27	De Anza College	21250 Stevens Creek Blvd.	Cupertino, CA 9
27	Foothill College	12345 El Monte Rd	""
28	Ohlone College	43600 Mission Blvd	""
73	CCCTC College B	1765 Prince Road	Suite D-486
52	ITV/The Weekend College	13356 Eldridge Ave	Sylmar, CA 9134
73	South Bay JBL Consortium	3536 Butte Campus Drive	""
73	FAUX Allan Hancock	1765 Prince Road	Suite D-9338741

# Conformed Dimension - District

name	address1	address2
GROSSMONT-CUYAMACA	8800 Grossmont College ...	""
IMPERIAL	380 E. Aten Road	""
MIRA COSTA	One Barnard Drive	""
PALOMAR	1140 W. Mission Road	San Marcos, CA 92069
SAN DIEGO	3375 Camino Del Rio S	""
SOUTHWESTERN	900 Otay Lakes Road	""
BUTTE	3536 Butte Campus Drive	""
FEATHER RIVER	570 Golden Eagle Ave	""
LASSEN	Hwy 139	""

# Conformed Dimensions - Term

term_year	term_number	term_name
1992	5	Summer Term
1992	6	Summer Quarter
1992	7	Fall Semester
1992	8	Fall Quarter
1993	2	Winter Quarter
1993	3	Spring Semester
1993	4	Spring Quarter
1993	5	Summer Term
1993	6	Summer Quarter

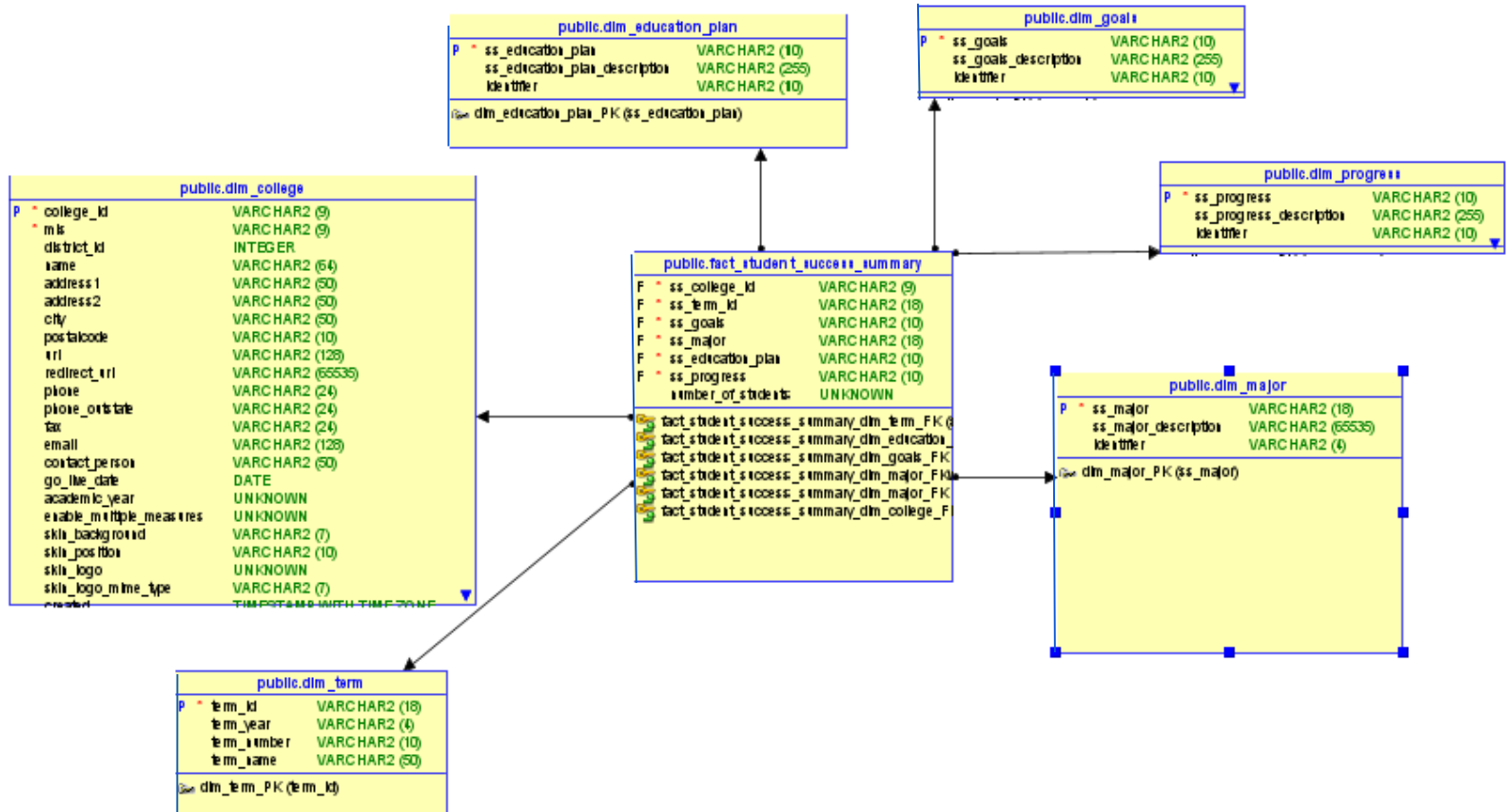
# Conformed Dimensions - Courses

cb_college_id	cb_term_id	cb_course_id	cb_control_num
021	003	ANTH120	CCC00016617
021	003	ANTH130	CCC00002866
021	003	ART 100	CCC00006449
021	003	ART 120	CCC00029136
021	003	ART 121	CCC00011817
021	003	ART 124	CCC00030360
021	003	ART 125	CCC00013064
021	003	ART 140	CCC00024097
021	003	ART 141	CCC00009380

# Data Marts

- Student Success
- Student Production
- Financial Aid Participation
- Student Awards
- Student Enrollment

# Student Success Mart



# Student Success - Major

ss_major	ss_major_description	identifie
069900	Other Media and Commu...	sp01
095240	Glazing	sp01
120000	Health	sp01
130900	Gerontology	sp01

# Student Success - Education Plan

ss_education_plan	ss_education_plan_description	identifier
A	Student developed an abbreviated credit education plan.	ss09
C	Student developed a comprehensive credit education plan.	ss09
B	Student developed an abbreviated and a comprehensive credit education plan.	ss09
N	Student did not complete a credit education plan during the term.	ss09



# Student Success - Goals

ss_goals	ss_goals_description	identifier
A	Obtain an associate degree and transfer to a baccalaureate granting institution	ss01
B	Transfer to a baccalaureate granting institution without an associate degree	ss01
C	Obtain a two-year associate degree without transfer	ss01
E	Earn a career technical certificate without transfer	ss01
F	Discover / formulate career interests, plans, goals	ss01

# Student Success - Progress

ss_progress	ss_progress_description	≡	ident
A	Student received academic or progress probation support intervention/service.		ss10
C	Student facing dismissal received support service.		ss10
N	Student did not receive academic/progress probation or dismissal support service.		ss10

# Student Success - Sample Power BI Report

[Back to report](#)

SUM OF NUMBER\_OF\_STUDENTS BY NAME AND SS\_MAJOR\_DESCRIPTION

### s\_major\_description

► (Blank)

## Academic Guidance

Accounting

## Adapted Physical Education

Administration of Justice

## Administrative Medical Assisting

Advertising

## ► Aeronautical and Aviation Technology

Agricultural Pest Control Adviser an...

► Agricultural Power Equipment Techn...

## ► Agriculture Business, Sales and Service

► Agriculture Technology and Sciences...

### ► Aircraft Electronics (Avionics)

## Aircraft Fabrication

## Alcohol and Controlled Substances

Alternative Fuels and Advanced Tran...

► American Studies

name

Mt San Antonio College

East Los Angeles College

San Diego Mesa College

Santa Monica College

American River College

San Diego City College

Pasadena City College

Fresno City College

Sacramento City College

(Blank)

Cerritos College

Palomar College

El Camino College

Long Beach City College

Los Angeles City College

Los Angeles Pierce Coll...

City College of San Fra...

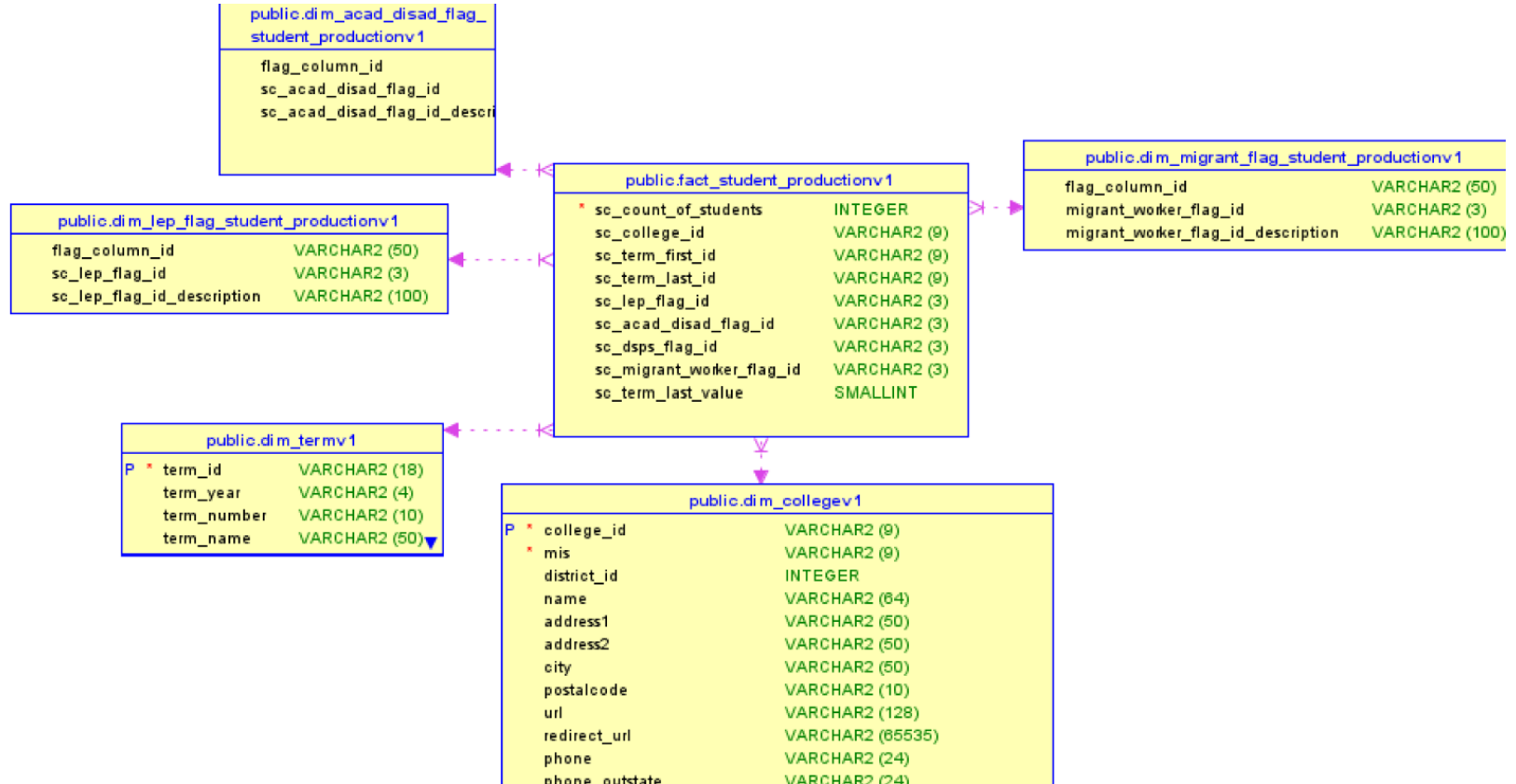
Bakersfield College

Laney College

College of Alameda

Merritt College

# Student Production Mart



# Student Production - Migrant Worker

flag_column_id	migrant_worker_flag_id	migrant_worker_flag...
sc_migrant_worker	M	Migrant Worker
sc_migrant_worker	N	Not a Migrant Worker

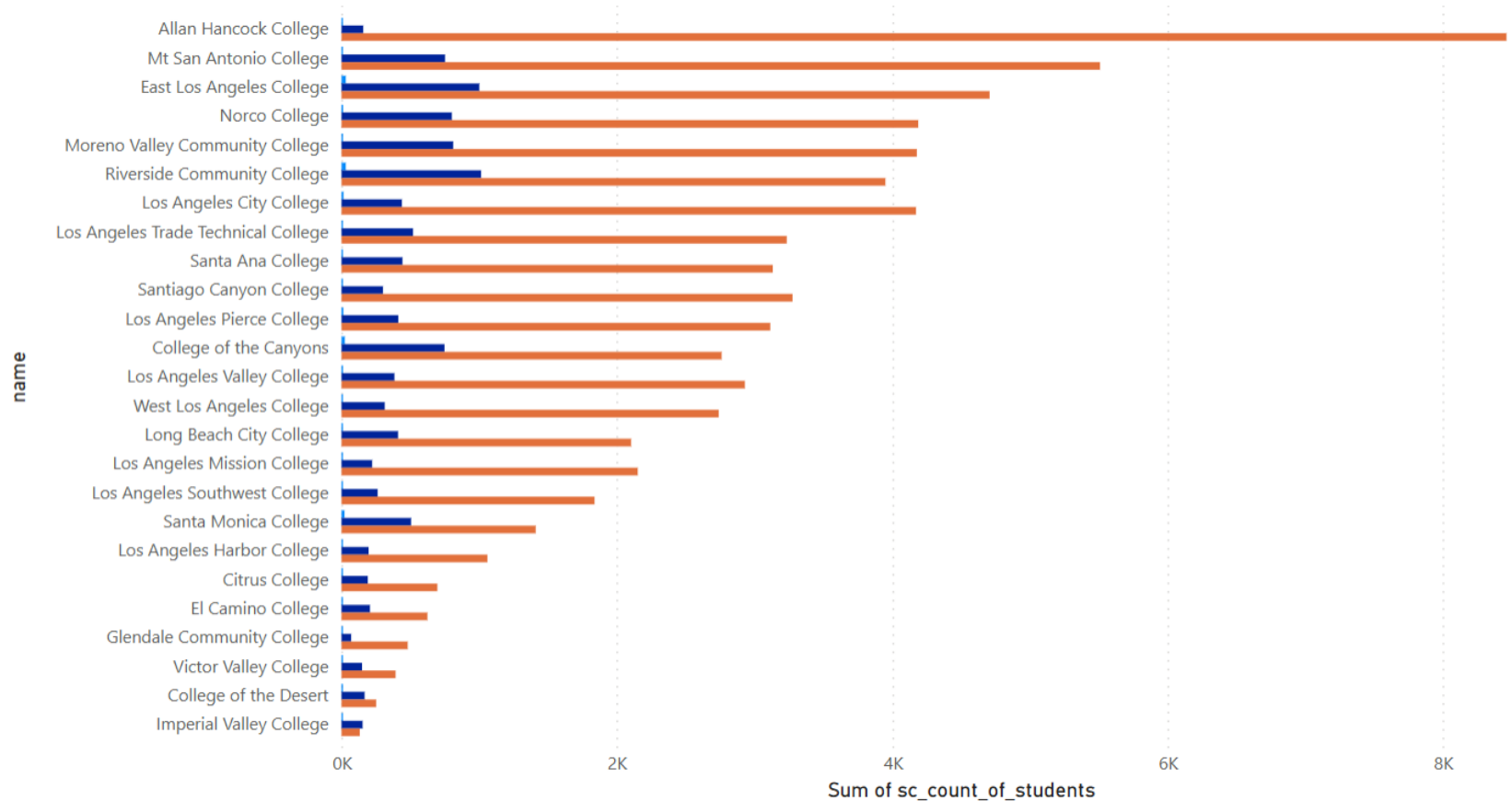
# Student Production - Limited English Proficiency

flag_column_id	sc_lep_flag_id	sc_lep_flag_id_descr...
sc_lep_flag	E	The student enrolled in a ...
sc_lep_flag	M	The student has been ide...
sc_lep_flag	N	The student has neither e...

# Student Production - Academically Disadvantaged

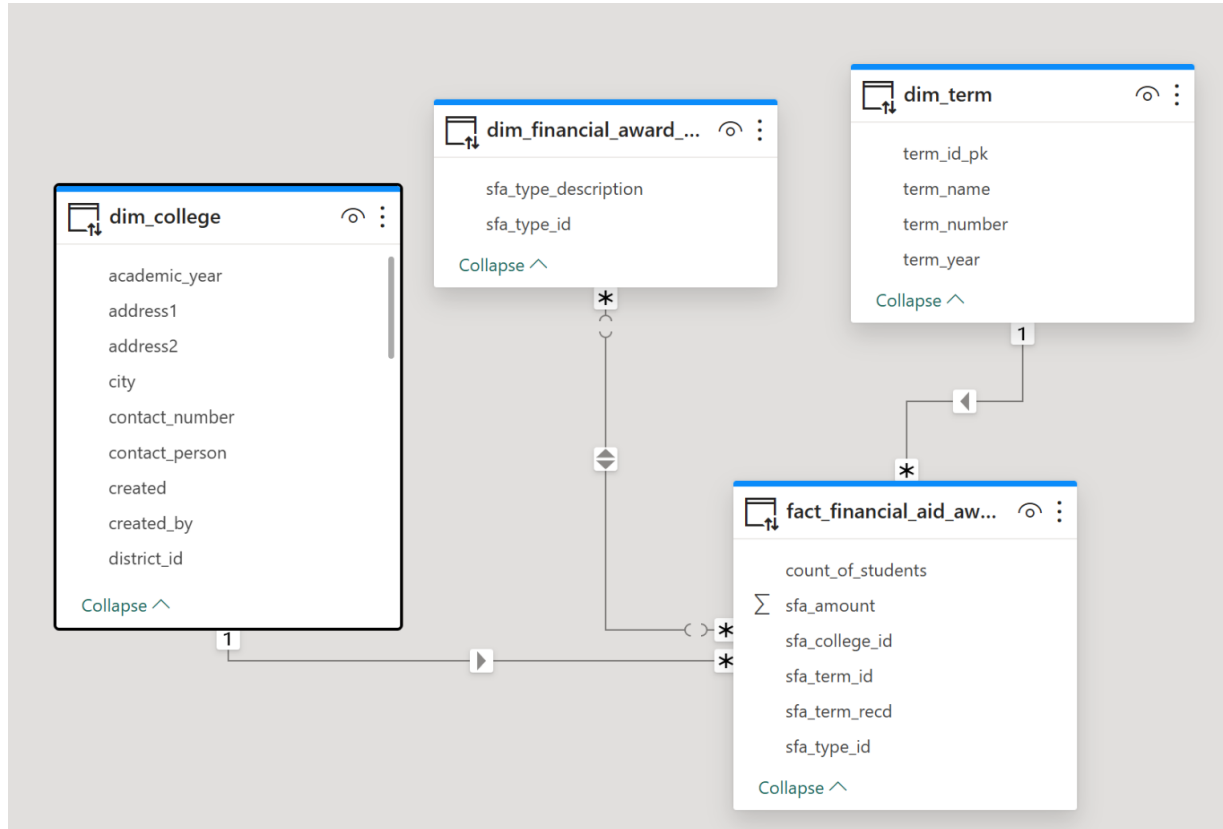
flag_column_id	sc_acad_disad_flag_id	sc_acad_disad_flag_i...
sc_acad_disad_flag	N	Has not been identified as...
sc_acad_disad_flag	Y	Meets one or more of the ...
sc_acad_disad_flag	L	Has been identified as bei...

# Student Production Mart





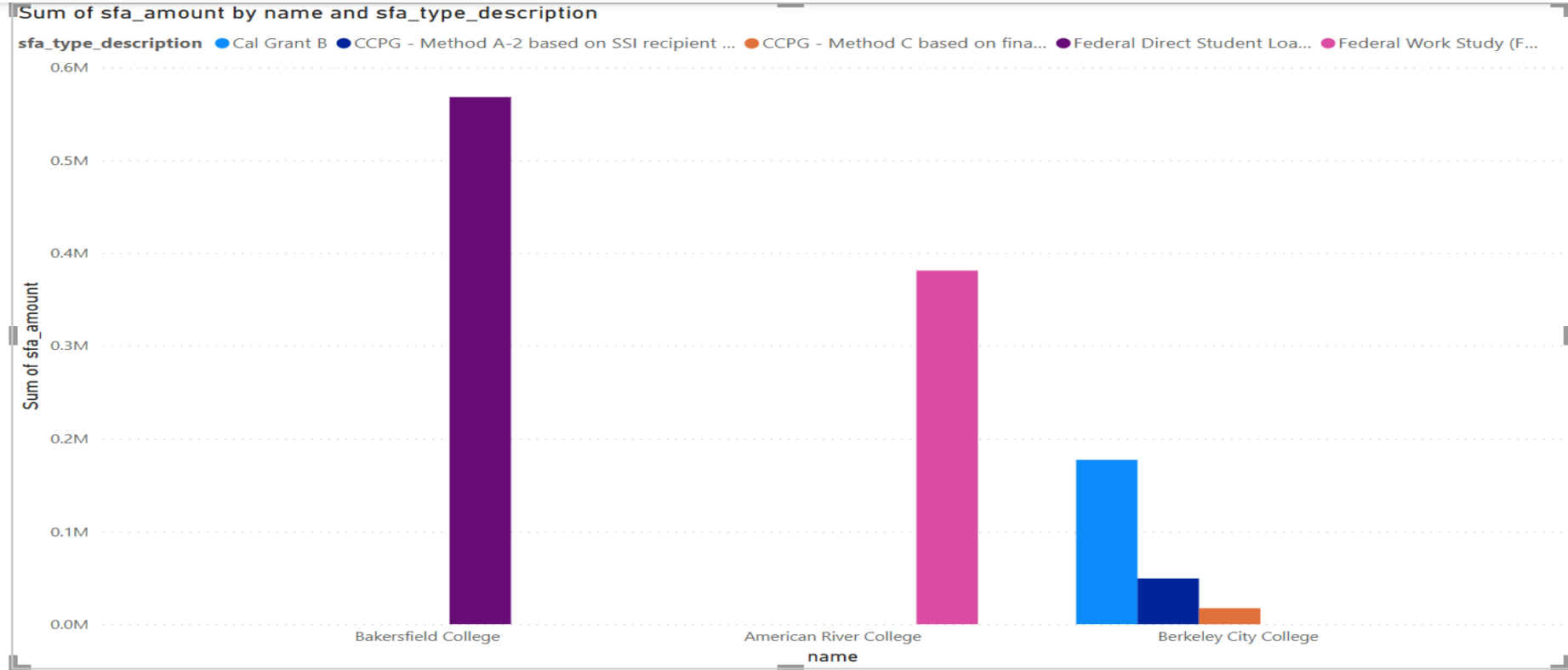
# Financial Awards Mart



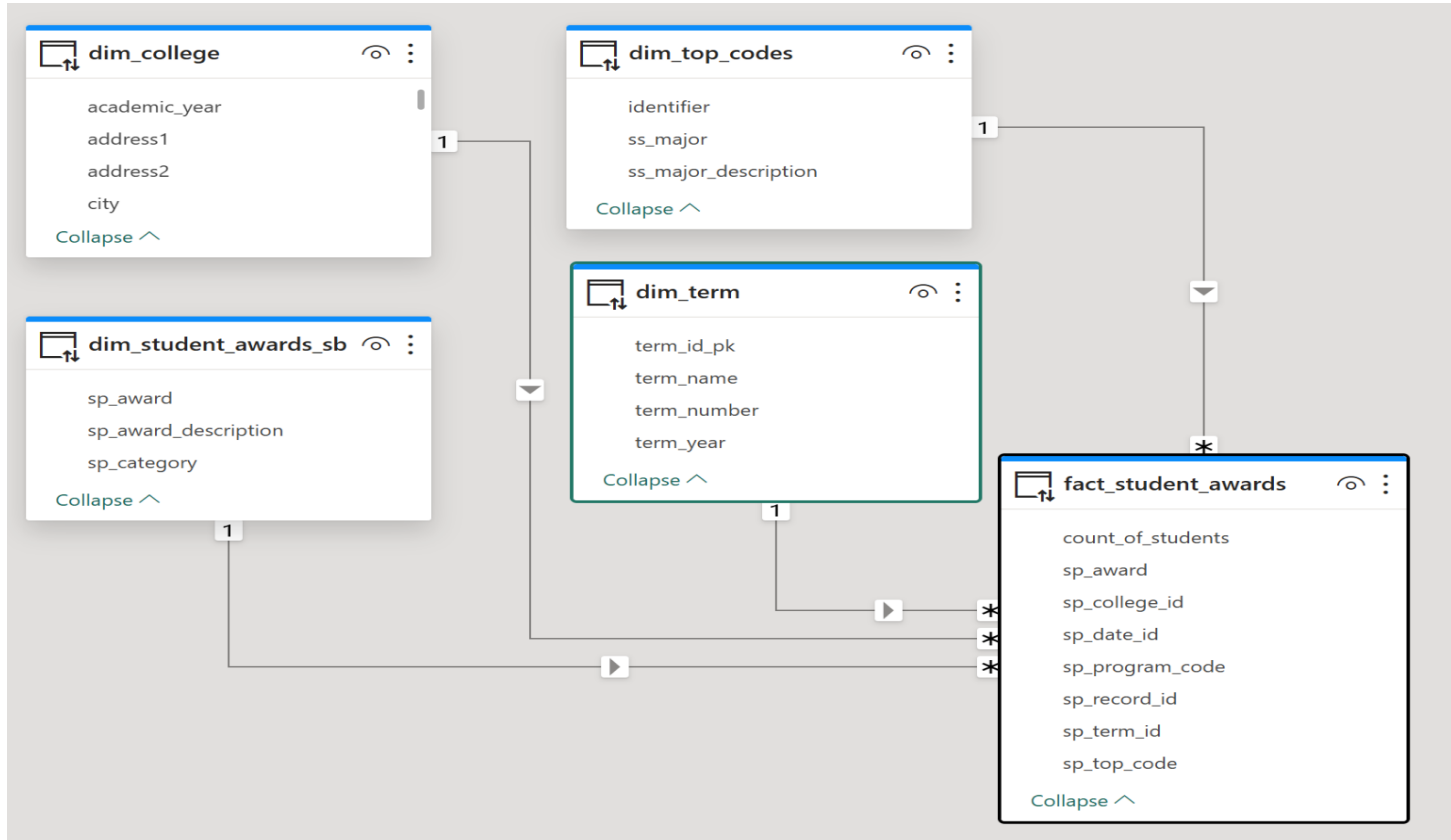
# Financial Aid - Award Type

sfa_type_id	sfa_type_description
SM	Scholarship: Middle Class...
SO	Scholarship: Osher
SU	Scholarship: institutional s...
SV	Scholarship: non-institutio...
SX	Scholarship: source unkn...
WC	California State Work Stu...
WE	EOPS Work Study

# Financial Aid - Award Type



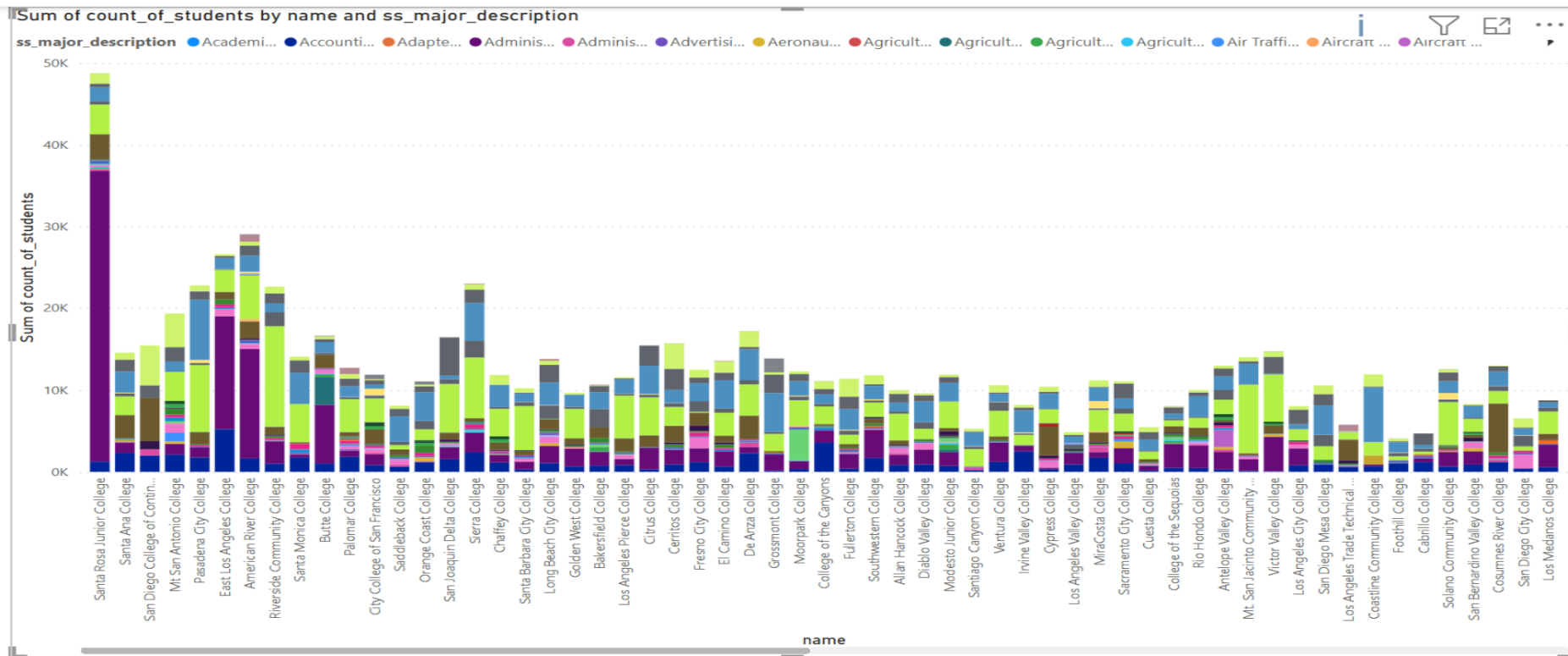
# Awards Mart



# Financial Awards Mart - Award Type

sp_award	sp_category	sp_award_description
A	CREDIT AWARDS	Associate of Arts (A.A.) d...
S	CREDIT AWARDS	Associate of Science (A.S...
Y	CREDIT AWARDS	Baccalaureate of Arts (B....
Z	CREDIT AWARDS	Baccalaureate of Science...
E	CREDIT AWARDS	Certificate requiring 6 to f...
M	CREDIT AWARDS	Certificate requiring 8 to f...

## Awards Mart - Award Type



# Where We go From Here

- Get feedback on the current model
- Evolve the model based on user requirements
- Current Backlog Items:

Backlog Item 1: Student Journey from Application to Award

Backlog Item 2: Addition of Sociodemographic Information to Conformed Dimensions

Backlog Item 3 - Addition of Peer Grouping to the College Dimension

Backlog Item 4 - Addition of Fraud Score as a Filter

# Discussion/Questions





# Appendix A

Backlog Items from feedback

# Backlog Item 1 - Student Journey from Application to Award

- Student researches colleges and majors of interest
- Initial Application to First College
- Selects an intended major during the application process
- Begins coursework toward declared major
- Student reassesses academic, personal, or career goals
- Experiences dissatisfaction with current program, finds a better fit elsewhere
- Completes credit evaluation process (determine which credits transfer)
- Begins coursework at new institution
- Progress Toward Degree
- Meets graduation requirements
- Graduation from New College

# Backlog Item 1 - Student Journey from Application to Award

- The Mart will allow the user to pick a year/term and a college and see how many students attend that college at that time
- Then over a selected period of time, see what other colleges that student attended and if they matriculated
- Dimensions will include all conformed dimensions

# Backlog Item 2 - Addition of Sociodemographic Information to Conformed Dimensions

- Example attributes:
  - Homeless Youth
  - Foster Youth Status
  - Race Ethnicity
  - Gender

# Backlog Item 3 - Addition of Peer Grouping to the College Dimension

- Peer groups will be based on:
  - Proximity
  - Size
  - Urban/Rural

## Backlog Item 4 - Addition of Fraud Score as a Filter

- A **fraud score** quantifies the likelihood that a record (such as a student application, or user account) is fraudulent based on a set of risk indicators.
- In data filtering, this score can be used to **automatically flag, prioritize, or exclude** records for review or further processing.
  - For example, records with a fraud score above a certain threshold could be routed for manual investigation, while those with low scores could proceed normally, improving efficiency and reducing the risk of reporting on fraudulent data.
- Filtering on fraud score will be optional

# CCC Data Warehouse and the Student Journey

April 29, 2025

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# Attributes “Canonicalized”

source	table_name	number_of_attributes
stnd_application	apply__personal_sociodemographic	40
stnd_application	apply__contact_information	24
stnd_application	apply__education	19
intl_application	apply__education	4
intl_application	apply__personal_information	7
stnd_application	apply__personal_information	3
bogfw_application	apply__personal_sociodemographic	25
bogfw_application	apply__contact_information	10
intl_application	apply__contact_information	43
bogfw_application	apply__personal_information	3
intl_application	apply__personal_sociodemographic	8
stnd_application	apply__college_attended	13



# Management Information System (CO-MIS)

