THE AGGREGATORS: GROUP PROJECT

Austin Beller | Debasis Chatterjee | Monica Joyner | Levi Peckham | Jo Vivian

IST 722 | SECTION M400 | Team 1

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Project Document

Project Charter

Purpose, Background and Goals	Success Criteria
Purpose: Apply IST722 course knowledge by implementing a DWH/BI system based on a case study **Background:** In the context of the case, there are two OLTP sources and a third source containing supplemental data **Goals:** 1. The timely delivery of project artifacts 2. The successful analysis, design, and implementation of a functional DWH/BI system 3. Team cohesion and collaboration with shared work responsibilities.	• Identify functional requirements of Fudgemart, Inc. • Identify 4+ business processes to model in the DWH as part of functional requirements • Justify value of business processes • Implement 2 business processes in the DWH • Implement meaningful, actionable business intelligence according to Kimball methods • DWH is illustrative of 4 DWH characteristics • Satisfy project deliverables criteria • Present DW/BI initiative at executive level of information sharing • Demo illustrates the satisfaction of functional requirements based on business processes

Products/Deliverables	Team Roles	Risks and Issues
• Project document • High-level dimensional modeling worksheet • Detail-level dimensional modeling worksheet • DWH on SQL Server • SSIS ETL (Source-Target map, SSIS packages, dataflows, etc.) • BI (SASS cubes, reporting, documentation) • Presentation & Demo	**Team Leader/Business Lead:** Monica Joyner **Project Manager:** Jo Vivian **Business Analyst:** Austin Beller/Levi Peckham **Data Architect/ETL Architect:** Debasis Chatterjee **BI Architect:** Levi Peckham	• Time constraints • DWH/BI knowledge and experience constraints • New team required to gel at an accelerated pace

Key Dates

Weekly Touchpoints

- 01/29/2020
- 01/26/2020
- 02/02/2020
- 02/09/2020
- 02/16/2020
- 02/23/2020
- 03/01/2020
- 03/08/2020
- 03/15/2020

Milestone Delivery Dates

- Milestone 1:
  - Draft of project document – Project charter, project plan, outline of functional requirements, overview of business processes and value, primary team role assignments
- Milestone 2:
  - Draft of high-level dimensional modeling worksheet – bus matrix, attributes and metrics, documentation of issues
- Milestone 3:
  - Draft of detail-level dimensional modeling worksheet and SQL implementation

Presentation Date

- 03/19/2020

Project Plan

Project Name				**Business Lead**	Monica Joyner	**Data Architect**	Debasis Chatterjee
Project Deliverable	Data Warehouse/Business Intelligence (DW/BI) Solution for Fudgemart			**Project Manager**	Jo Vivian	**ETL Architect**	Monica Joyner
Scope Statement				**Business Analyst**	Austin Beller	**BI Architect**	Levi Peckham
Start Date	1/9/2020	**End Date**	3/19/2020	**Overall Project Progress**		On Schedule/On Budget	

At Risk?	Task Name	Assigned To	Start Date	End Date	Due Date	Duration (Days)	Status
	Project Milestone 01 - Project Document						
N	Assemble a Project Charter	Monica	1/19/2020	1/22/2020	1/30/2020	3	Complete
N	Devise a Project Plan	Jo	1/19/2020	1/23/2020	1/30/2020	4	Complete
N	Outline Functional Requirements	Levi, Austin, Debasis	1/19/2020	1/23/2020	1/30/2020	4	Complete
N	Overview which business processes you will model from those functional requirements and explain their business value	Levi, Austin, Debasis	1/19/2020	1/25/2020	1/30/2020	6	Complete
	Project Milestone 02 - High level dimensional modeling worksheet						
N	Bus Matrix	Levi, Austin, Debasis	1/26/2020	2/15/2020	2/20/2020	20	In Progress/On time
N	Attributes and Metrics	Levi, Austin, Debasis	1/26/2020	2/15/2020	2/20/2020	20	In Progress/On time
N	Peer Review worksheet	Jo, Monica	2/15/2020	2/16/2020	2/20/2020	1	Not Started
N	Outline issues	Jo, Monica	2/15/2020	2/17/2020	2/20/2020	2	Not Started
	Project Milestone 03 - Detail level dimensional modeling worksheet & SQL Implementation						
	Worksheet		**2/21/2020**	**2/29/2020**	**3/12/2020**	8	**Not Started**
N	Contains fully completed dimensions and facts	Austin, Debasis, Monica	2/21/2020	2/28/2020	3/12/2020	7	Not Started
N	Identifies Sources for your source-to-target map	Austin, Debasis, Monica	2/21/2020	2/28/2020	3/12/2020	7	Not Started
N	Should be used to generate a SQL schema for your data warehouse	Austin, Debasis, Monica	2/21/2020	2/28/2020	3/12/2020	7	Not Started
N	Peer Review worksheet	Levi	2/21/2020	2/29/2020	3/12/2020	8	Not Started
	Data Warehouse on SQL Server		**3/1/2020**	**3/8/2020**	**3/12/2020**	**7**	**Not Started**
N	Follow Consistent Conventions	Monica	3/1/2020	3/8/2020	3/12/2020	7	Not Started
N	Adopts techniques learned in the course, such as use of staging and enterprise bus	Monica	3/1/2020	3/8/2020	3/12/2020	7	Not Started
	Project Milestone 04 - Final Deliverable						
	Initial ETL done in SSIS		**3/13/2020**	**3/19/2020**	**3/26/2020**	**6**	**Not Started**
N	Source-to-target map	Monica	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	SSIS package to stage data	Jo	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	SSIS package to load to DW from stage	Jo/Austin	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	**ETL Documentation**		3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	Source to target map	Monica	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	Screenshot of data flows	Jo	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	Explanation of ETL patterns	Monica	3/13/2020	3/19/2020	3/26/2020	6	Not Started
N	Data quality of survivorship rules	-	3/13/2020	3/19/2020	3/26/2020	6	Not Started
	Business Intelligence		**3/13/2020**	**3/22/2020**	**3/26/2020**	**9**	**Not Started**
N	SSAS cubes on analysis services server	Levi	3/13/2020	3/22/2020	3/26/2020	9	Not Started
N	BI Dashboard or application in Power BI and/or Excel	Levi	3/13/2020	3/22/2020	3/26/2020	9	Not Started
N	BI Documentation	Levi/Monica	3/13/2020	3/22/2020	3/26/2020	9	Not Started
N	Goal of analytics	Levi/Monica	3/13/2020	3/22/2020	3/26/2020	9	Not Started
N	Type of BI	Levi	3/13/2020	3/22/2020	3/26/2020	9	Not Started
	Presentation and Demo		**3/23/2020**	**3/25/2020**	**3/26/2020**	**2**	**Not Started**
N	5-minute executive presentation overviewing DW and BI	TBD	3/23/2020	3/25/2020	3/26/2020	2	Not Started
N	5-minute demo of BI application	TBD	3/23/2020	3/25/2020	3/26/2020	2	Not Started
N	Demo in class	TBD	3/23/2020	3/25/2020	3/26/2020	2	Not Started

Outline of Functional Requirements

1. Every time a customer orders an item that is logged to a worksheet which keeps track of how many times that item is sold
2. Every time a customer orders a product an email is sent to the customer reiterating the order then it emails when the item ships and when the item arrives
3. Employees and supervisors should be able to keep track of time.
4. Customers will be able to view what movies are available to rent
5. When a movie is rented it is then marked as out until no more copies are available which should then state the movie is unavailable.
6. When the account holder selects a plan, a message should be sent to mark which plan has been selected to the account holder thanking them.
7. Movies will be tracked via shipped and possible return date if the movie is close to the end of renting an email will be sent to the account holder.
8. All customers will have to submit a credit card before being able to order any products
9. Products will be ranked by favorability and rating, when a product falls below a set standard then the vendor will be notified the product is under review.
10. All employees must have a title.
11. Employees hours and payroll will be tracked and monitored by management.
12. All plans will be tier rated based on price with highest including streaming and lowest just offering shipping of DVD's.

Business Processes and Value

Fudgeflix

BP 1

Track (USA?) Regional Sales Fulfillment by Year per Department

ff_plans

ff_account_titles

FR: Weekly report by state indicating number of orders/qty

BI: Regional Heatmap

BP 2

Track Regional Fill Rate by Quarter by Sate

ff_plans

FR: Monthly report by state indicating increases/decreases in plan types

Fudgemart

BP 3

Track Employee Hiring and Length of Employment Duration — we aspire to have happy (!) full-time employees who are paid fairly, equally, and want to stay w/us

fm_employees

fm_jobtitles_lookup

fm_departments_lookup

fm_employee_timesheets

FR: Monthly report by department, supervisor, full-time status, hire/term date

BP 4

Track Regional Distribution of Orders by Department — we may wish to increase products or entirely eliminate departments based on sales; also optimize warehouse resources/distribution

fm_orders

fm_products

fm_departments_lookup

FR: Daily report of products sold aggregated by department per USA region (group of USA states)

Data Profiling Exercise

Data Profiling for FudgeMart Companies, Inc.

Database	Table Name	Type of Data?	Row Count	One row in this table means....	Business Keys	Notes / Issues ?
ExternalSources	fm_customer_survey		25	Customer survey ordered by email	none	Must be classified
ExternalSources	fm_customer_tweets		625	Various tweets from customers	none	Must be classified
fudgeflix_v3	ff_account_billing		1294		fk_ab_account_id, fk_ad_plan_id	Only 35 unique AccountID for 1,294 rows?
fudgeflix_v3	ff_account_titles		2368		fk_at_account_id, fk_at_title-id	
fudgeflix_v3	ff_accounts		35	per account_id	fk_account_zipcode, fk_plan	
fudgeflix_v3	ff_cast		70543		fk_cast_people_id, fk_cast_title_id	
fudgeflix_v3	ff_directors		7136		fk_director_people_id,fk_director_title_id	
fudgeflix_v3	ff_genres		485		pk	
fudgeflix_v3	ff_people		25347		pk	
fudgeflix_v3	ff_plans		7	per plan_id	pk	4 plan_current == 1, 3 plan_current == 0
fudgeflix_v3	ff_title_genres		27841	genre per title_id	fk_tg_genre_name, fk_tg_title_id	
fudgeflix_v3	ff_titles		7185	movie/season	pk	season == TV show
fudgeflix_v3	ff_zipcodes		41968	unique zip code	pk	
fudgemart_v3	fm_creditcards		49	Credit card information	pk	Different spaces for different credit cards
fudgemart_v3	fm_customer_creditcards		54	Credit card id	fk_customer_creditcards_creditcard_id, fk_customer_creditcards_customer_id	none noted
fudgemart_v3	fm_customer_product_reviews		1039	Contains reviews in stars	fk_customer_creditcards_creditcard_id, fk_customer_creditcards_customer_id	Redundancy of multiple products with multiple reviews
fudgemart_v3	fm_customers		25	Contains Costumer contact information	pk	Some null in rows
fudgemart_v3	fm_departments_lookup		6	Department title	pk	none noted
fudgemart_v3	fm_employee_timesheets		6275	Total hours plus clock in and out information	fk_fudgemart_employee_timesheets_fudgemart_employees	none noted
fudgemart_v3	fm_employees		33	Contains basic employee information	fk_employee_department, fk_employee_jobtitle	none noted
fudgemart_v3	fm_jobtitles_lookup		4	Job Title	pk	none noted
fudgemart_v3	fm_order_details		10466	Displays product id and department id	fk_order_details_items, fk_order_details_orders	possible redundancy order by
fudgemart_v3	fm_orders		3516	Displays order and shipping information	fk_order_shipvia, fk_orders_creditcard_id, fk_orders_customers	redundancy issue of possible double orders
fudgemart_v3	fm_products		53	Name of product and department location	fk_fudgemart_products_fudgemart_vendors, fk_fudgemart_products_product_department	none noted
fudgemart_v3	fm_shipvia_lookup		4	Name of Company which ships order	pk	none noted
fudgemart_v3	fm_vendors		9	Contact information of Vendor	pk	Some null in rows

High-Level Dimensional Modeling Worksheet

Bus Matrix

Business Process Name	Fact Table	Fact Grain Type	Granularity	Facts	Customer	Product	Order Date	Shipped Date	Movies	S
Movie Recommendation	FactFFRecommendation	transaction	one row per subscription	Average Rating, Runtime, YearsOld	x				x	
Price Plan Coverage	FactFFSubscriptions	transaction	one row per subscription	Plan Price, Months Opened	x	x				x
Fudgemart Sales/Revenue	FactFMSales	transaction	one row per order	Quantity, Wholesale Price, Retail Price, Revenue, Profit	x	x				
Order Fulfillment	FactFMFulfillment	transaction	one row per order	FulfillmentInLagDays, ShippedVia	x		x	x		
Movie/Product Recommendation	FactItemAnalysis	transaction	one row per customer	Retail Price, Plan Price	x	x				x

Attributes and Metrics

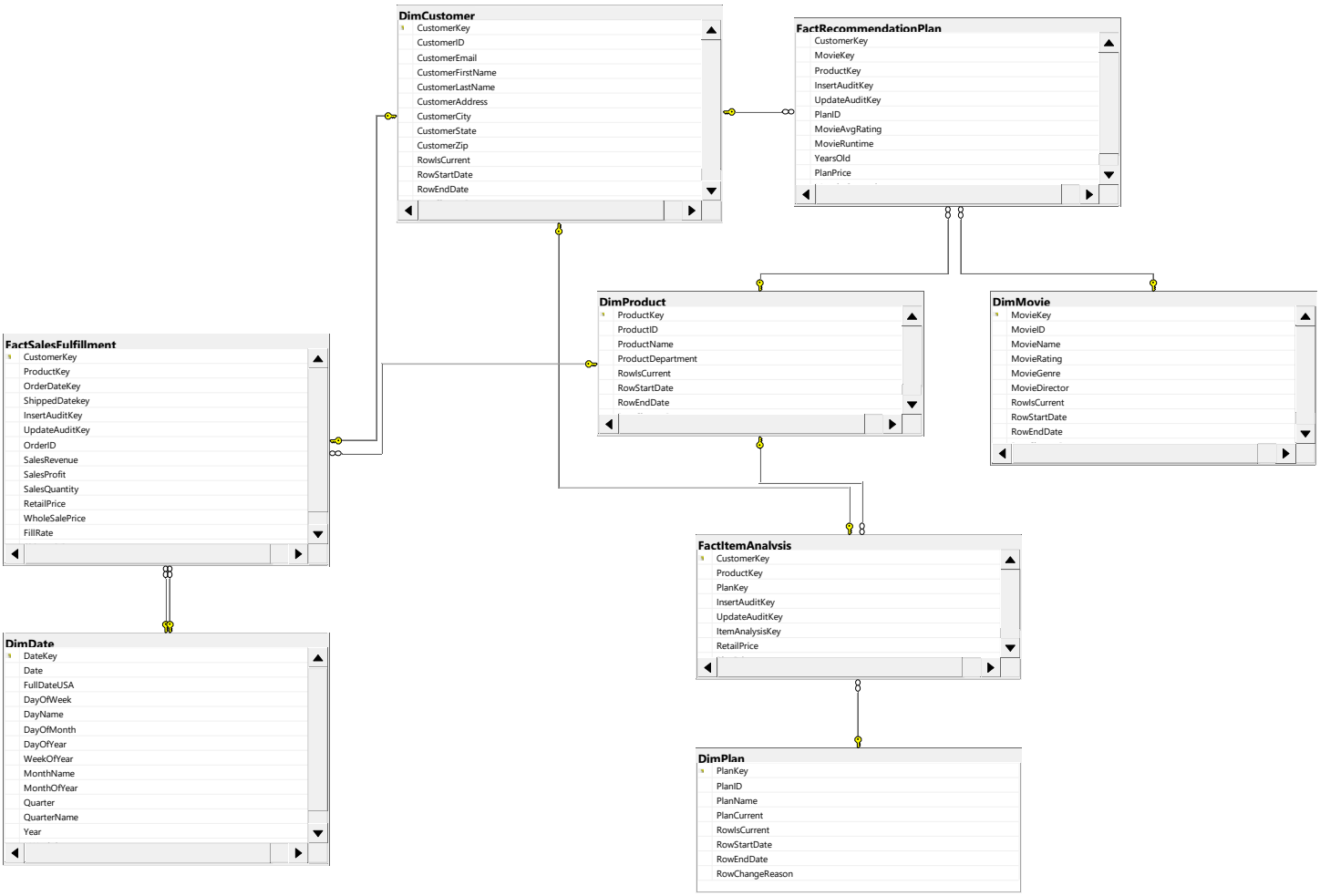
Dimension / Fact Table	Attribute / Fact Name	Description	Alternate Names	Sample Values
FactFudgeflixRecommendation	MovieAvgRating	Average customer rating		3.96
	MovieRuntime	Movie runtime in seconds		10240
	YearsOld	Current Year - Movie Release year		15
FactFudgeflixSubscriptions	IsPlanCurrent	Binary: 0 for no, 1 for yes		0
	PlanPrice	Subscription plan price in $		$ 12.99
	Months Opened	Current date - date account opened in months		4
FactFudgemartSales	Revenue	RetailPrice * Quantity		$ 35.96
	Profit	(RetailPrice - WholesalePrice) * Quantity		$ 24.00
	Quantity	# of items of a product		4
	RetailPrice	Retail price of a product in $		$ 8.99
	WholesalePrice	Wholesale price of a product in $		$ 2.99
FactFudgemartFulfillment	FulfillmentLagInDays	ShippedDate - Order Date		1
	ShippedVia	Company used to ship order (mini dimension)		JiffyEx
FactItemAnalysis	RetailPrice	Retail price of a product in $		$ 8.99
	PlanPrice	Subscription plan price in $		$ 12.99
DimCustomer	CustomerFirstName	Customer's first name		Lisa
	CustomerLastName	Customer's last name		Karforless
	CustomerAddress	Customer's address		1555 W Lane Ave
	CustomerZipcode	Customer's zip code		43221
DimOrderDate	OrderDateID	ID for date		20040926
	Day			26
	Month			September
	Year			2004
DimshippedDate	ShippedDateID	ID for date		20040926
	Day			26
	Month			September
	Year			2004
DimProduct	ProductName	name of product		Straight Claw Hammer
	ProductDepartment	department it's in in fudgemart, for fudgeflix it would be fudgeflix		Hardware
DimMovie	MovieName	Name of Movie		Meet Joe Black
	MovieRating	Viewer Rating of movie		PG-13
	MovieGenre	Genre of Movie		20th Century Period Pieces
DimSubscriptionPlan	PlanName	Subscription plan name		Basic Rental
	PlanCurrent	Flag gor if the plan is current		1

Detail-Level Dimensional Modeling Worksheet

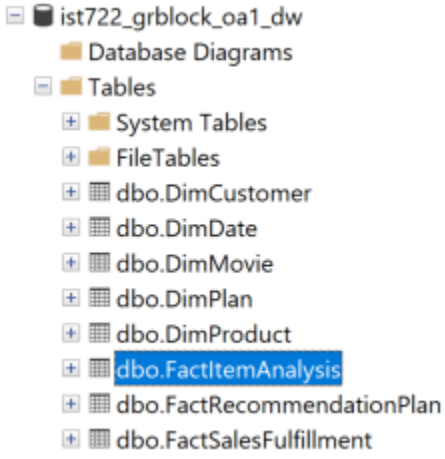
See Excel file IST722_M400_Team1_Detailed_Dim_Model_v2

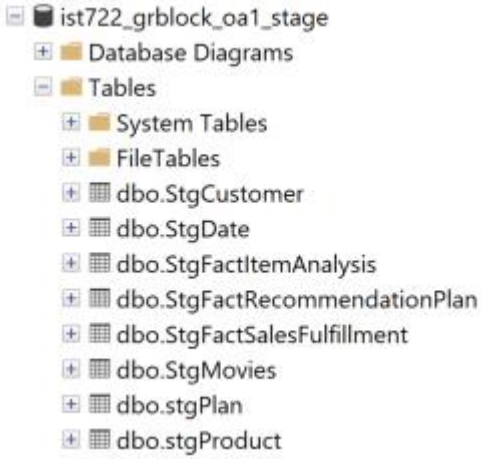
Data Warehouse on SQL Server

Star Schema



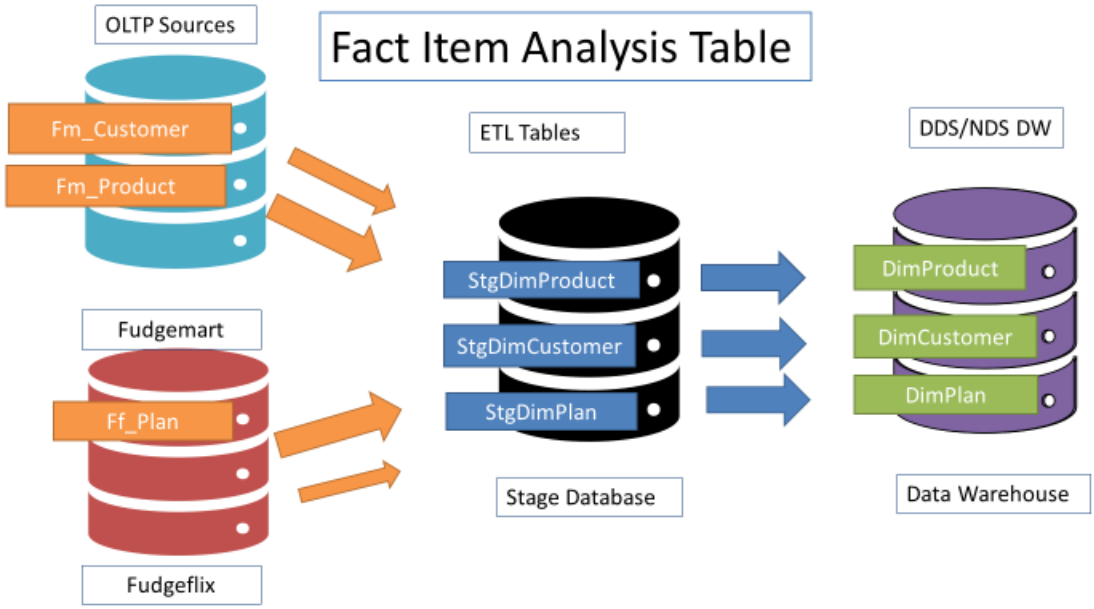
DW and Stage Implementation

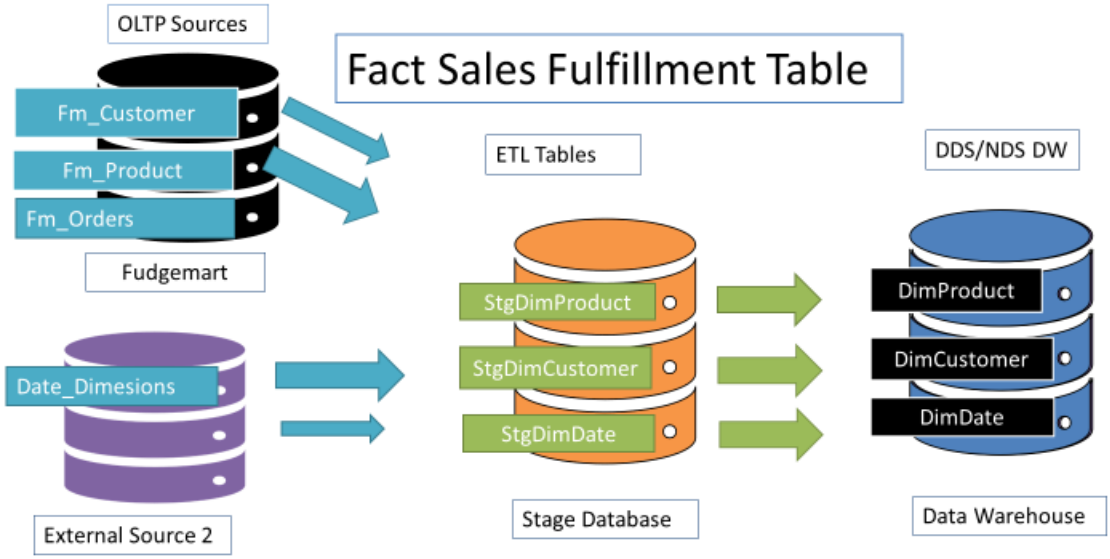


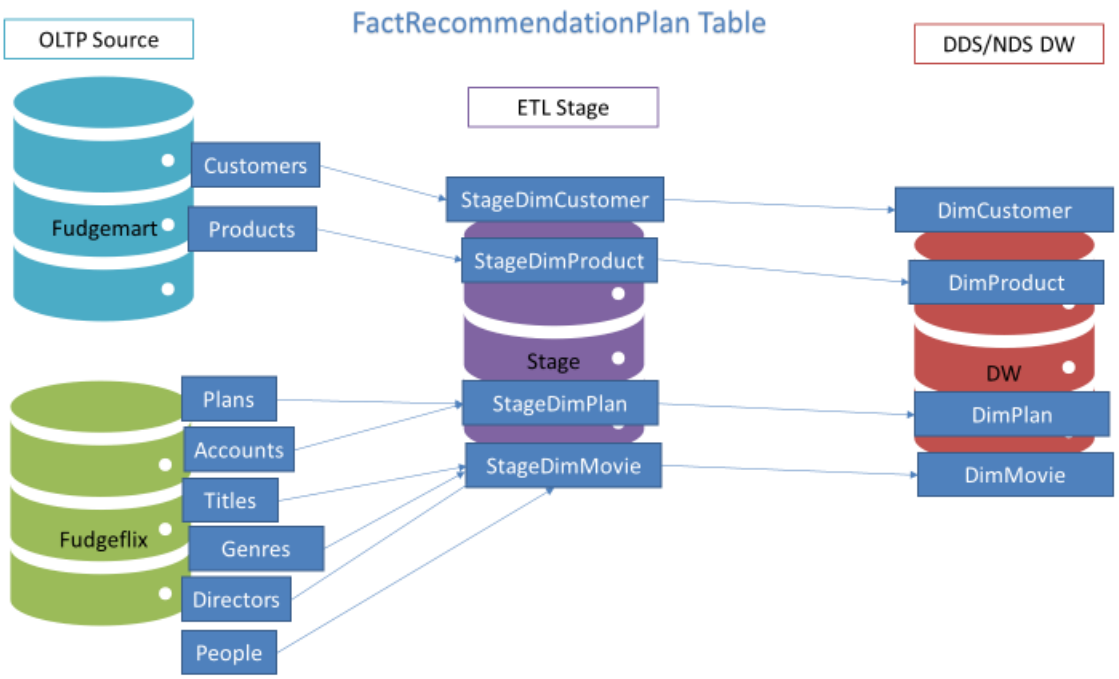


ETL In SSIS

Source to Target Maps

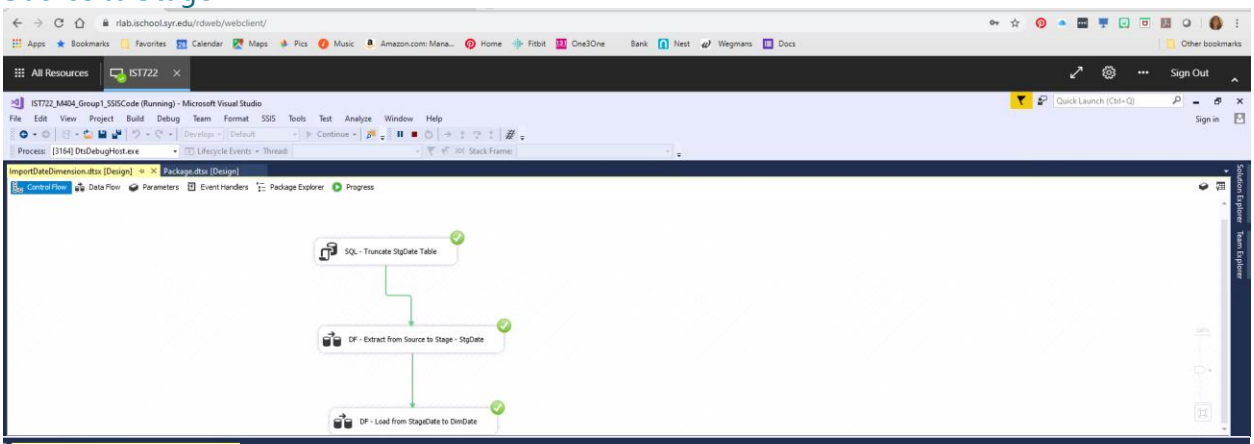





FactRecommendationPlan Table
OLTP Source
ETL Stage
DDS/NDS DW
Customers
Fudgemart
Products
Plans
Accounts
Titles
Fudgeflix
Genres
Directors
People
StageDimCustomer
StageDimProduct
Stage
StageDimPlan
StageDimMovie
DimCustomer
DimProduct
DW
DimPlan
DimMovie

SSIS Package

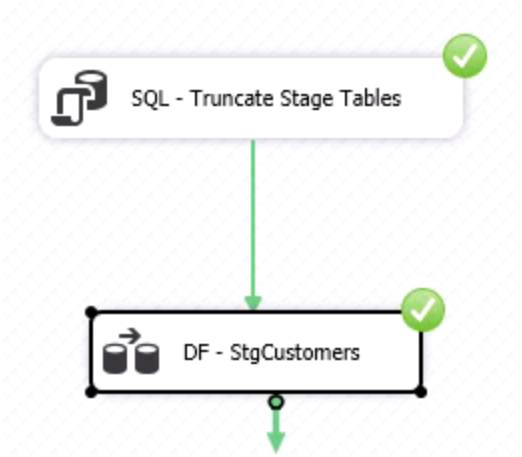
Source to Stage




```
select * from dbo.StgDate
```

	DateKey	Date	FullDateUK	FullDateUSA	DayOfMonth	DaySuffix	DayName	DayOfWeekUSA	DayOfWeekUK	DayOfWeekInMonth	DayOfWeekInYear	DayOfQuarter	DayOfYear	WeekOfMonth	WeekOfQuarter	WeekOfYear
1	20410228	2041-02-28 00:00:00.000	28/02/2041	02/28/2041	28	28th	Thursday	5	4	4	9	9	59	5	9	9
2	20410301	2041-03-01 00:00:00.000	01/03/2041	03/01/2041	1	1st	Friday	6	5	1	9	9	60	1	9	9
3	20410302	2041-03-02 00:00:00.000	02/03/2041	03/02/2041	2	2nd	Saturday	7	6	1	9	9	61	1	9	9
4	20410303	2041-03-03 00:00:00.000	03/03/2041	03/03/2041	3	3rd	Sunday	1	7	1	9	9	62	2	9	10
5	20410304	2041-03-04 00:00:00.000	04/03/2041	03/04/2041	4	4th	Monday	2	1	1	9	9	63	2	9	10
6	20410305	2041-03-05 00:00:00.000	05/03/2041	03/05/2041	5	5th	Tuesday	3	2	1	10	10	64	2	10	10
7	20410306	2041-03-06 00:00:00.000	06/03/2041	03/06/2041	6	6th	Wednesday	4	3	1	10	10	65	2	10	10
8	20410307	2041-03-07 00:00:00.000	07/03/2041	03/07/2041	7	7th	Thursday	5	4	1	10	10	66	2	10	10
9	20410308	2041-03-08 00:00:00.000	08/03/2041	03/08/2041	8	8th	Friday	6	5	2	10	10	67	2	10	10
10	20410309	2041-03-09 00:00:00.000	09/03/2041	03/09/2041	9	9th	Saturday	7	6	2	10	10	68	2	10	10
11	20410310	2041-03-10 00:00:00.000	10/03/2041	03/10/2041	10	10th	Sunday	1	7	2	10	10	69	3	10	11
12	20410311	2041-03-11 00:00:00.000	11/03/2041	03/11/2041	11	11th	Monday	2	1	2	10	10	70	3	10	11
13	20410312	2041-03-12 00:00:00.000	12/03/2041	03/12/2041	12	12th	Tuesday	3	2	2	11	11	71	3	11	11
14	20410313	2041-03-13 00:00:00.000	13/03/2041	03/13/2041	13	13th	Wednesday	4	3	2	11	11	72	3	11	11
15	20410314	2041-03-14 00:00:00.000	14/03/2041	03/14/2041	14	14th	Thursday	5	4	2	11	11	73	3	11	11
16	20410315	2041-03-15 00:00:00.000	15/03/2041	03/15/2041	15	15th	Friday	6	5	3	11	11	74	3	11	11
17	20410316	2041-03-16 00:00:00.000	16/03/2041	03/16/2041	16	16th	Saturday	7	6	3	11	11	75	3	11	11
18	20410317	2041-03-17 00:00:00.000	17/03/2041	03/17/2041	17	17th	Sunday	1	7	3	11	11	76	4	11	12
19	20410318	2041-03-18 00:00:00.000	18/03/2041	03/18/2041	18	18th	Monday	2	1	3	11	11	77	4	11	12
20	20410319	2041-03-19 00:00:00.000	19/03/2041	03/19/2041	19	19th	Tuesday	3	2	3	12	12	78	4	12	12
21	20410320	2041-03-20 00:00:00.000	20/03/2041	03/20/2041	20	20th	Wednesday	4	3	3	12	12	79	4	12	12
22	20410321	2041-03-21 00:00:00.000	21/03/2041	03/21/2041	21	21st	Thursday	5	4	3	12	12	80	4	12	12
23	20410322	2041-03-22 00:00:00.000	22/03/2041	03/22/2041	22	22nd	Friday	6	5	4	12	12	81	4	12	12
24	20410323	2041-03-23 00:00:00.000	23/03/2041	03/23/2041	23	23rd	Saturday	7	6	4	12	12	82	4	12	12
25	20410324	2041-03-24 00:00:00.000	24/03/2041	03/24/2041	24	24th	Sunday	1	7	4	12	12	83	5	12	13
26	20410325	2041-03-25 00:00:00.000	25/03/2041	03/25/2041	25	25th	Monday	2	1	4	12	12	84	5	12	13
27	20410326	2041-03-26 00:00:00.000	26/03/2041	03/26/2041	26	26th	Tuesday	3	2	4	13	13	85	5	13	13

Query executed successfully. | ist-cs-dw1 (12.0 SP3) | AD\cvivian (68) | ist722_grblock_oa1_stage | 00:00:01 | 36,525 rows



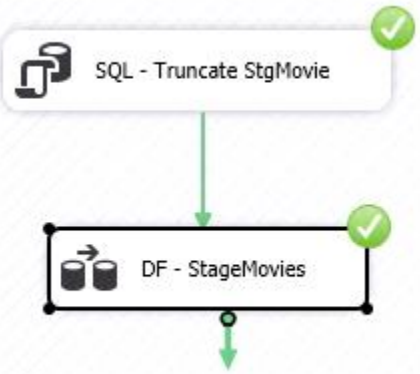

```
select * from dbo.StgCustomer
```

100 %

Results | Messages

	customer_id	customer_email	customer_firstname	customer_lastname	customer_address	customer_city	customer_state	customer_zip	customer_phone	customer_fax
1	1	lkarforless@superrito.com	Lisa	Karforless	1555 W Lane Ave	Columbus	OH	43221	6145554435	6145553928
2	2	jking@gustr.com	Joe	King	11 E Rancho Madera Rd	Madison	WI	53707	2095551205	2095552262
3	3	mmeadows@dayrep.com	Misty	Meadows	60 Madison Ave	New York	NY	10010	2125554800	NULL
4	4	gmoss@gustr.com	Growyn	Moss	2021 K Street Nw	Washington	DC	20006	2025555561	NULL
5	5	cpayne@gustr.com	Cam	Payne	4775 E Miami River Rd	Cleves	OH	45002	5135553043	NULL
6	6	bitall@dayrep.com	Bette	Itall	3250 Spring Grove Ave	Cincinnati	OH	45225	8005551957	8005552826
7	7	bdehatchett@dayrep.com	Barry	DeHatchett	9022 E Merchant Wy	Fairfield	IA	52556	5155556130	NULL
8	8	afirenzergon@gustr.com	Alma	Firenzergon	415 E Olive Ave	Fresno	CA	93728	5595558060	NULL
9	9	gtofwind@dayrep.com	Gus	Tofwind	882 W Easton Wy	Los Angeles	CA	90084	8005557000	NULL
10	10	ktain@superrito.com	Kurt	Tain	7833 N Ridge Rd	Sacramento	CA	91355	8055550584	8055556689
11	11	benarreau@superrito.com	Bo	Enarreau	7833 N Ridge Rd	Sacramento	CA	95887	2095557500	2095551302
12	12	afresco@dayrep.com	Al	Fresco	12345 E 67th Ave NW	Takoma Park	MD	24512	3385556772	NULL
13	13	otyme@dayrep.com	Otto	Tyme	2508 W Shaw Ave	Fresno	CA	93711	5595556245	NULL
14	14	pmeaup@dayrep.com	Phil	Meaup	12 Daniel Road	Fairfield	NJ	07004	2015559742	NULL
15	15	vrhee@dayrep.com	Victor	Rhee	1099 N Farcourt St	Orange	CA	92807	7145559000	NULL
16	16	ojouglad@gustr.com	Oren	Jouglad	1033 N Sycamore Ave.	Los Angeles	CA	90038	2135554322	NULL
17	17	tpani@dayrep.com	Tim	Pani	3433 E Widget Ave	Palo Alto	CA	92711	4155553434	NULL
18	18	jtyme@gustr.com	Justin	Tyme	828 S Broadway	Tarrytown	NY	10591	8005550037	NULL
19	19	tanott@gustr.com	Ty	Anott	789 E Mercy Ave	Phoenix	AZ	85038	9475553900	NULL
20	20	iquitten@dayrep.com	Ima	Quittin	2677 Industrial Circle Dr	Columbus	OH	43260	7045553500	NULL
21	21	equittin@dayrep.com	Eura	Quittin	2677 Industrial Circle Dr	Columbus	OH	43260	6145558600	6145557580
22	22	mitdowne@gustr.com	Mark	Itdowne	3467 W Shaw Ave #103	Fresno	CA	93711	5595558625	5595558495
23	23	meyezing@dayrep.com	Martin	Eyezing	627 Aviation Way	Manhatttan Beach	CA	90266	3105552732	NULL
24	24	sboate@gustr.com	Sal	Boate	372 San Quentin	San Francisco	CA	94161	6175550700	NULL
25	25	sbeeches@dayrep.com	Sandy	Beeches	2401 Wisconsin Ave NW	Washington	DC	20559	2065559115	NULL

Query executed successfully. | ist-cs-dw1 (12.0 SP3) | AD\cvivian (68) | ist722_grblock_oa1_stage | 00:00:00 | 25 rows



SQLQuery1.sql - ist...ge (AD\cvivian (69))*

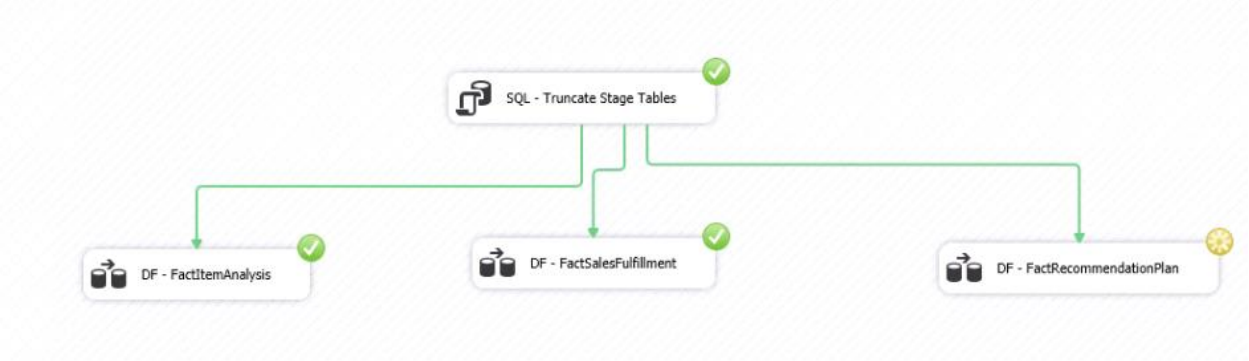
```
select * from dbo.StgMovies
```

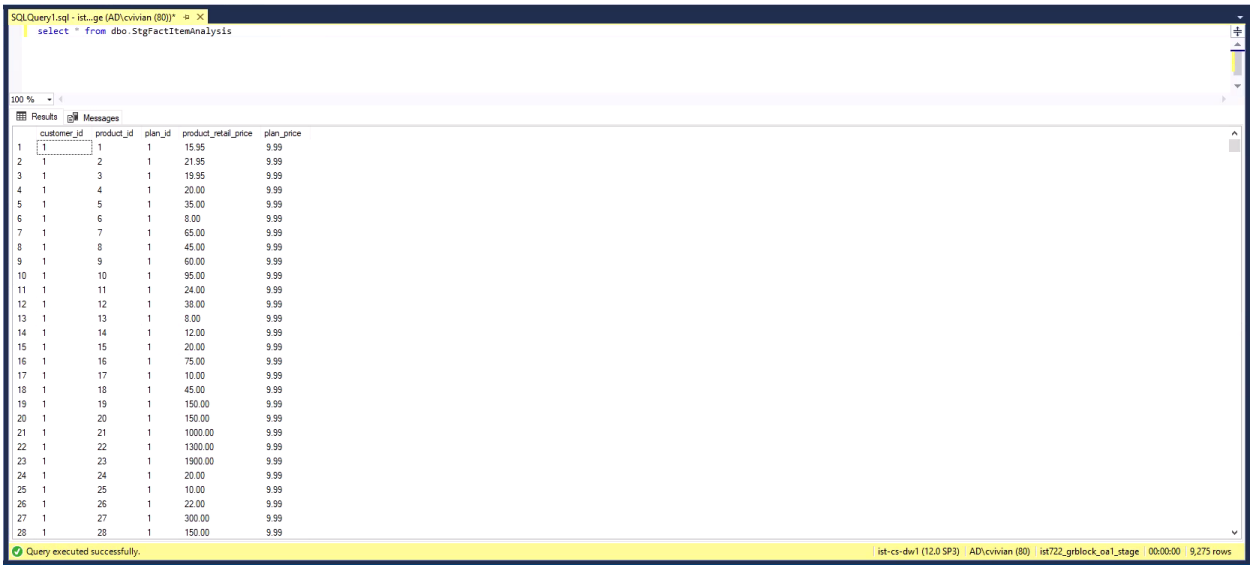
100 %

Results | Messages

	title_name	title_id	title_rating	tg_genre_name	people_name	director_people_id
1	Pleasantville	13kZA	PG-13	20th Century Period Pieces	Gary Ross	80023
2	Apt Pupil	13kZs	R	20th Century Period Pieces	Bryan Singer	158689
3	Velvet Goldmine	13kZV	R	20th Century Period Pieces	Todd Haynes	40456
4	Who Shot Pat?	1CZuz	R	20th Century Period Pieces	Robert Brooks	20005355
5	Digging to China	1EGty	PG	20th Century Period Pieces	Timothy Hutton	44302
6	The Newton Boys	1EJQ4	PG-13	20th Century Period Pieces	Richard Linklater	20000542
7	Shadrach	1EJTS	PG-13	20th Century Period Pieces	Susanna Styron	11639765
8	Without Limits	1EJXv	PG-13	20th Century Period Pieces	Robert Towne	93295
9	A Bronx Tale	5bCa	R	20th Century Period Pieces	Robert De Niro	22588
10	Cat on a Hot Tin Roof	5gvP	NR	20th Century Period Pieces	Jack Hofsis	20001073
11	Chaplin: The Movie	5ile	PG-13	20th Century Period Pieces	Richard Attenborough	3667
12	Chinatown	5lRm	R	20th Century Period Pieces	Roman Polanski	74213
13	Badlands	5MyU	PG	20th Century Period Pieces	Terrence Malick	58351
14	Circle of Friends	5mZM	PG-13	20th Century Period Pieces	Pat O'Connor	69199
15	Big Night	5TZE	R	20th Century Period Pieces	Campbell Scott	83499
16	Big Night	5TZE	R	20th Century Period Pieces	Stanley Tucci	93928
17	Born on the Fourth o...	5YII	R	20th Century Period Pieces	Oliver Stone	89386
18	Dead Presidents	5z7n	R	20th Century Period Pieces	Allen Hughes	43789
19	Dead Presidents	5z7n	R	20th Century Period Pieces	Albert Hughes	43788
20	Devil in a Blue Dress	62SV	R	20th Century Period Pieces	Carl Franklin	31693
21	Diner	63mX	R	20th Century Period Pieces	Barry Levinson	54812
22	The Doors	66OW	R	20th Century Period Pieces	Oliver Stone	89386
23	Drugstore Cowboy	68O3	R	20th Century Period Pieces	Gus Van Sant	95033
24	The English Patient	6CKF	R	20th Century Period Pieces	Anthony Minghella	64222
25	Eye of the Needle	6Eqo	R	20th Century Period Pieces	Richard Marquand	20001834
26	Fall Time	6Fio	R	20th Century Period Pieces	Paul Warner	159388
27	The Hindenburg	6fwD	PG	20th Century Period Pieces	Robert Wise	100318
28	Five Corners	6KD8	R	20th Century Period Pieces	Tony Bill	8213
29	The Hudsucker Proxy	6koj	PG	20th Century Period Pieces	Joel Coen	18016
30	The Idolmaker	6n3Q	PG	20th Century Period Pieces	Taylor Hackford	38130

Query executed successfully.





SQLQuery1.sql - ist...ge (AD\cvivian (80))*

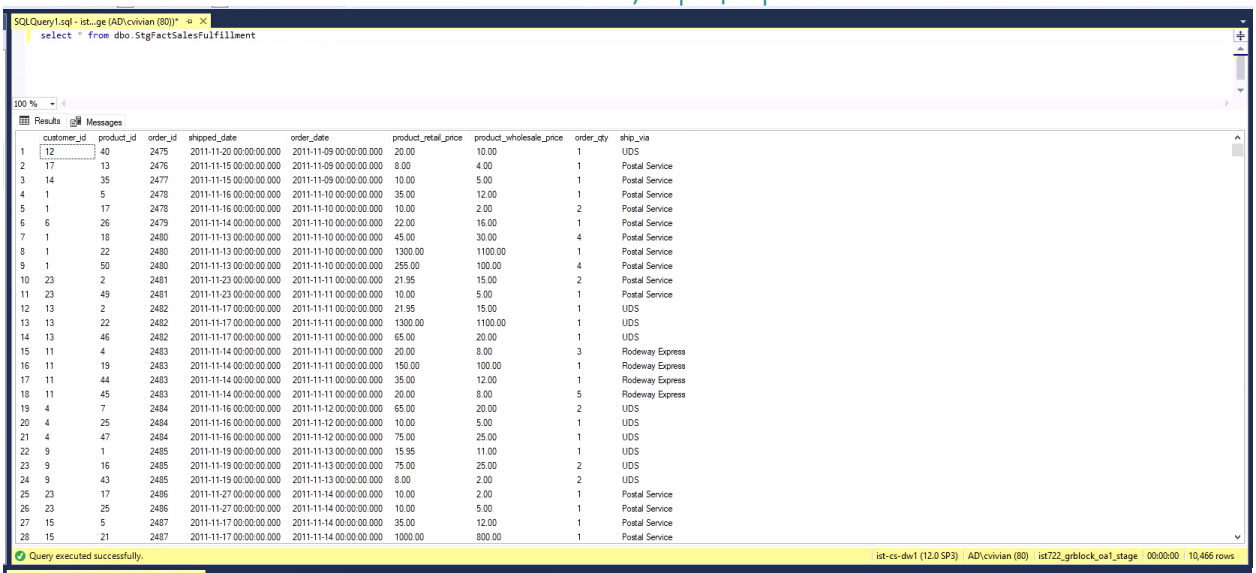
```
select * from dbo.StgFactItemAnalysis
```

100 %

Results | Messages

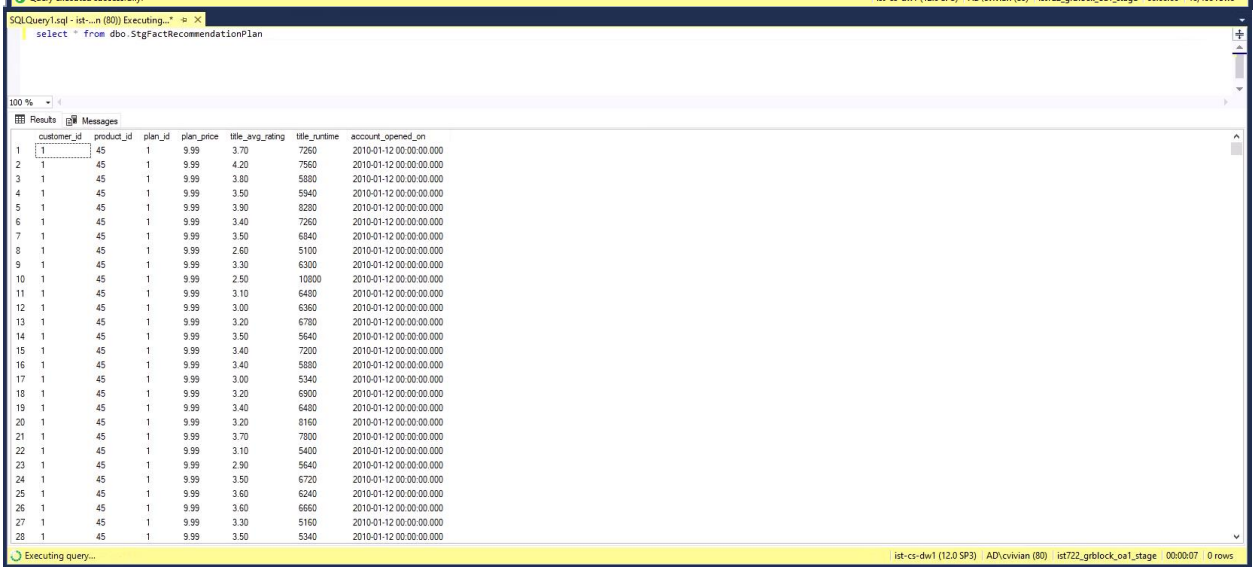
	customer_id	product_id	plan_id	product_retail_price	plan_price
1	1	1	1	15.95	9.99
2	1	2	1	21.95	9.99
3	1	3	1	19.95	9.99
4	1	4	1	20.00	9.99
5	1	5	1	35.00	9.99
6	1	6	1	8.00	9.99
7	1	7	1	65.00	9.99
8	1	8	1	45.00	9.99
9	1	9	1	60.00	9.99
10	1	10	1	95.00	9.99
11	1	11	1	24.00	9.99
12	1	12	1	38.00	9.99
13	1	13	1	8.00	9.99
14	1	14	1	12.00	9.99
15	1	15	1	20.00	9.99
16	1	16	1	75.00	9.99
17	1	17	1	10.00	9.99
18	1	18	1	45.00	9.99
19	1	19	1	150.00	9.99
20	1	20	1	150.00	9.99
21	1	21	1	1000.00	9.99
22	1	22	1	1300.00	9.99
23	1	23	1	1900.00	9.99
24	1	24	1	20.00	9.99
25	1	25	1	10.00	9.99
26	1	26	1	22.00	9.99
27	1	27	1	300.00	9.99
28	1	28	1	150.00	9.99

Query executed successfully. | ist-cs-dw1 (12.0 SP3) | AD\cvivian (80) | ist722_grblock_oa1_stage | 00:00:00 | 9,275 rows



```
select * from dbo.StgFactSalesFulfillment
```

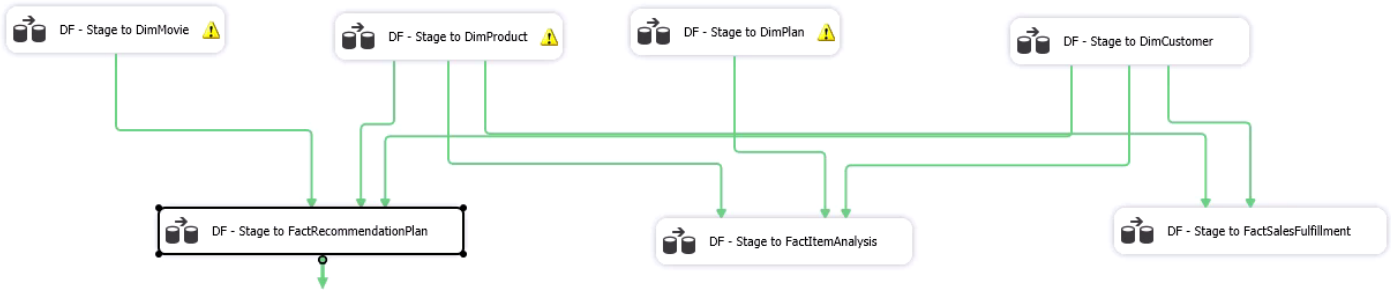
	customer_id	product_id	order_id	shipped_date	order_date	product_retail_price	product_wholesale_price	order_qty	ship_via
1	12	40	2475	2011-11-20 00:00:00.000	2011-11-09 00:00:00.000	20.00	10.00	1	UDS
2	17	13	2476	2011-11-15 00:00:00.000	2011-11-09 00:00:00.000	8.00	4.00	1	Postal Service
3	14	35	2477	2011-11-15 00:00:00.000	2011-11-09 00:00:00.000	10.00	5.00	1	Postal Service
4	1	5	2478	2011-11-16 00:00:00.000	2011-11-10 00:00:00.000	35.00	12.00	1	Postal Service
5	1	17	2478	2011-11-16 00:00:00.000	2011-11-10 00:00:00.000	10.00	2.00	2	Postal Service
6	6	26	2479	2011-11-14 00:00:00.000	2011-11-10 00:00:00.000	22.00	16.00	1	Postal Service
7	1	18	2480	2011-11-13 00:00:00.000	2011-11-10 00:00:00.000	45.00	30.00	4	Postal Service
8	1	22	2480	2011-11-13 00:00:00.000	2011-11-10 00:00:00.000	1300.00	1100.00	1	Postal Service
9	1	50	2480	2011-11-13 00:00:00.000	2011-11-10 00:00:00.000	255.00	100.00	4	Postal Service
10	23	2	2481	2011-11-23 00:00:00.000	2011-11-11 00:00:00.000	21.95	15.00	2	Postal Service
11	23	49	2481	2011-11-23 00:00:00.000	2011-11-11 00:00:00.000	10.00	5.00	1	Postal Service
12	13	2	2482	2011-11-17 00:00:00.000	2011-11-11 00:00:00.000	21.95	15.00	1	UDS
13	13	22	2482	2011-11-17 00:00:00.000	2011-11-11 00:00:00.000	1300.00	1100.00	1	UDS
14	13	46	2482	2011-11-17 00:00:00.000	2011-11-11 00:00:00.000	65.00	20.00	1	UDS
15	11	4	2483	2011-11-14 00:00:00.000	2011-11-11 00:00:00.000	20.00	8.00	3	Rodeway Express
16	11	19	2483	2011-11-14 00:00:00.000	2011-11-11 00:00:00.000	150.00	100.00	1	Rodeway Express
17	11	44	2483	2011-11-14 00:00:00.000	2011-11-11 00:00:00.000	35.00	12.00	1	Rodeway Express
18	11	45	2483	2011-11-14 00:00:00.000	2011-11-11 00:00:00.000	20.00	8.00	5	Rodeway Express
19	4	7	2484	2011-11-16 00:00:00.000	2011-11-12 00:00:00.000	65.00	20.00	2	UDS
20	4	25	2484	2011-11-16 00:00:00.000	2011-11-12 00:00:00.000	10.00	5.00	1	UDS
21	4	47	2484	2011-11-16 00:00:00.000	2011-11-12 00:00:00.000	75.00	25.00	1	UDS
22	9	1	2485	2011-11-19 00:00:00.000	2011-11-13 00:00:00.000	15.95	11.00	1	UDS
23	9	16	2485	2011-11-19 00:00:00.000	2011-11-13 00:00:00.000	75.00	25.00	2	UDS
24	9	43	2485	2011-11-19 00:00:00.000	2011-11-13 00:00:00.000	8.00	2.00	2	UDS
25	23	17	2486	2011-11-27 00:00:00.000	2011-11-14 00:00:00.000	10.00	2.00	1	Postal Service
26	23	25	2486	2011-11-27 00:00:00.000	2011-11-14 00:00:00.000	10.00	5.00	1	Postal Service
27	15	5	2487	2011-11-17 00:00:00.000	2011-11-14 00:00:00.000	35.00	12.00	1	Postal Service
28	15	21	2487	2011-11-17 00:00:00.000	2011-11-14 00:00:00.000	1000.00	800.00	1	Postal Service

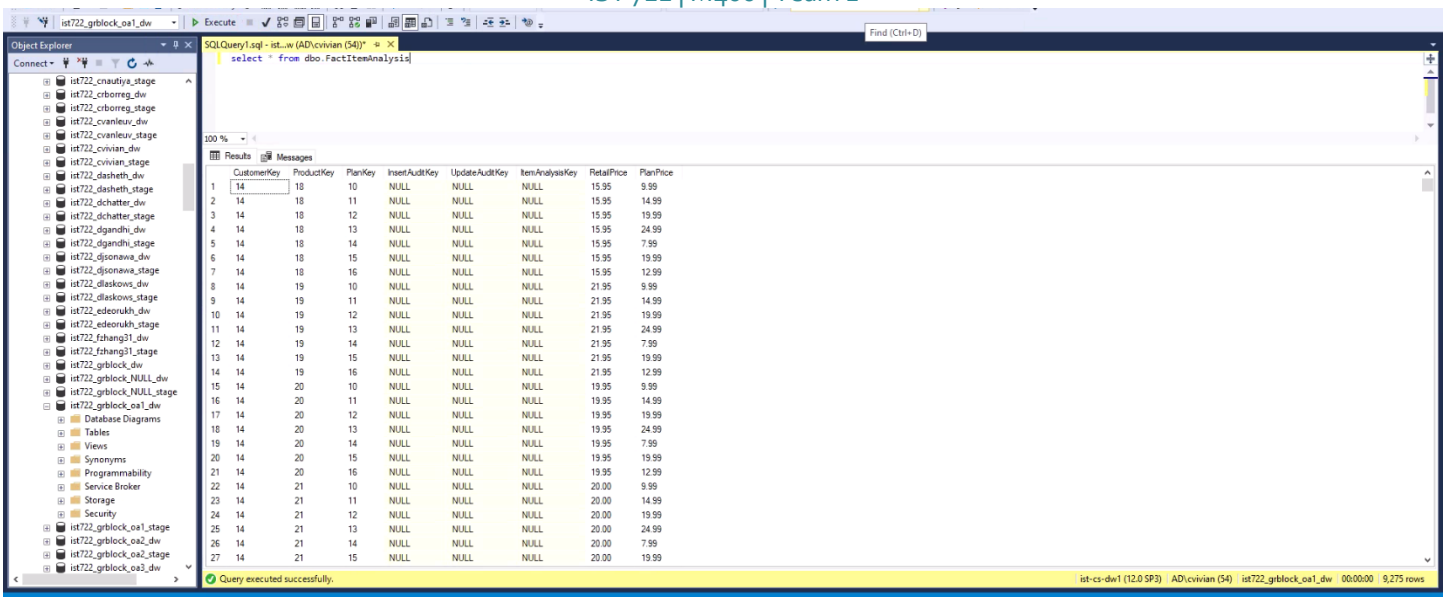


```
select * from dbo.StgFactRecommendationPlan
```

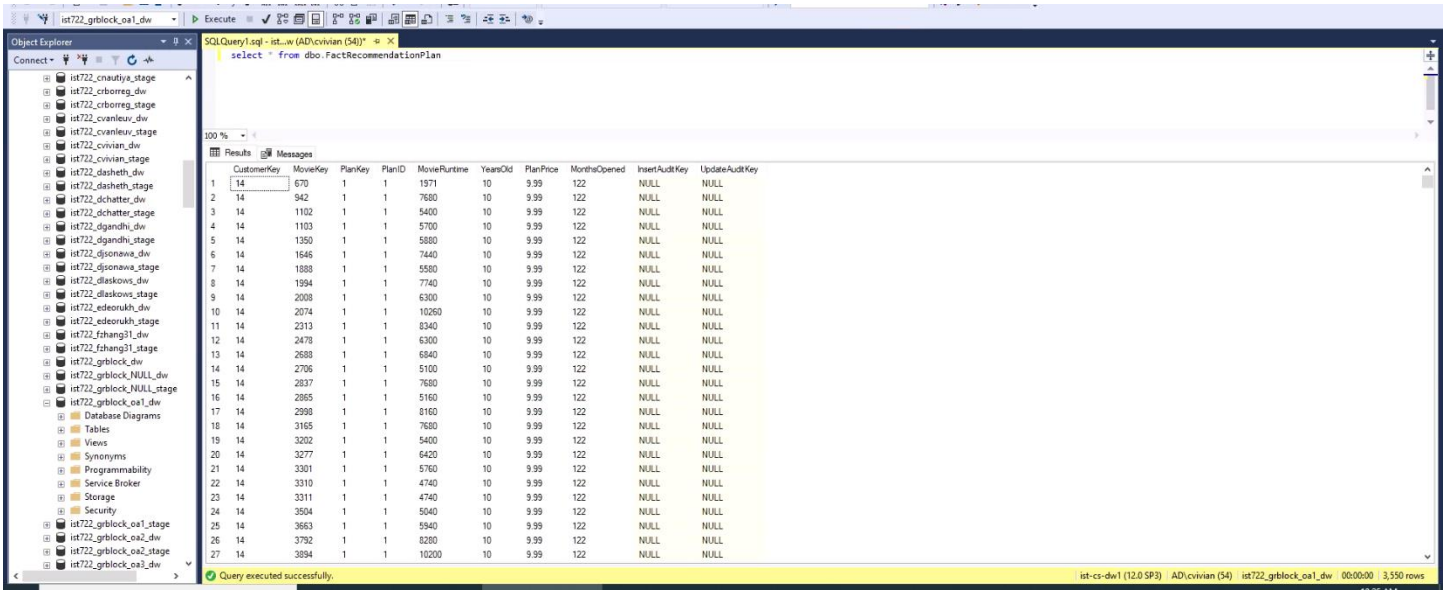
	customer_id	product_id	plan_id	plan_price	title_avg_rating	title_runtime	account_opened_on
1	1	45	1	9.99	3.70	7260	2010-01-12 00:00:00.000
2	1	45	1	9.99	4.20	7560	2010-01-12 00:00:00.000
3	1	45	1	9.99	3.80	5880	2010-01-12 00:00:00.000
4	1	45	1	9.99	3.50	5940	2010-01-12 00:00:00.000
5	1	45	1	9.99	3.90	8280	2010-01-12 00:00:00.000
6	1	45	1	9.99	3.40	7260	2010-01-12 00:00:00.000
7	1	45	1	9.99	3.50	6840	2010-01-12 00:00:00.000
8	1	45	1	9.99	2.60	5100	2010-01-12 00:00:00.000
9	1	45	1	9.99	3.30	6300	2010-01-12 00:00:00.000
10	1	45	1	9.99	2.50	10800	2010-01-12 00:00:00.000
11	1	45	1	9.99	3.10	6480	2010-01-12 00:00:00.000
12	1	45	1	9.99	3.00	6360	2010-01-12 00:00:00.000
13	1	45	1	9.99	3.20	6780	2010-01-12 00:00:00.000
14	1	45	1	9.99	3.50	5640	2010-01-12 00:00:00.000
15	1	45	1	9.99	3.40	7200	2010-01-12 00:00:00.000
16	1	45	1	9.99	3.40	5880	2010-01-12 00:00:00.000
17	1	45	1	9.99	3.00	5340	2010-01-12 00:00:00.000
18	1	45	1	9.99	3.20	6900	2010-01-12 00:00:00.000
19	1	45	1	9.99	3.40	6480	2010-01-12 00:00:00.000
20	1	45	1	9.99	3.20	8160	2010-01-12 00:00:00.000
21	1	45	1	9.99	3.70	7800	2010-01-12 00:00:00.000
22	1	45	1	9.99	3.10	5400	2010-01-12 00:00:00.000
23	1	45	1	9.99	2.90	5640	2010-01-12 00:00:00.000
24	1	45	1	9.99	3.50	6720	2010-01-12 00:00:00.000
25	1	45	1	9.99	3.60	6240	2010-01-12 00:00:00.000
26	1	45	1	9.99	3.60	6660	2010-01-12 00:00:00.000
27	1	45	1	9.99	3.30	5160	2010-01-12 00:00:00.000
28	1	45	1	9.99	3.50	5340	2010-01-12 00:00:00.000

Stage to DW

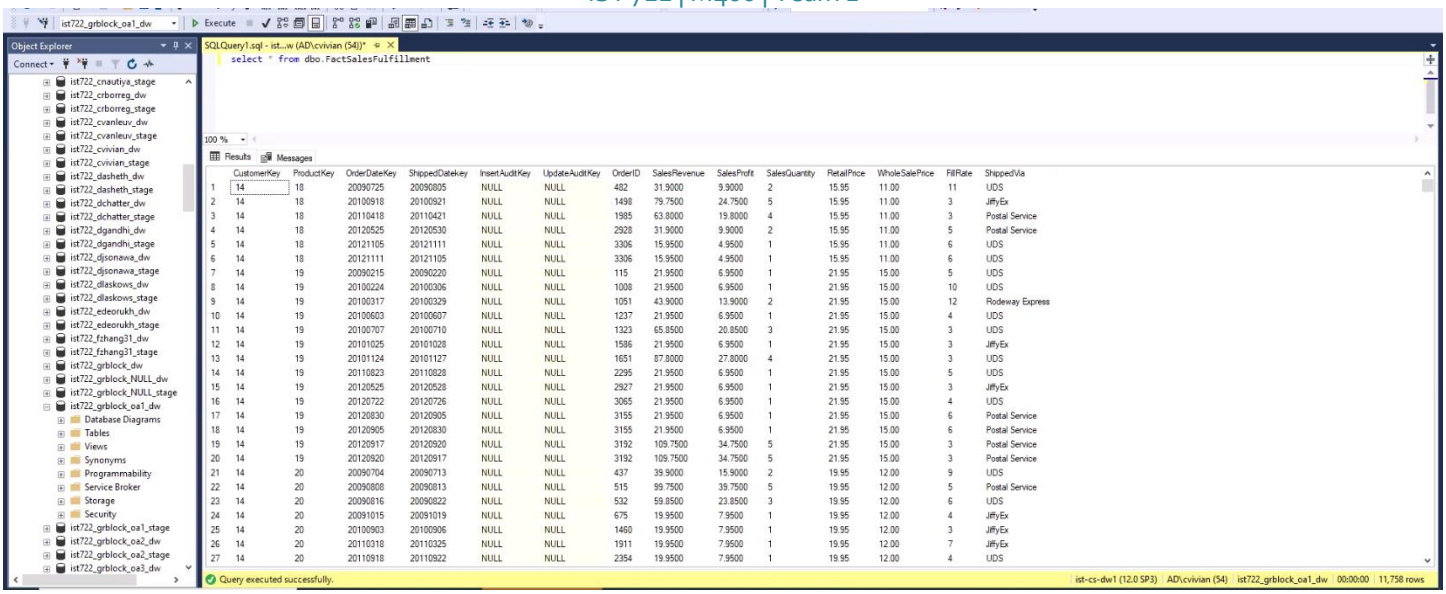




	CustomerKey	ProductKey	PlanKey	InsertAuditKey	UpdateAuditKey	ItemAnalysisKey	RetailPrice	PlanPrice
1	14	18	10	NULL	NULL	NULL	15.95	9.99
2	14	18	11	NULL	NULL	NULL	15.95	14.99
3	14	18	12	NULL	NULL	NULL	15.95	19.99
4	14	18	13	NULL	NULL	NULL	15.95	24.99
5	14	18	14	NULL	NULL	NULL	15.95	7.99
6	14	18	15	NULL	NULL	NULL	15.95	19.99
7	14	18	16	NULL	NULL	NULL	15.95	12.99
8	14	19	10	NULL	NULL	NULL	21.95	9.99
9	14	19	11	NULL	NULL	NULL	21.95	14.99
10	14	19	12	NULL	NULL	NULL	21.95	19.99
11	14	19	13	NULL	NULL	NULL	21.95	24.99
12	14	19	14	NULL	NULL	NULL	21.95	7.99
13	14	19	15	NULL	NULL	NULL	21.95	19.99
14	14	19	16	NULL	NULL	NULL	21.95	12.99
15	14	20	10	NULL	NULL	NULL	19.95	9.99
16	14	20	11	NULL	NULL	NULL	19.95	14.99
17	14	20	12	NULL	NULL	NULL	19.95	19.99
18	14	20	13	NULL	NULL	NULL	19.95	24.99
19	14	20	14	NULL	NULL	NULL	19.95	7.99
20	14	20	15	NULL	NULL	NULL	19.95	19.99
21	14	20	16	NULL	NULL	NULL	19.95	12.99
22	14	21	10	NULL	NULL	NULL	20.00	9.99
23	14	21	11	NULL	NULL	NULL	20.00	14.99
24	14	21	12	NULL	NULL	NULL	20.00	19.99
25	14	21	13	NULL	NULL	NULL	20.00	24.99
26	14	21	14	NULL	NULL	NULL	20.00	7.99
27	14	21	15	NULL	NULL	NULL	20.00	19.99



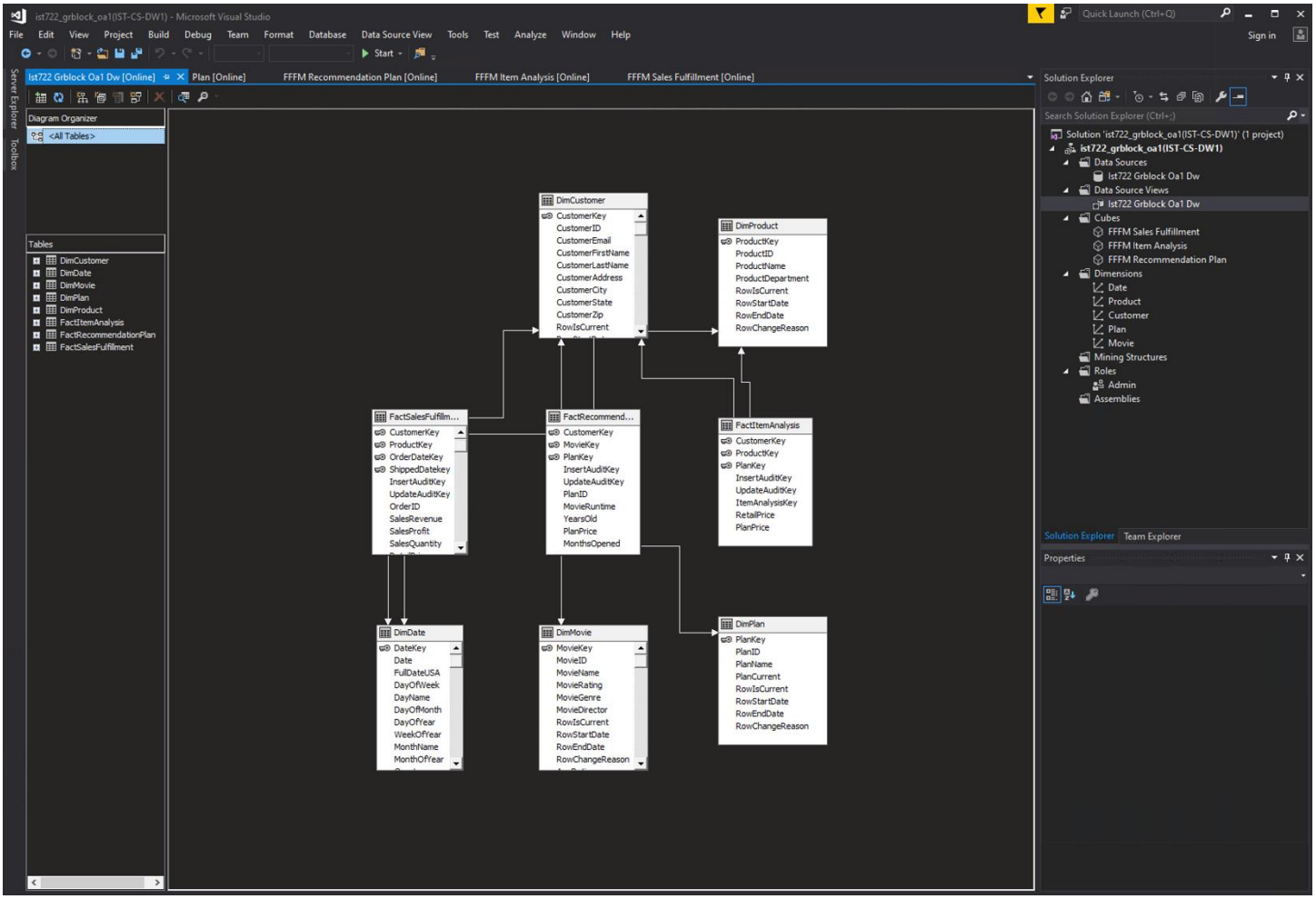
	CustomerKey	MovieKey	PlanKey	PlanID	MovieRuntime	YearsOld	PlanPrice	MonthsOpened	InsertAuditKey	UpdateAuditKey
1	14	670	1	1	1971	10	9.99	122	NULL	NULL
2	14	942	1	1	7680	10	9.99	122	NULL	NULL
3	14	1102	1	1	5400	10	9.99	122	NULL	NULL
4	14	1103	1	1	5700	10	9.99	122	NULL	NULL
5	14	1350	1	1	5880	10	9.99	122	NULL	NULL
6	14	1646	1	1	7440	10	9.99	122	NULL	NULL
7	14	1888	1	1	5580	10	9.99	122	NULL	NULL
8	14	1994	1	1	7740	10	9.99	122	NULL	NULL
9	14	2008	1	1	6300	10	9.99	122	NULL	NULL
10	14	2074	1	1	10260	10	9.99	122	NULL	NULL
11	14	2313	1	1	8340	10	9.99	122	NULL	NULL
12	14	2478	1	1	6300	10	9.99	122	NULL	NULL
13	14	2688	1	1	6840	10	9.99	122	NULL	NULL
14	14	2706	1	1	5100	10	9.99	122	NULL	NULL
15	14	2837	1	1	7680	10	9.99	122	NULL	NULL
16	14	2865	1	1	5160	10	9.99	122	NULL	NULL
17	14	2998	1	1	8160	10	9.99	122	NULL	NULL
18	14	3165	1	1	7680	10	9.99	122	NULL	NULL
19	14	3202	1	1	5400	10	9.99	122	NULL	NULL
20	14	3277	1	1	6420	10	9.99	122	NULL	NULL
21	14	3301	1	1	5760	10	9.99	122	NULL	NULL
22	14	3310	1	1	4740	10	9.99	122	NULL	NULL
23	14	3311	1	1	4740	10	9.99	122	NULL	NULL
24	14	3504	1	1	5040	10	9.99	122	NULL	NULL
25	14	3663	1	1	5940	10	9.99	122	NULL	NULL
26	14	3792	1	1	8280	10	9.99	122	NULL	NULL
27	14	3894	1	1	10200	10	9.99	122	NULL	NULL

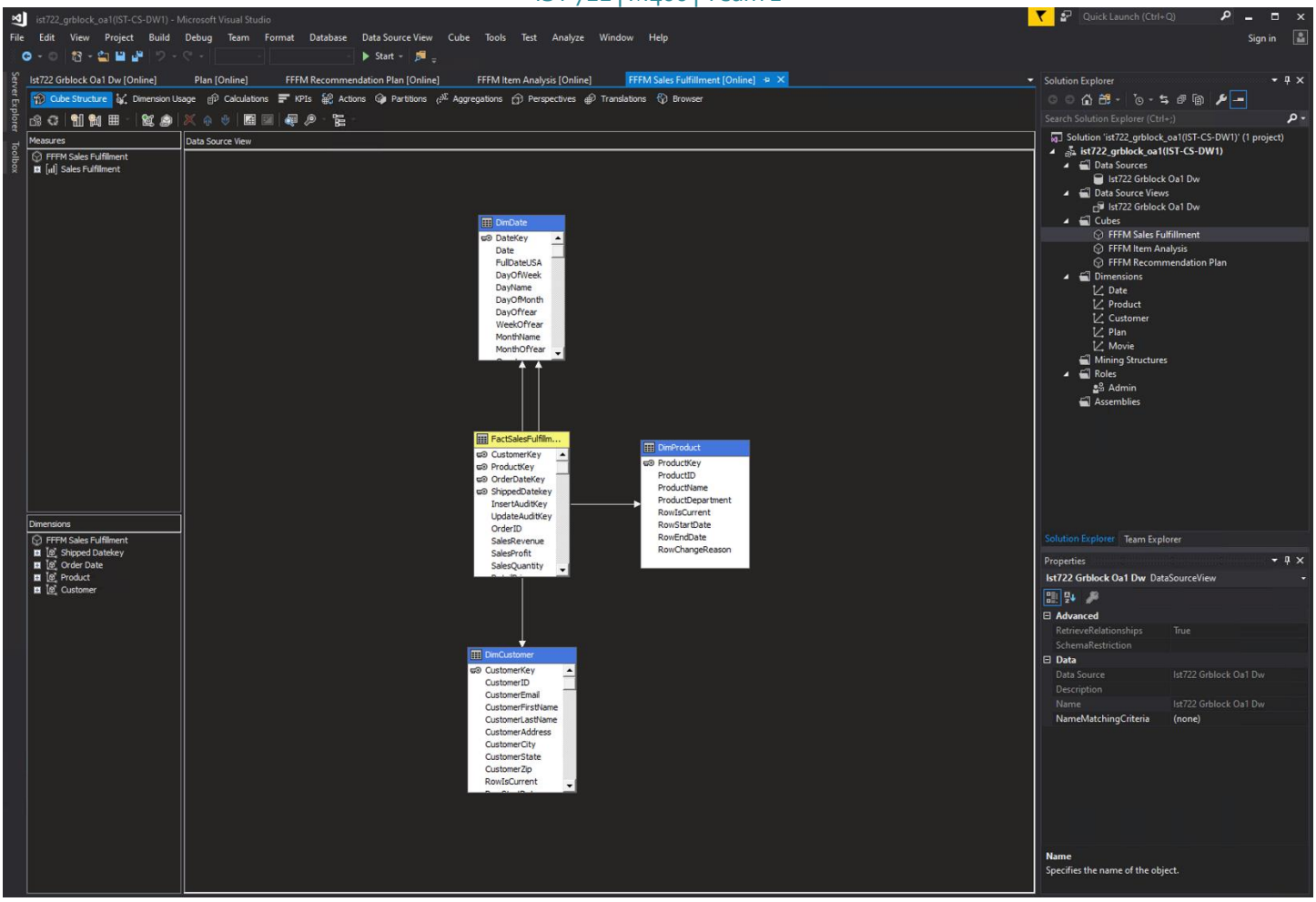


	CustomerKey	ProductKey	OrderDateKey	ShippedDatekey	InsertAuditKey	UpdateAuditKey	OrderID	SalesRevenue	SalesProfit	SalesQuantity	RetailPrice	WholeSalePrice	FillRate	ShippedVia
1	14	18	20090725	20090805	NULL	NULL	482	31.9000	9.9000	2	15.95	11.00	11	UDS
2	14	18	20100918	20100921	NULL	NULL	1498	79.7500	24.7500	5	15.95	11.00	3	JiffyEx
3	14	18	20110418	20110421	NULL	NULL	1985	63.8000	19.8000	4	15.95	11.00	3	Postal Service
4	14	18	20120525	20120530	NULL	NULL	2928	31.9000	9.9000	2	15.95	11.00	5	Postal Service
5	14	18	20121105	20121111	NULL	NULL	3306	15.9500	4.9500	1	15.95	11.00	6	UDS
6	14	18	20121111	20121105	NULL	NULL	3306	15.9500	4.9500	1	15.95	11.00	6	UDS
7	14	19	20090215	20090220	NULL	NULL	115	21.9500	6.9500	1	21.95	15.00	5	UDS
8	14	19	20100224	20100306	NULL	NULL	1008	21.9500	6.9500	1	21.95	15.00	10	UDS
9	14	19	20100317	20100329	NULL	NULL	1051	43.9000	13.9000	2	21.95	15.00	12	Rodeway Express
10	14	19	20100603	20100607	NULL	NULL	1237	21.9500	6.9500	1	21.95	15.00	4	UDS
11	14	19	20100707	20100710	NULL	NULL	1323	65.8500	20.8500	3	21.95	15.00	3	UDS
12	14	19	20101025	20101028	NULL	NULL	1586	21.9500	6.9500	1	21.95	15.00	3	JiffyEx
13	14	19	20101124	20101127	NULL	NULL	1651	87.8000	27.8000	4	21.95	15.00	3	UDS
14	14	19	20110823	20110828	NULL	NULL	2295	21.9500	6.9500	1	21.95	15.00	5	UDS
15	14	19	20120525	20120528	NULL	NULL	2927	21.9500	6.9500	1	21.95	15.00	3	JiffyEx
16	14	19	20120722	20120726	NULL	NULL	3065	21.9500	6.9500	1	21.95	15.00	4	UDS
17	14	19	20120830	20120905	NULL	NULL	3155	21.9500	6.9500	1	21.95	15.00	6	Postal Service
18	14	19	20120905	20120830	NULL	NULL	3155	21.9500	6.9500	1	21.95	15.00	6	Postal Service
19	14	19	20120917	20120920	NULL	NULL	3192	109.7500	34.7500	5	21.95	15.00	3	Postal Service
20	14	19	20120920	20120917	NULL	NULL	3192	109.7500	34.7500	5	21.95	15.00	3	Postal Service
21	14	20	20090704	20090713	NULL	NULL	437	39.9000	15.9000	2	19.95	12.00	9	UDS
22	14	20	20090808	20090813	NULL	NULL	515	99.7500	39.7500	5	19.95	12.00	5	Postal Service
23	14	20	20090816	20090822	NULL	NULL	532	59.8500	23.8500	3	19.95	12.00	6	UDS
24	14	20	20091015	20091019	NULL	NULL	675	19.9500	7.9500	1	19.95	12.00	4	JiffyEx
25	14	20	20100903	20100906	NULL	NULL	1460	19.9500	7.9500	1	19.95	12.00	3	JiffyEx
26	14	20	20110318	20110325	NULL	NULL	1911	19.9500	7.9500	1	19.95	12.00	7	JiffyEx
27	14	20	20110918	20110922	NULL	NULL	2354	19.9500	7.9500	1	19.95	12.00	4	UDS

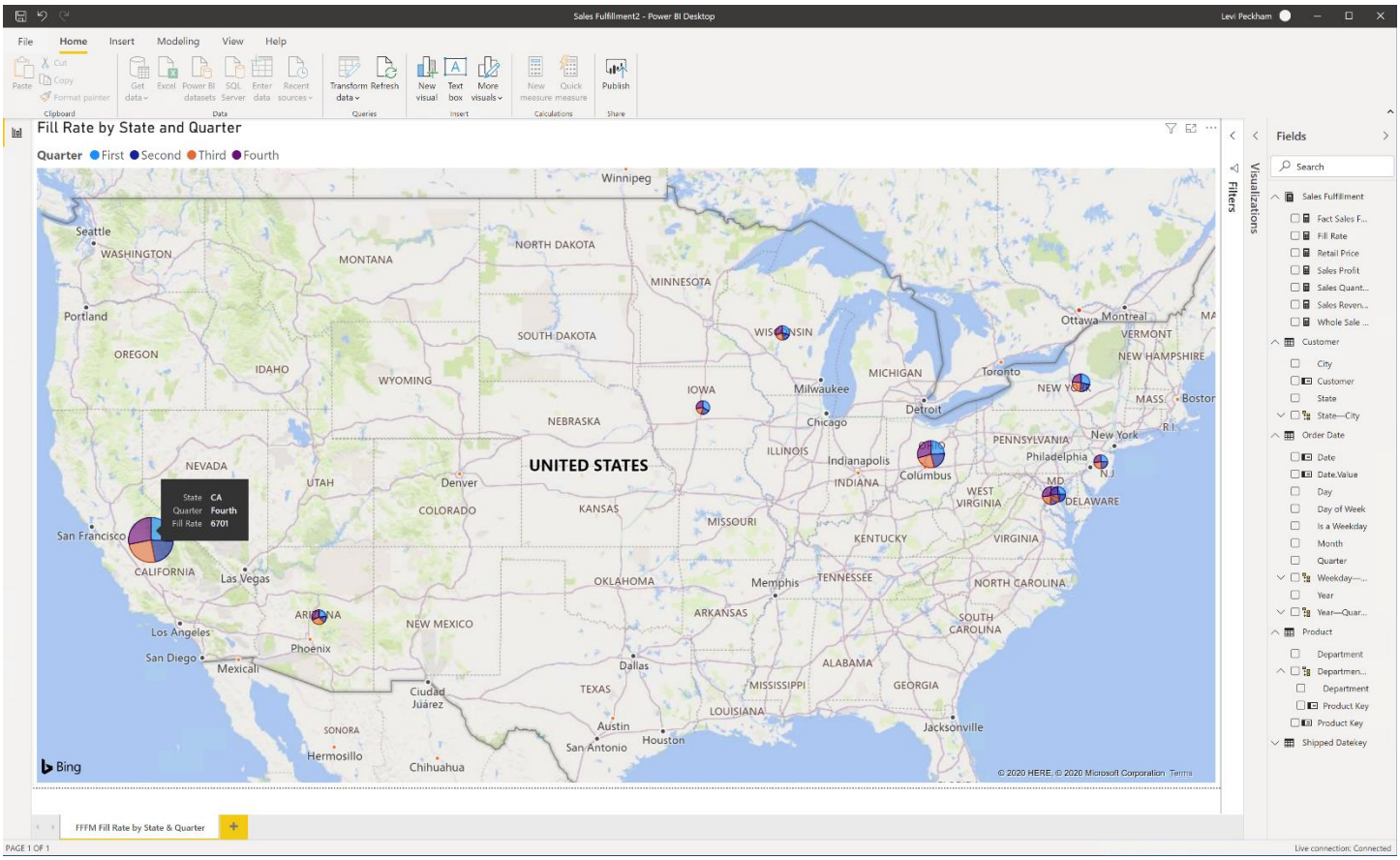
Business Intelligence

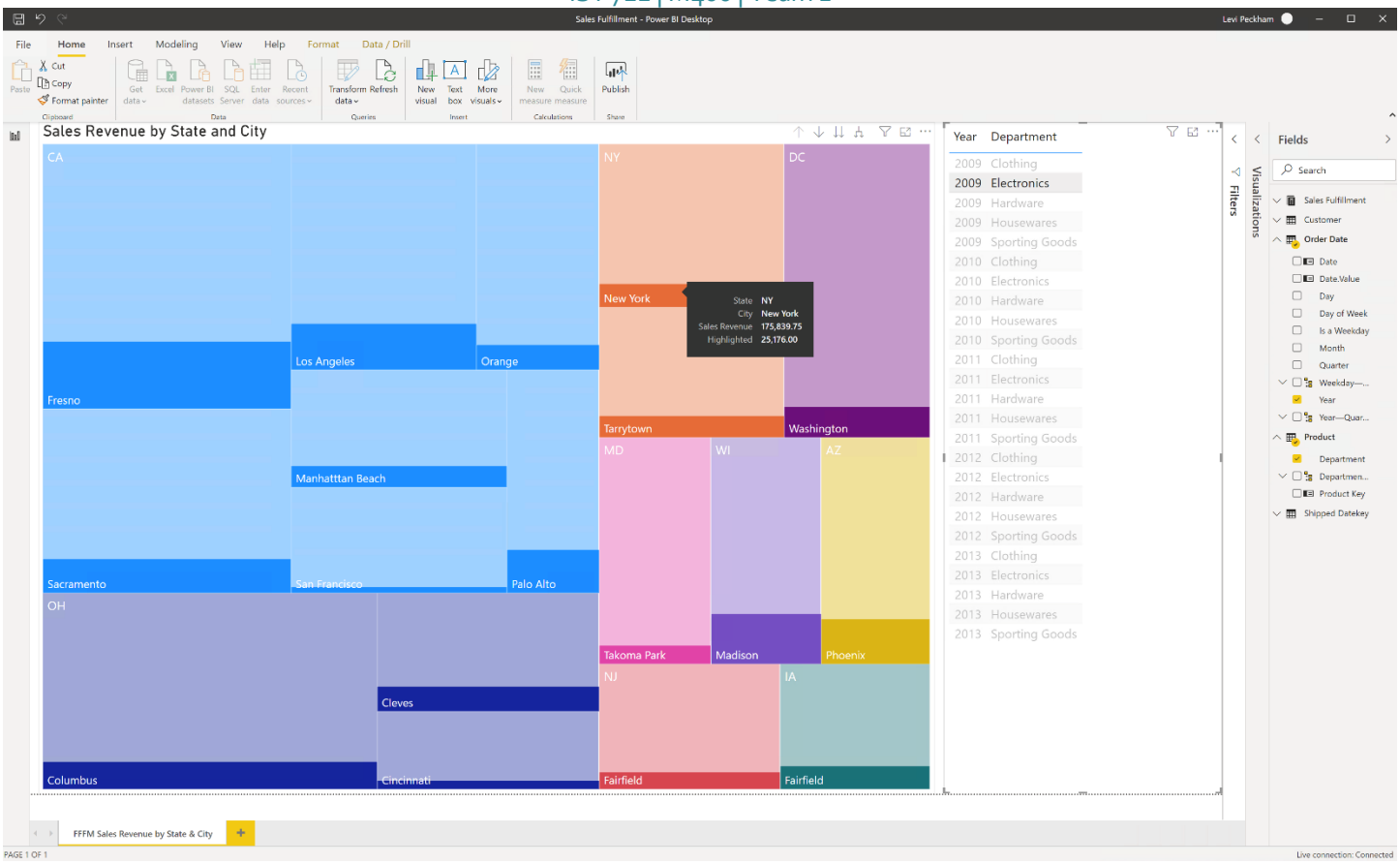
MOLAP




ist722_grblock_oa1(IST-CS-DW1) - Microsoft Visual Studio
File Edit View Project Build Debug Team Format Database Data Source View Cube Tools Test Analyze Window Help
Sign in
Ist722 Grblock Oa1 Dw [Online]
Plan [Online]
FFFM Recommendation Plan [Online]
FFFM Item Analysis [Online]
FFFM Sales Fulfillment [Online]
Cube Structure
Dimension Usage
Calculations
KPIs
Actions
Partitions
Aggregations
Perspectives
Translations
Browser
Measures
FFFM Sales Fulfillment
Sales Fulfillment
Dimensions
FFFM Sales Fulfillment
Shipped Datekey
Order Date
Product
Customer
Data Source View
DimDate
DateKey
Date
FullDateUSA
DayOfWeek
DayName
DayOfMonth
DayOfYear
WeekOfYear
MonthName
MonthOfYear
FactSalesFulfillm...
CustomerKey
ProductKey
OrderDateKey
ShippedDatekey
InsertAuditKey
UpdateAuditKey
OrderID
SalesRevenue
SalesProfit
SalesQuantity
DimProduct
ProductKey
ProductID
ProductName
ProductDepartment
RowIsCurrent
RowStartDate
RowEndDate
RowChangeReason
DimCustomer
CustomerKey
CustomerID
CustomerEmail
CustomerFirstName
CustomerLastName
CustomerAddress
CustomerCity
CustomerState
CustomerZip
RowIsCurrent
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'ist722_grblock_oa1(IST-CS-DW1)' (1 project)
ist722_grblock_oa1(IST-CS-DW1)
Data Sources
Ist722 Grblock Oa1 Dw
Data Source Views
Ist722 Grblock Oa1 Dw
Cubes
FFFM Sales Fulfillment
FFFM Item Analysis
FFFM Recommendation Plan
Dimensions
Date
Product
Customer
Plan
Movie
Mining Structures
Roles
Admin
Assemblies
Solution Explorer
Team Explorer
Properties
Ist722 Grblock Oa1 Dw DataSourceView
Advanced
RetrieveRelationships True
SchemaRestriction
Data
Data Source Ist722 Grblock Oa1 Dw
Description
Name Ist722 Grblock Oa1 Dw
NameMatchingCriteria (none)
Name
Specifies the name of the object.

Visualizations




Sales Fulfillment - Power BI Desktop
Levi Peckham
File
Home
Insert
Modeling
View
Help
Format
Data / Drill
Sales Revenue by State and City
CA
Fresno
Los Angeles
Orange
Manhatttan Beach
Sacramento
San Francisco
Palo Alto
OH
Cleves
Columbus
Cincinnati
NY
New York
Tarrytown
DC
Washington
MD
Takoma Park
WI
Madison
AZ
Phoenix
NJ
Fairfield
IA
Fairfield
State NY
City New York
Sales Revenue 175,839.75
Highlighted 25,176.00
Year Department
2009 Clothing
2009 Electronics
2009 Hardware
2009 Housewares
2009 Sporting Goods
2010 Clothing
2010 Electronics
2010 Hardware
2010 Housewares
2010 Sporting Goods
2011 Clothing
2011 Electronics
2011 Hardware
2011 Housewares
2011 Sporting Goods
2012 Clothing
2012 Electronics
2012 Hardware
2012 Housewares
2012 Sporting Goods
2013 Clothing
2013 Electronics
2013 Hardware
2013 Housewares
2013 Sporting Goods
Fields
Search
Sales Fulfillment
Customer
Order Date
Date
Date.Value
Day
Day of Week
Is a Weekday
Month
Quarter
Year
Product
Department
Product Key
Shipped Datekey
Filters
Visualizations
FFFM Sales Revenue by State & City
PAGE 1 OF 1
Live connection: Connected