



# Fudgemart Fudgeflix

*Project Team Group 5*

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Technical Analyst: Dan Laskowski

Bus. Analyst: Richard Dzidzornu





*View from Fudgemart, Inc Corporate Office*

## DATA WAREHOUSE AND BI SOLUTIONS CHARTER

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Fudgemart, Inc. holds two subsidiary companies: Fudgemart and Fudgeflix. At Fudgemart Inc., functionalities provided by a data warehouse will help the business to make effective, timely, and comprehensive decisions based on shared data to improve customer services and the bottom line.

Efficient:

- Reduce time to information
  - Reduce time to run analytical queries
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Effective:

- Decision makers trust queries and reports
- Analytics use higher quality data

Comprehensive:

- Analytics with integrated data
- Analytics with historical data

This project was initiated due to a lack of centralized data that was leading to disparate data stores, conflicting data assets, and inefficient operational and analytics processes.

For example: Critical information is not making its way into the hands of the key decision makers in the organization because the data is scattered across several business units and there is no way to extract the information in a meaningful way. As a result, several poor decisions have been made that have negatively impacted the organization. Furthermore, IT is becoming overburdened by the number of ad hoc reporting requests they receive. A solution must be developed that allows key decision makers to independently view pertinent information from across the business.

Functional requirements: Establish a data warehouse to store and deliver the organization's data assets.

Project team and process: The project team plans monitored several processes to begin the initiative. Processes were mapped out and broken up into individual steps, in order to identify inefficiencies or potential areas of improvement. Team roles were assigned, weekly meetings held, slack channel and google drive established to assist in collaboration.

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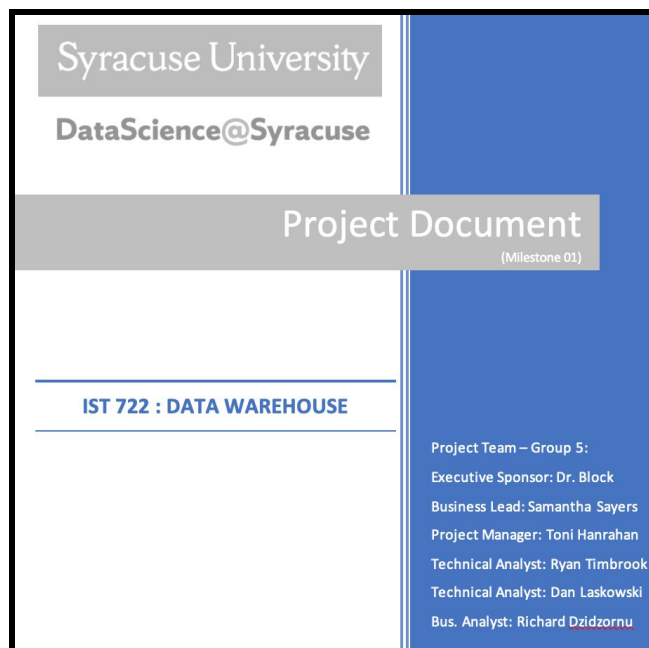
“

What's the most important asset in any organization? Actually, it's data.  
 Without data, do you know your customers - could you understand their needs?  
 Can you figure out what products to put on sale and when, which ones you  
 should discontinue? Or do you know your expenses or even your profitability?

The answer, of course, is no.

-Professor Fudge, Founder Fudgemart, Inc.

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## BUSINESS PROCESSES.

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Business users (Fudgemart) need to be able to analyze which departments sell the most product

Business users (Fudgeflix) need to be able to analyze plan usage popularity and profitability (i.e., do customers prefer instant titles over dvd/bluray or vice versa)

ProjectDocument\_Group5\_IST722\_01292020

## Business Process, High level and Detailed modeling worksheets:

Business Process Name	Fact Table	Fact Type	Grain	Facts	lg_genre_name	lg_movie_id	customer_id	ft_id	int_shipped_date	int_returned_date	account_id	account_idcode	plan_id	plan_name	director_name	director_movie_id	int_queue_date	order_id	product_id	order_qty	review_date	review_stars
Movies per genre	ft_title_genres	Transaction	one row per genre	count of movies per genre	X	X																
Movie Rental length	ft_account_titles	Accumulating snapshot	one rental per row	movie, days of rental				X	X	X	X											
Accounts by area	ft_accounts	Transaction	one row per zipcode	customers, zipcodes				X	X	X	X	X										
Tracking movie rentals by customer	ft_account_titles	Accumulating snapshot	one row per customer per rental	customer, movie, days of rental			X	X	X	X	X											
Customers per plan	ft_plans	Transaction	one row per plan	count of customer per plan				X	X	X	X	X	X	X								
Movies per director	ft_directors	Transaction	one row per director	count of movies per director										X	X	X						
Number of rentals throughout the day by plan	ft_account_titles	Periodic snapshot	one row per hour by weekday per plan	Snapshot by hour per day, rental quantities: plan				X					X	X		X						
Sales reporting	ftm_order_details	Transaction	one row per order detail	count of orders, qty per order and product details														X	X	X		
Product reviews	ftm_customer_product_reviews	Transaction	one review per row	product, customer, date and rating			X												X	X	X	X

Business Process Document: BusinessProcessesWorksheet\_Group5\_IST722\_01292020.xlsx

Business Process Name	Fact Table	Fact Type	Grain	Facts	FtPlans	FtAccounts	FtAccountBilling	FtAccountLineDate	FtAccountTitles	FtTitles	FmCustomers	FmProducts	FmOrders	FmOrderDate	FmOrderShippedDate	FmProductReviewDate	FmProductAddDate
Plan Profitability Analysis Business users (Fudgefix) need to be able to analyze plan usage popularity and profitability (based on delivery method)	FactFtPlanTypeProfits	periodic snapshot	one row per plan / account	plan popularity (i.e., count of customers), plan profitability (i.e., billed amount, not price as the two could be different)	X	X	X	X									
Customer Demand Business users (Fudgefix) need to be able to analyze revenue by Movie Title and Genre on a weekly, monthly, quarterly and annual bases	FactFtCustomerDemand	periodic snapshot	one row per movie title, weekly snapshot	average title rating, count of "views", average billed amount, total number of movie titles purchased, total number of movie titles by genera purchased			X	X	X								

High Level Modeling: Group5\_High-Level-Dimensional-Modeling-Workbook\_Milestone2\_FINAL.xlsx

Table Name		FactFtPlanTypeProfits																	
Table Type		Fact																	
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Size		Y																	
Generate Script?		Y																	
Column Name	Display Name	Description	Example Values	Display Filter	ETL Rules	Comments	Database	Size	Precision	Key?	Target	FK To	NULL?	Default Value	Source System	Source Schema	Source Table	Source Field Name	Source Data Type
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AccountID	AccountID	Key to DimAccounts	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimAccounts	AccountID	N	FK	DimAccounts	AccountID	N	FK	DimAccounts	AccountID	N
ProductID	ProductID	Key to DimProducts	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimProducts	ProductID	N	FK	DimProducts	ProductID	N	FK	DimProducts	ProductID	N
OrderID	OrderID	Key to DimOrders	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N
OrderDate	OrderDate	FK to related dimension for DimOrders	2004-12-31	date	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderDate	N	FK	DimOrders	OrderDate	N	FK	DimOrders	OrderDate	N
OrderQuantity	OrderQuantity	FK to related dimension for DimOrders	1	integer	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N
ProductPrice	ProductPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductPrice	N	FK	DimProducts	ProductPrice	N	FK	DimProducts	ProductPrice	N
ProductRetailPrice	ProductRetailPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N
ProductCategory	ProductCategory	Product category of product	1	integer			FK	PK	DimProducts	ProductCategory	N	FK	DimProducts	ProductCategory	N	FK	DimProducts	ProductCategory	N
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Size		Y																	
Generate Script?		Y																	
Column Name	Display Name	Description	Example Values	Display Filter	ETL Rules	Comments	Database	Size	Precision	Key?	Target	FK To	NULL?	Default Value	Source System	Source Schema	Source Table	Source Field Name	Source Data Type
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OrderID	OrderID	Key to DimOrders	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N
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ProductRetailPrice	ProductRetailPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N
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Bit Filter Logic		none row per account																	
Size		Y																	
Generate Script?		Y																	
Column Name	Display Name	Description	Example Values	Display Filter	ETL Rules	Comments	Database	Size	Precision	Key?	Target	FK To	NULL?	Default Value	Source System	Source Schema	Source Table	Source Field Name	Source Data Type
AccountID	AccountID	Key to DimAccounts	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimAccounts	AccountID	N	FK	DimAccounts	AccountID	N	FK	DimAccounts	AccountID	N
ProductID	ProductID	Key to DimProducts	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimProducts	ProductID	N	FK	DimProducts	ProductID	N	FK	DimProducts	ProductID	N
OrderID	OrderID	Key to DimOrders	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N
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OrderQuantity	OrderQuantity	FK to related dimension for DimOrders	1	integer	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N
ProductPrice	ProductPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductPrice	N	FK	DimProducts	ProductPrice	N	FK	DimProducts	ProductPrice	N
ProductRetailPrice	ProductRetailPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N
ProductCategory	ProductCategory	Product category of product	1	integer			FK	PK	DimProducts	ProductCategory	N	FK	DimProducts	ProductCategory	N	FK	DimProducts	ProductCategory	N
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Size		Y																	
Generate Script?		Y																	
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OrderID	OrderID	Key to DimOrders	1, 2, 3	key	Sample key populates lookup for dimension key		FK	PK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N	FK	DimOrders	OrderID	N
OrderDate	OrderDate	FK to related dimension for DimOrders	2004-12-31	date	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderDate	N	FK	DimOrders	OrderDate	N	FK	DimOrders	OrderDate	N
OrderQuantity	OrderQuantity	FK to related dimension for DimOrders	1	integer	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N
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ProductRetailPrice	ProductRetailPrice	Product price of product	15.95	Amount			FK	PK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N	FK	DimProducts	ProductRetailPrice	N
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OrderQuantity	OrderQuantity	FK to related dimension for DimOrders	1	integer	convert datetime to set of format YYYYMMDD		FK	PK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N	FK	DimOrders	OrderQuantity	N
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Size		Y																	
Generate Script?		Y																	
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Size		Y																	
Generate Script?		Y																	
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OrderQuantity																			

## ENTERPRISE BUS ARCHITECTURE.

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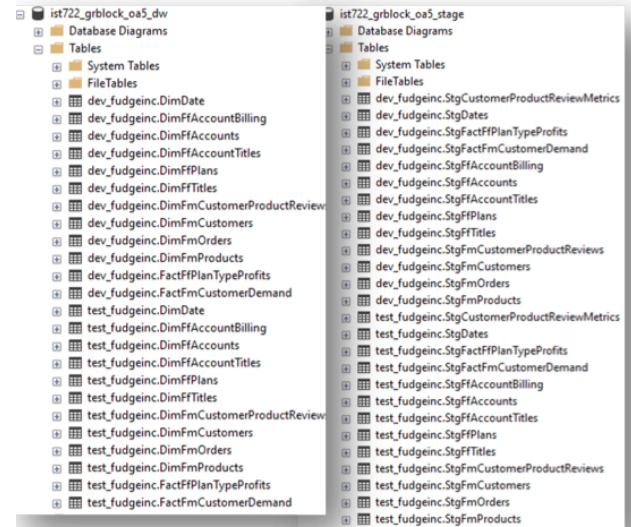
Approach:

Implemented dimensional model design  
in a relational database

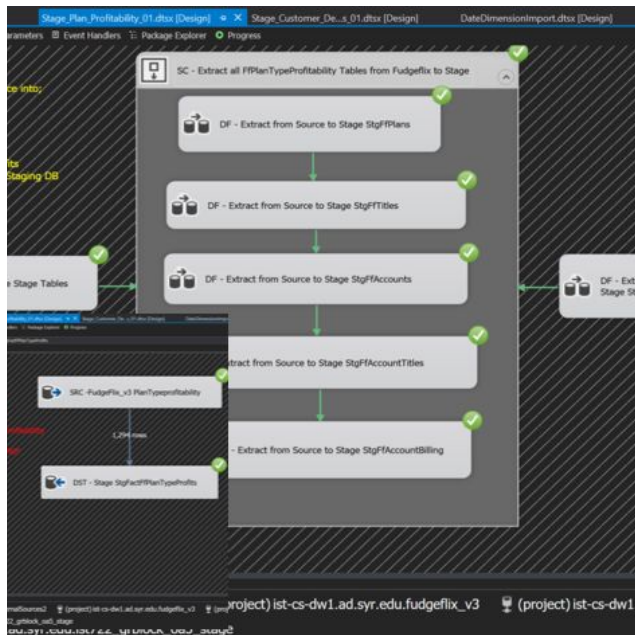
Design:

Physical design included tables,  
keys, constraints, schemas,  
synonyms, and views

Final deliverable: ROLAP star  
schema



*ist722\_grblock\_oa5\_dw & ist722\_grblock\_oa5\_stage*



## ETL IN SSIS.

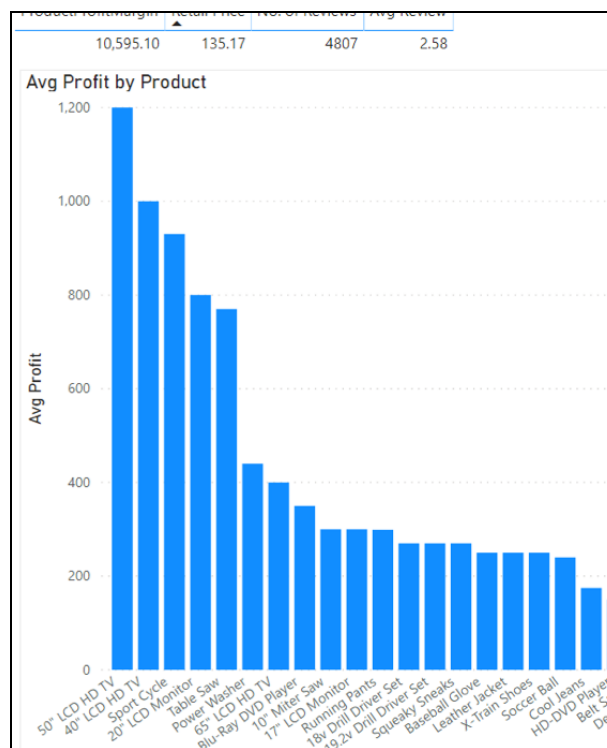
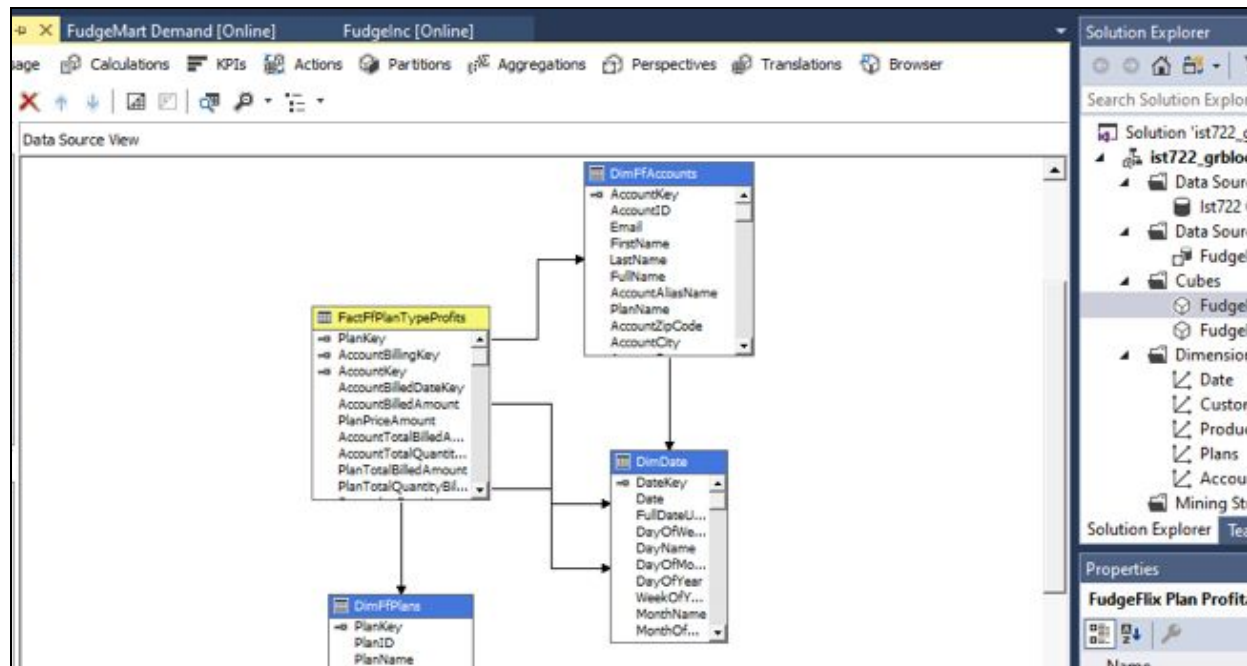
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Source to target map: Data was  
moved first from source to  
stage, then from stage to the  
target tables.

*ETL - SSIS Documentation.docx*



## BUSINESS INTELLIGENCE. SSAS cubes, BI dashboard, BI documentation



### Functional Requirements:

- Business users (Fudgeflix) need to be able to analyze customer preferences and determine if customers prefer instant titles over dvd/blu-ray.
  - Is popularity / profitability varied across different demographics (age, gender, education, income level, etc.)
- Business users (Fudgeflix) need to be able to analyze the availability of different titles (DVD, Blu-ray, Digital) for customers.
- Business user (Fudgeflix) need to be able to analyze the profitability of different titles based on various characteristics (i.e., genre, directors, cast members, etc.) to determine which titles are most profitable.
- Business users (Fudgemart) need to be able to analyze the availability of different titles (DVD, Blu-ray, Digital) to determine which titles work the most overtime (which could be reallocated to other departments).
- Business users (Fudgemart) need to be able to analyze the profitability of different titles based on various characteristics (i.e., genre, directors, cast members, etc.) to determine which titles are most profitable.
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- Business users (FudgeMart, Inc.) need to be able to analyze the availability of different titles (DVD, Blu-ray, Digital) to determine which titles work the most overtime (which could be reallocated to other departments).

SSAS Screenshots\_Final Deliverable.docx; FinalPresentation\_Group5\_IST722.pdf;  
ProjectDocument\_Group5\_IST722\_01292020.pdf