



FudgeWorld

IST722 | JAKE CONARD & MEICHAN HUANG

Fudgeworld - Background

- In 2023 Fudgemart and Fudgeflix merged into a company called Fudgeworld.
- Fudgemart was a retail store that sells different products from their stores.
- Fudgeflix is a company that allows for DVD rentals and also offers some streaming services as well.

The Netflix logo is displayed in a bold, red, sans-serif font against a solid black background.

Fudgeworld – Data Warehouse



Both Fudgemart and Fudgeflex had relational databases before the merger and both companies made a large investment in data and data analysis.



With the new merger management decided that a merged data warehouse was needed to allow data analysis from both companies as well as historical data from prior to the merger.



Management wants the ability to do analysis of Fudgeworld sales while also being able to drill down into the specifics of which business line is contributing to those sales (i.e. fudgemart or fudgeflex)



FudgeWorld – High Level Dimensional Model

- Fact Sales
- Customer Dimension
- Product Dimension
- Date Dimension



FudgeWorld – High Dimensional Model

Instructions!		IST 722 Final Project Jake Conard & Meichan Huang			OrderDate	DimProduct	DimCustomer
Business Process Name	Fact Table	Fact Grain Type	Granularity	Facts			
geworld Sales (FudgeMart + FudgeWorld)	FactSales	Transaction	one row per order detail	Unit Price, Quantity, Total Sales	X	X	X

Instructions!				
Dimension / Fact Table	Attribute / Fact Name	Description	Alternate Names	Sample Values
FactMergedSales	Quantity	Quantity of the product order for FM or total number of plans in FF		10
	UnitPrice	Cost of the product in FM or plan in FF in dollars		14.25
	Discount			0.95
	TotalSales	Quantity * Unity Price		10*14.5
DimDate (order, shipped)	Day			
	Month			
	Year			
	Day of Week			
DimProduct	ProductKey	Key		
	ProductID	Key from source table		
	ProductDepartment	Department of the Product		Clothing
	ProductName	Name of the Product for FM and Name of the Plan for FF		Running Pants
DimCustomer	CustomerKey	Key		
	CustomerID	Key from source table		
	CustomerEmail	Email of the customer		jconard@sur.edu

FudgeWorld – Detailed Dimensional Model

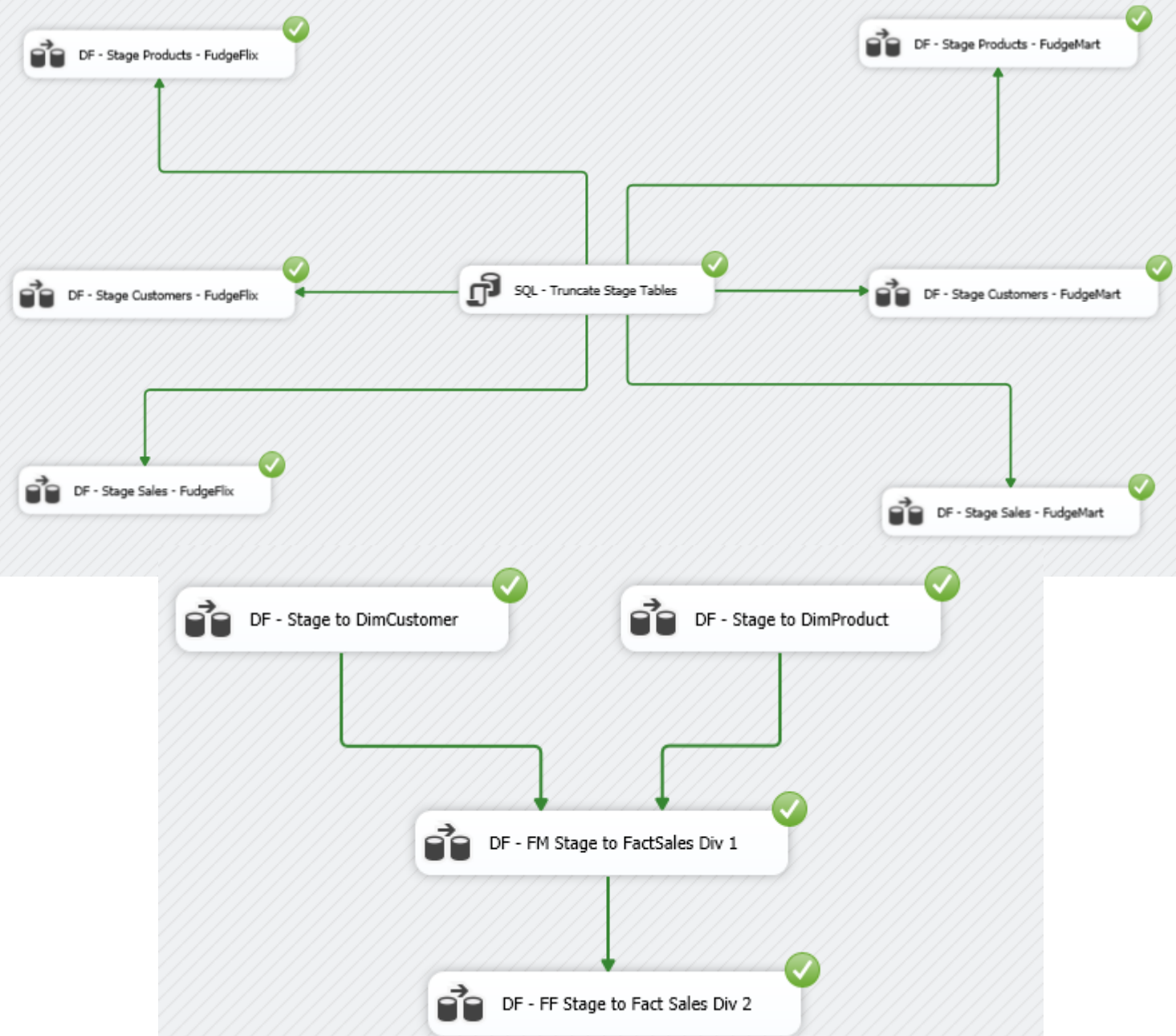
Table Name	FactSales
Table Type	Fact
Display Name	Sales
Database Schema	fudgeworld
Table Description	Sales order information
Comment	
Biz Filter Logic	
Size	
Generate Script?	Y

Column Name	Display Name	ETL Rules	Comments	Datatype	Size	Precision	Key?	Target FK To	NULL?	Default Value	Source System	Source Schema	Source Table
ProductKey	ProductKey	Key lookup from DimProduct.ProductKey		int			FK, PK	DimProduct.ProductKey	N		fudgemart_v3	dbo	fm_products
DivisionID	DivisionID			int			PK		N		derieved		
OrderID	OrderID			int			PK		N		fudgemart_v3	dbo	fm_orders
CustomerKey	CustomerKey	Key lookup from DimCustomer.CustomerKey		int			FK,	DimCustomer.CustomerKey	N		fudgemart_v3	dbo	fm_customer
OrderDateKey	OrderDateKey	Key lookup from DimDate.DateKey		int			FK	DimDate.DateKey	N		fudgemart_v3	dbo	fm_orders
ShippedDateKey	ShippedDateKey	Key lookup from DimDate.DateKey		int			FK	DimDate.DateKey	N		fudgemart_v3	dbo	fm_orders
Quantity	Quantity			smallint					N		fudgemart_v3	dbo	fm_order_detail
SalesAmount	SalesAmount			money					N		fudgemart_v3	dbo	fm_products
CostAmount	DiscountAmount			money					N	0	fudgemart_v3	dbo	fm_products
ProfitAmount	ProfitAmount			money					N		fudgemart_v3	dbo	fm_products

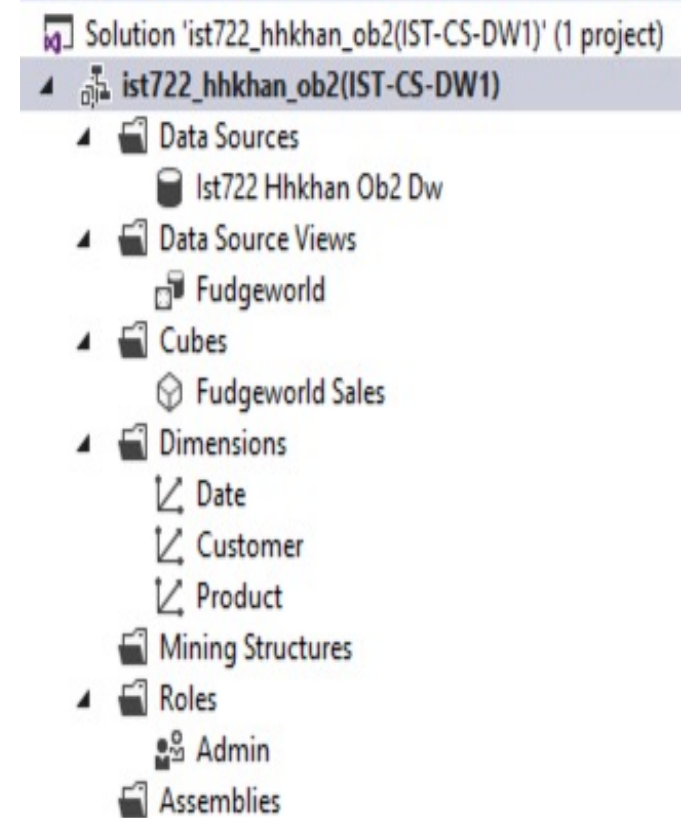
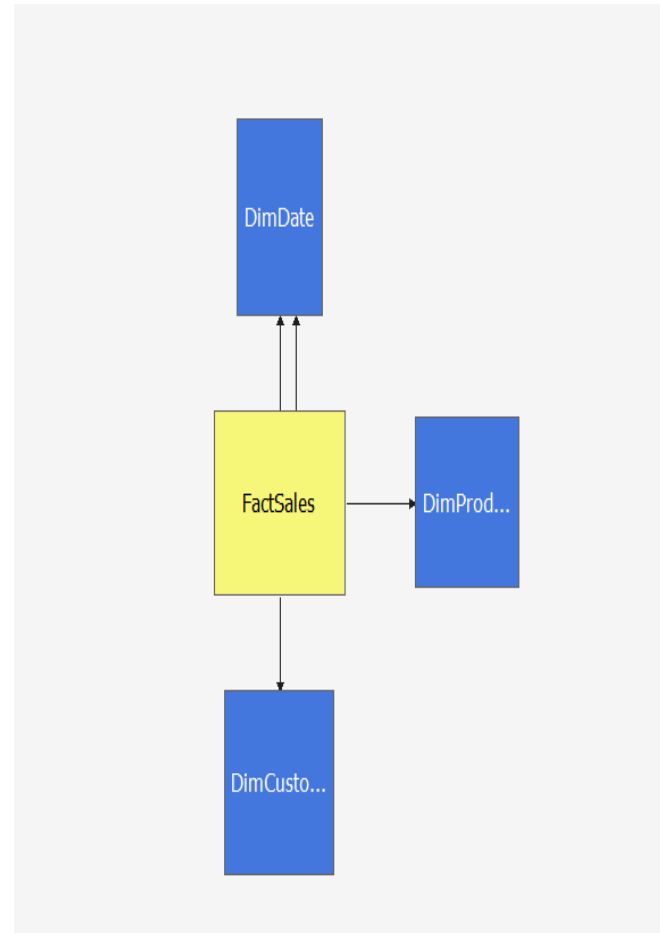
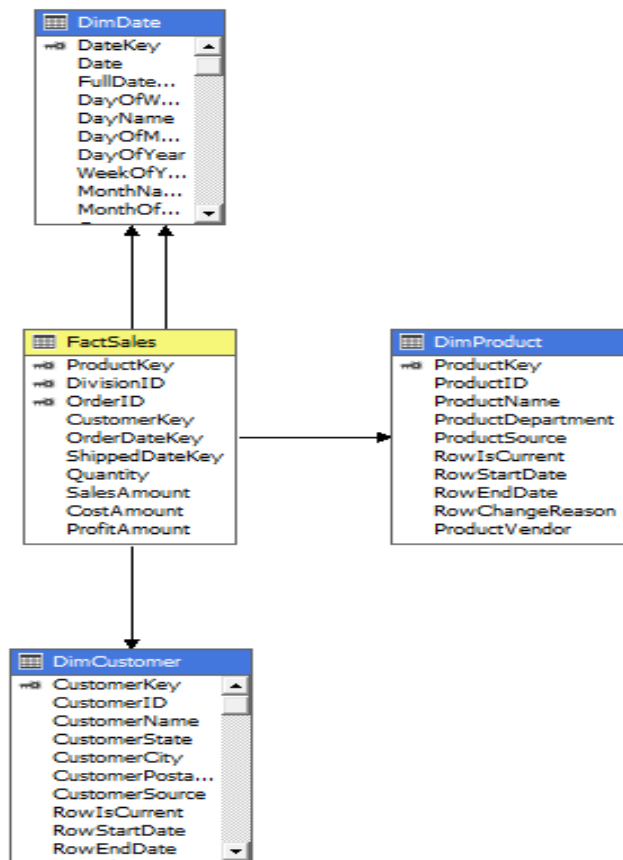
Fudgeworld Data Warehouse - ETL

We utilized Extract, Transform, Load (ETL) to move and transform the data from the original database to a stage database and then finally into the Fudgeworld Data Warehouse.

ETL was complicated because we were creating a data warehouse from two merged companies and data formatting was a problem.



Fudgeworld – MOLAP Cube | Star Schema



FudgeWorld – Key Sales Questions



- What was the most profitable year, quarter, and month for Fudgeworld (fudgemart & fudgeflix respectively)?
- What are the most profitable departments in the Fudgeworld?
- Which state(s) have the highest sales by year?
- What are our top cities in terms of revenue and profitability?

3.01M

Sales Amount

0.86M

Profit Amount

11.76K

Fact Sales Co...

21.76K

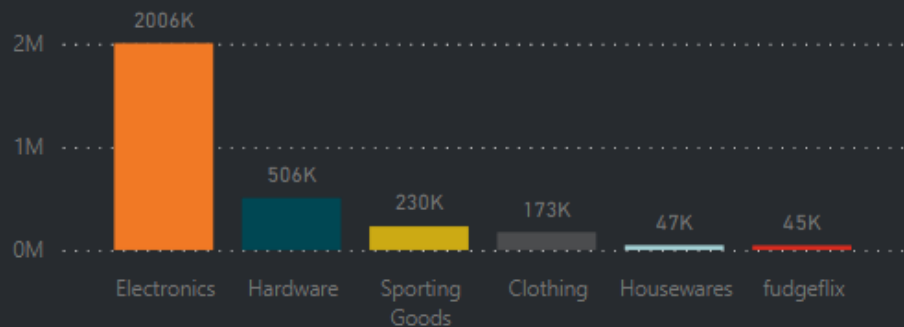
Quantity

Fudgeworld Sales Dashboard

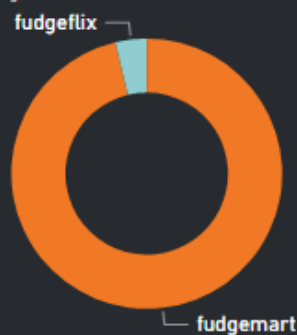
Overview

Regions

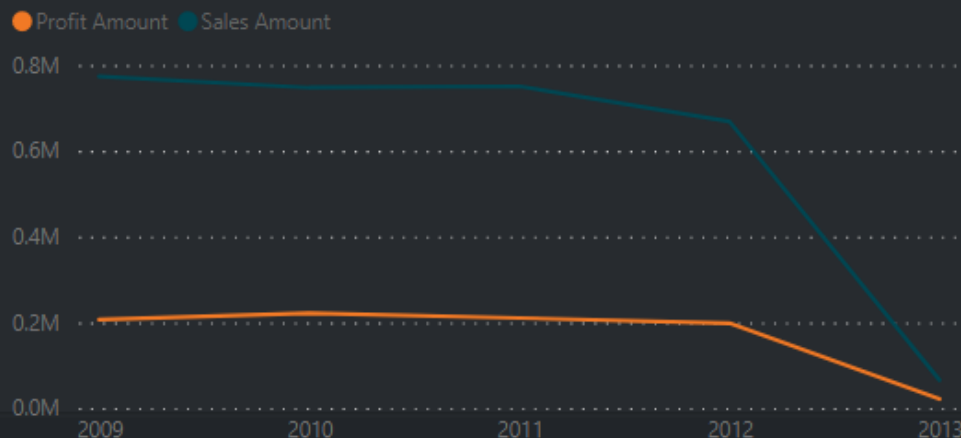
Total Sales by Department



Net Profit by Divisions



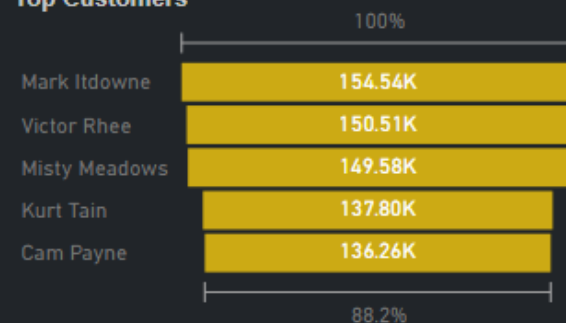
Sales & Profit Trend



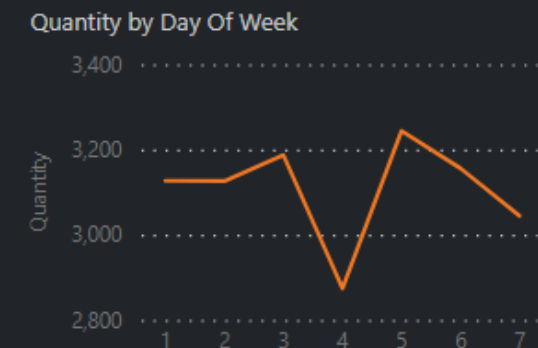
Sales by Regions

State	Sales Amount	Quantity	Profit Amount
CA	1,331,001.15	9065	375,625.15
OH	568,565.57	4107	165,069.57
NY	268,916.67	2055	74,746.67
DC	220,905.66	1780	65,319.66
MD	130,719.23	1019	41,350.23
AZ	133,034.21	978	36,703.21
WI	133,571.06	910	35,824.06
NJ	118,097.80	809	31,110.80
IA	97,271.13	738	27,579.13
VA	1,140.26	74	1,140.26
Total	3,006,200.51	21758	857,446.51

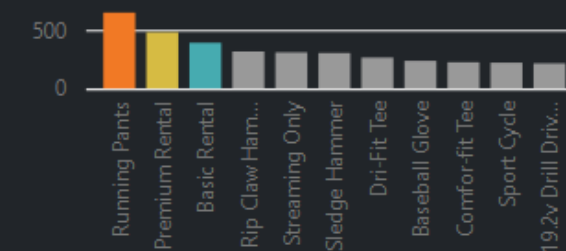
Top Customers



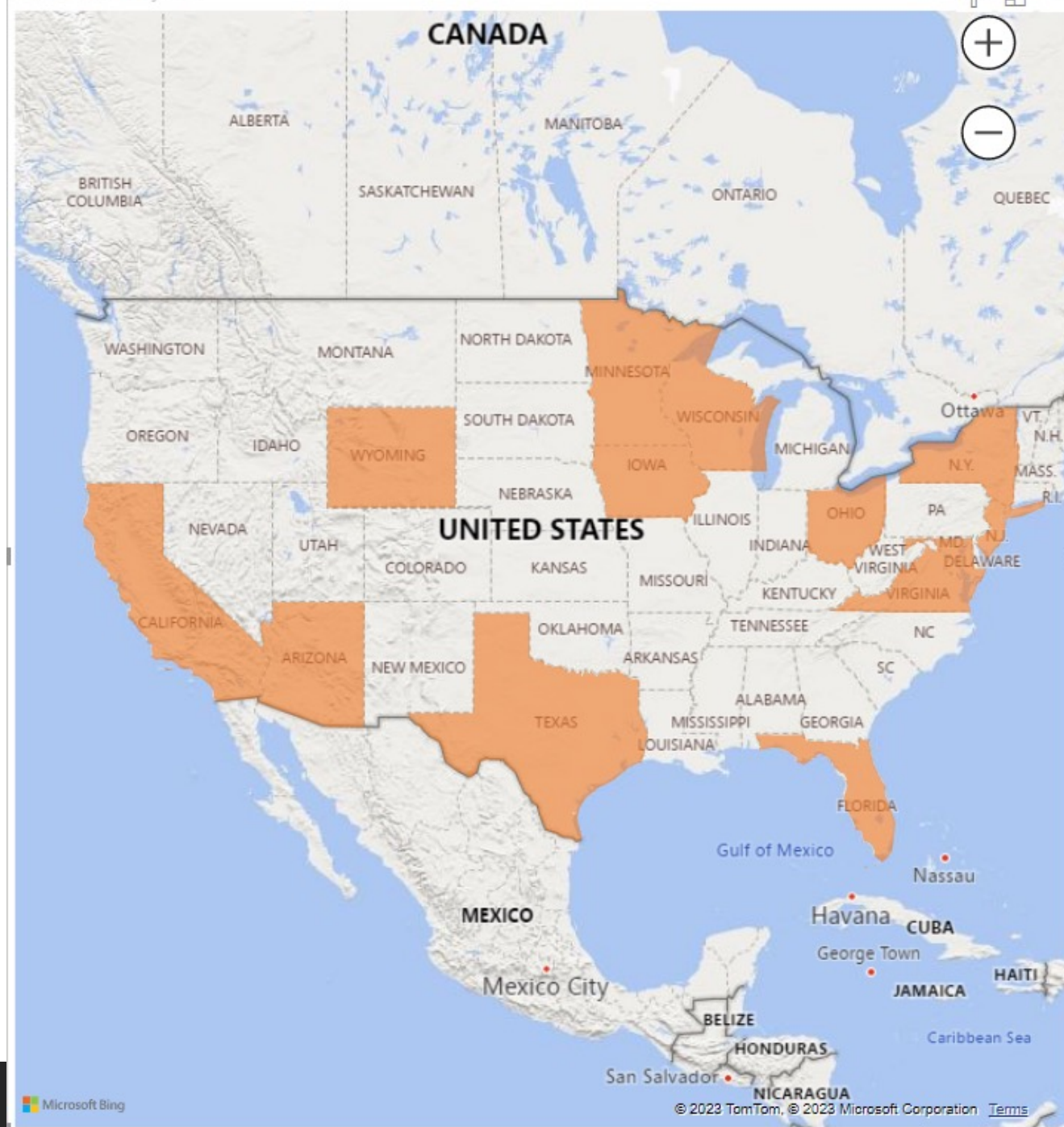
Quantity Sold during a Week



Quantity by Product



Profit Amount by State



CustSource City	fudgeflex		fudgemart		Total	
	Sales Amount	Profit Amount	Sales Amount	Profit Amount	Sales Amount	Profit Amount
FRESNO			356,576.20	101,461.20	356,576.20	101,461.20
COLUMBUS	323.63	323.63	342,487.60	100,886.60	342,811.23	101,210.23
SACRAMENTO	343.63	343.63	239,169.40	65,877.40	239,513.03	66,221.03
LOS ANGELES	323.63	323.63	225,694.05	65,005.05	226,017.68	65,328.68
WASHINGTON	1,076.26	1,076.26	219,829.40	64,243.40	220,905.66	65,319.66
FAIRFIELD	739.63	739.63	214,629.30	57,950.30	215,368.93	58,689.93
NEW YORK	1,605.89	1,605.89	149,582.30	38,800.30	151,188.19	40,406.19
ORANGE			150,509.20	38,763.20	150,509.20	38,763.20
CLEVES	739.63	739.63	136,258.40	34,337.40	136,998.03	35,077.03
MADISON	323.63	323.63	132,458.80	34,711.80	132,782.43	35,035.43
MANHATTAN BEACH			132,615.15	37,765.15	132,615.15	37,765.15
PHOENIX	323.63	323.63	132,251.95	35,920.95	132,575.58	36,244.58
TAKOMA PARK			129,949.60	40,580.60	129,949.60	40,580.60
TARRYTOWN			113,857.05	30,469.05	113,857.05	30,469.05
PALO ALTO			113,363.10	30,734.10	113,363.10	30,734.10
SAN FRANCISCO			111,065.90	34,010.90	111,065.90	34,010.90
CINCINNATI	498.63	498.63	87,934.05	27,960.05	88,432.68	28,458.68
SYRACUSE	2,088.53	2,088.53			2,088.53	2,088.53
BALTIMORE	1,093.26	1,093.26			1,093.26	1,093.26
MARION	788.63	788.63			788.63	788.63
ALEXANDRIA BAY	739.63	739.63			739.63	739.63
LAKE PLACID	739.63	739.63			739.63	739.63
FE WARREN AFB	725.63	725.63			725.63	725.63
PORT EWEN	719.64	719.64			719.64	719.64
LYNCHBURG	631.63	631.63			631.63	631.63
ANAHEIM	508.63	508.63			508.63	508.63
DONIE	508.63	508.63			508.63	508.63
GLEN ALLEN	508.63	508.63			508.63	508.63
MANHATTAN BEACH	508.63	508.63			508.63	508.63
CASA GRANDE	458.63	458.63			458.63	458.63
ROCHESTER	348.63	348.63			348.63	348.63
FAIRBANKS	331.62	331.62			331.62	331.62
BUFFALO	323.63	323.63			323.63	323.63
OAKVILLE	323.63	323.63			323.63	323.63
OCALA	323.63	323.63			323.63	323.63
Total	17,969.06	17,969.06	2,988,231.45	839,477.45	3,006,200.51	857,446.51

Issues / Improvements

Design for Fudgeflix input was not perfect. If we had more time would like to fix this to allow for more insight into FudgeFlix sales.

Ran into some issues with the upper and lower casing of City Names in FudgeMart and FudgeFlix data.

ETL process was very challenging and took a majority of the time.

Questions?

