

# TASK DOCUMENTATION

By : Ammar Allam





# Welcome to the fashion world

As a BI developer, passionate about data. I would like to share my journey through a challenging task.

The task was to analyze and transform retail invoice data collected monthly from February to May.



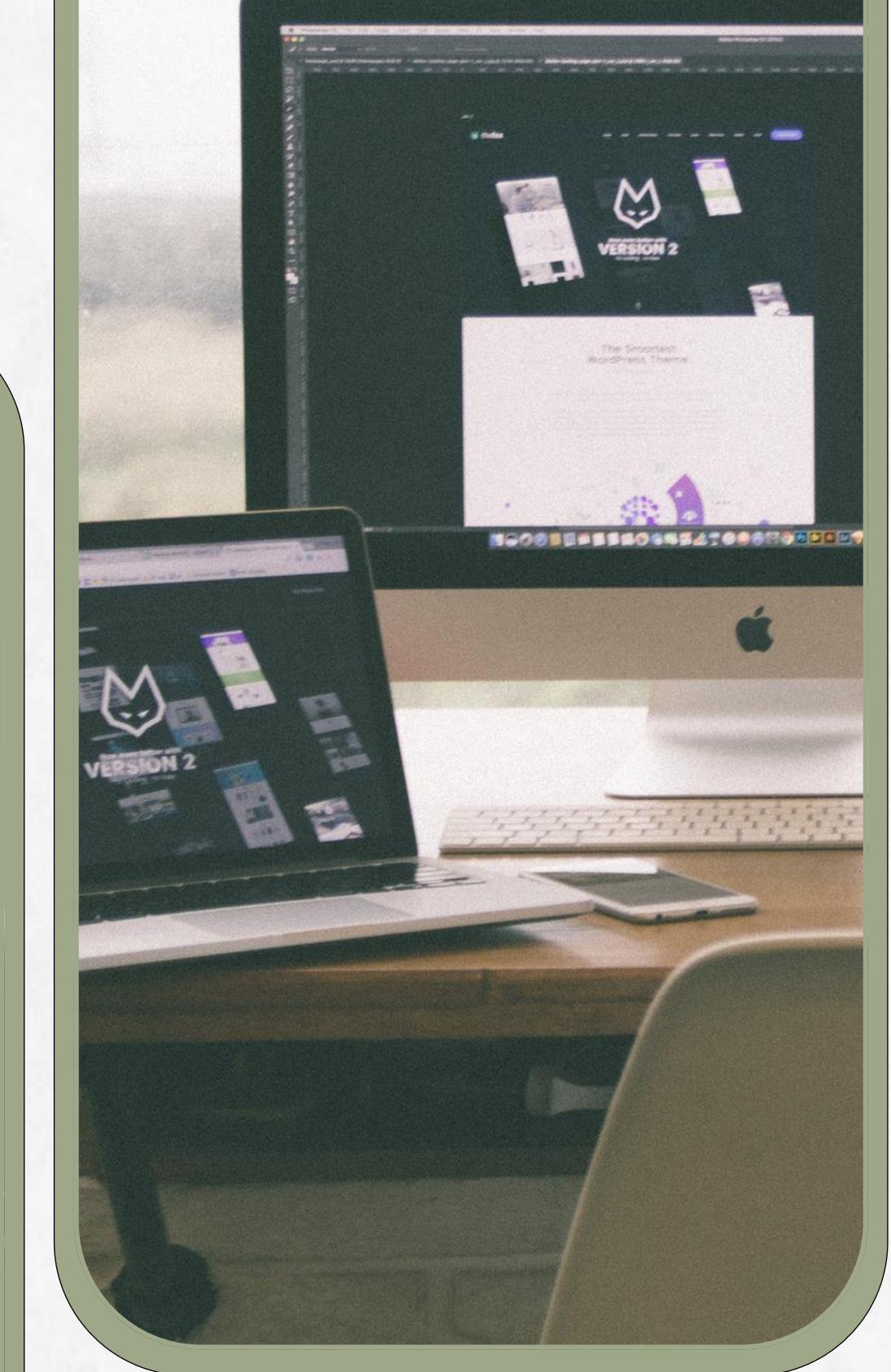
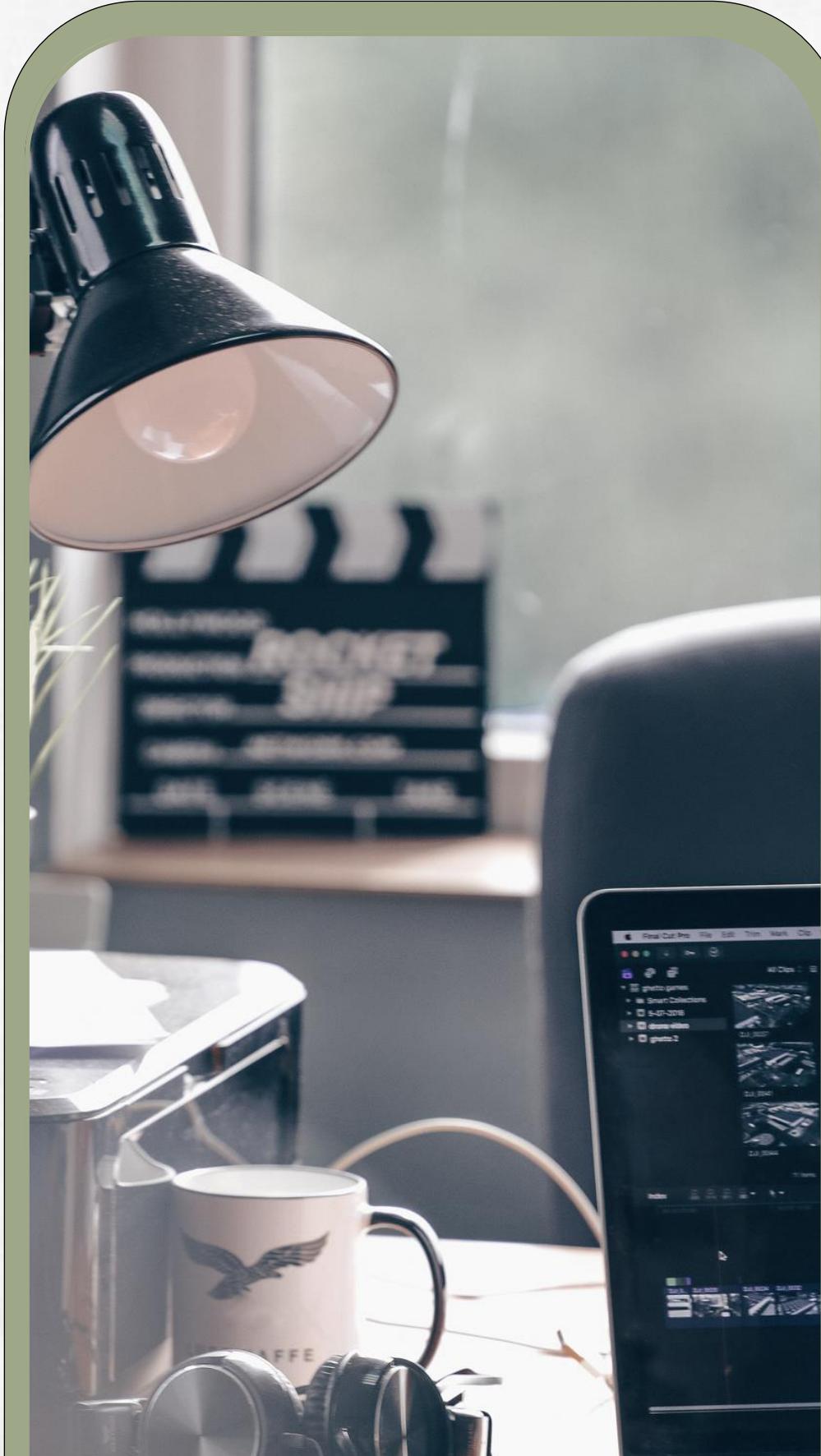
# Welcome to the fashion world

The data was divided into four sheets: Sales, Products, Reps, and Stores.

The goal was to create a comprehensive solution using various tools and present it effectively.

# STEPS INDEX

- Excel
- SQL
- SSIS
- Power Query
- Power bi
- Presentation



# EXCEL

- Reading the data
- Cleaning Data
- Creating some calculations and lookups

Top 20 Products per Sold		Top 10 Reps per Count of Order number		Top 10 Brand per Value		Worst 10 Brand per Value	
Product ID	Sold Amount	Rep Name	Orders	Brand	Sales	Brand	Sales
462	1193	Essam	1178	L.O.L Surprise	\$ 162,750	Craftabelle	\$ 225.00
4028	421	Bassem	1075	Pokémon	\$ 160,569	POP CORN	\$ 182.50
4078	404	Ahmed	909	X-Shot	\$ 129,223	BOBOO	\$ 122.50
4090	327	Shady	646	Rainbocorns	\$ 109,388	CUP CAKE	\$ 80.00
4079	325	Omar	596	Rainbow High	\$ 78,239	CRACKERS	\$ 72.50
465	286	Alaa	534	Nilco	\$ 64,103	SNACK & GO	\$ 67.50
470	227	Nora	473	Match Attax	\$ 55,665	Slice CAKE	\$ 40.00
4092	188	Asya	409	Our Generation	\$ 53,507	Sticks	\$ 20.00
471	183	Ola	369	Goo Jit Zu	\$ 47,035	So Glow	\$ -
4091	176	Yara	337	Style 4 Ever	\$ 42,918	Magic Mixies	\$ -
475	138	Grand Total	6526	Grand Total	\$ 903,395	Grand Total	\$ 810.00
11	132						
386	127						
476	115						
4088	107						
474	106						
4202	100						
392	97						
4087	93						
4089	91						
Grand Total	4836						

Dashboard Overview																		
Key Metrics		Regional Performance								Operational Data								
Sales & Profitability		North America				Europe				Asia-Pacific			Logistics		Inventory		Customer Support	
Period	Region	Sales	Profit	Margin %	Units Sold	Sales	Profit	Margin %	Units Sold	Sales	Profit	Margin %	Shipments	Avg. Lead Time	Stock Level	Open Tickets	Resolution Rate	
Q1 2024	North America	\$1,250,000	\$300,000	24%	50,000	\$900,000	\$225,000	25%	45,000	\$650,000	\$162,500	23%	1,500	3 days	10,000	150	95%	
Q1 2024	Europe	\$800,000	\$180,000	22%	35,000	\$600,000	\$150,000	23%	30,000	\$450,000	\$135,000	22%	1,200	4 days	8,000	120	92%	
Q1 2024	Asia-Pacific	\$500,000	\$120,000	20%	25,000	\$350,000	\$90,000	21%	20,000	\$250,000	\$62,500	19%	1,000	5 days	6,000	100	88%	
Q2 2024	North America	\$1,300,000	\$320,000	25%	52,000	\$920,000	\$240,000	26%	47,000	\$680,000	\$170,000	24%	1,550	2.8 days	9,500	160	96%	
Q2 2024	Europe	\$820,000	\$185,000	23%	36,000	\$620,000	\$155,000	24%	31,000	\$460,000	\$140,000	22.5%	1,250	3.5 days	7,500	130	93%	
Q2 2024	Asia-Pacific	\$520,000	\$130,000	21%	26,000	\$360,000	\$95,000	22.5%	21,000	\$260,000	\$65,000	20.5%	1,050	4.2 days	6,500	110	90%	
Q3 2024	North America	\$1,350,000	\$340,000	26%	54,000	\$950,000	\$250,000	27%	49,000	\$700,000	\$180,000	25%	1,600	2.5 days	10,500	170	97%	
Q3 2024	Europe	\$840,000	\$190,000	24%	37,000	\$640,000	\$160,000	25%	32,000	\$480,000	\$150,000	23.5%	1,300	3.2 days	8,500	140	94%	
Q3 2024	Asia-Pacific	\$540,000	\$135,000	22.5%	27,000	\$380,000	\$98,000	23.5%	22,000	\$270,000	\$68,000	21.5%	1,100	4.8 days	7,000	100	89%	
Q4 2024	North America	\$1,400,000	\$360,000	27%	56,000	\$980,000	\$260,000	28%	51,000	\$720,000	\$190,000	26%	1,650	2.2 days	11,000	180	98%	
Q4 2024	Europe	\$860,000	\$195,000	25%	38,000	\$660,000	\$170,000	26%	33,000	\$500,000	\$145,000	24.5%	1,350	3.0 days	9,000	150	95%	
Q4 2024	Asia-Pacific	\$560,000	\$140,000	23.5%	28,000	\$400,000	\$100,000	22.5%	23,000	\$280,000	\$70,000	22.5%	1,000	5.5 days	6,000	90	87%	
Product Line Performance		Product Line A								Product Line B								
Category	Product	Units Sold	Revenue	Gross Margin	Profit	Category	Product	Revenue	Gross Margin	Profit	Category	Product	Revenue	Gross Margin	Profit	Category	Product	
Electronics	Smartphones	120,000	\$1,500,000	45%	\$675,000	Electronics	Tablets	\$800,000	40%	\$320,000	Apparel	Clothing	\$900,000	35%	\$315,000	Apparel	Accessories	
Electronics	Laptops	80,000	\$1,000,000	40%	\$400,000	Electronics	Peripherals	\$500,000	35%	\$175,000	Apparel	Footwear	\$700,000	30%	\$210,000	Apparel	Outerwear	
Electronics	Monitors	60,000	\$700,000	35%	\$245,000	Electronics	Storage	\$400,000	30%	\$120,000	Apparel	Hats	\$600,000	25%	\$150,000	Apparel	Scarves	
Electronics	Headphones	40,000	\$500,000	30%	\$150,000	Electronics	Power Banks	\$300,000	25%	\$75,000	Apparel	Gloves	\$500,000	20%	\$125,000	Apparel	Glasses	
Electronics	Smartwatches	30,000	\$400,000	25%	\$100,000	Electronics	Cameras	\$200,000	20%	\$50,000	Apparel	Socks	\$400,000	15%	\$60,000	Apparel	Ties	
Employee Productivity		Productivity Score								Training Progress								
Role	Employee	Score	Progress	Completion %	Hours Trained	Role	Employee	Score	Progress	Completion %	Role	Employee	Score	Progress	Completion %	Role	Employee	
Manager	John Doe	85	High	95%	100	Manager	Sarah Johnson	80	Medium	85%	Manager	David Wilson	88	High	92%	Manager	Michael Chen	
Manager	Jane Smith	82	Medium	88%	95	Manager	Emily Davis	78	Low	75%	Manager	Robert Green	84	Medium	80%	Manager	Laura Brown	
Manager	Chris Williams	87	High	93%	105	Manager	James Anderson	81	Medium	82%	Manager	Sarah Lee	86	High	90%	Manager	Matthew White	
Manager	Olivia Parker	83	Medium	86%	98	Manager	Daniel Wilson	79	Low	74%	Manager	Elizabeth Green	85	Medium	79%	Manager	William Parker	
Manager	Alexander Thompson	86	High	91%	102	Manager	Isabella Lee	77	Low	72%	Manager	Christopher White	83	Medium	77%	Manager	Elizabeth Parker	
Customer Feedback Analysis		Feedback Score								Sentiment Analysis								
Category	Product	Score	Progress	Completion %	Hours Trained	Category	Product	Score	Progress	Completion %	Category	Product	Score	Progress	Completion %	Category	Product	
Customer Support	Support A	4.5	High	95%	100	Customer Support	Support B	4.2	Medium	88%	Customer Support	Support C	4.8	High	92%	Customer Support	Support D	
Customer Support	Support E	4.1	Medium	85%	95	Customer Support	Support F	3.9	Low	75%	Customer Support	Support G	4.6	Medium	80%	Customer Support	Support H	
Customer Support	Support I	4.3	High	90%	105	Customer Support	Support J	4.0	Medium	82%	Customer Support	Support K	4.7	High	88%	Customer Support	Support L	
Customer Support	Support M	4.2	Medium	86%	98	Customer Support	Support N	3.8	Low	74%	Customer Support	Support O	4.5	Medium	79%	Customer Support	Support P	
Customer Support	Support Q	4.4	High	91%	102	Customer Support	Support R	4.1	Medium	78%	Customer Support	Support S	4.6	Medium	76%	Customer Support	Support T	
Market Share & Competitor Analysis		Market Share								Competitor Analysis								
Category	Product	Share	Progress	Completion %	Hours Trained	Category	Product	Share	Progress	Completion %	Category	Product	Share	Progress	Completion %	Category	Product	
Market A	Product A	35%	High	95%	100	Market A	Product B	28%	Medium	88%	Market A	Product C	32%	High	92%	Market A	Product D	
Market A	Product E	30%	Medium	85%	95	Market A	Product F	25%	Low	75%	Market A	Product G	33%	Medium	80%	Market A	Product H	
Market A	Product I	31%	High	90%	105	Market A	Product J	27%	Medium	82%	Market A	Product K	34%	High	88%	Market A	Product L	
Market A	Product M	32%	Medium	86%	98	Market A	Product N	26%	Low	74%	Market A	Product O	36%	Medium	79%	Market A	Product P	
Market A	Product Q	33%	High	91%	102	Market A	Product R	29%	Medium	78%	Market A	Product S	35%	Medium	76%	Market A	Product T	
Strategic Initiatives & Future Outlook		Initiative Progress								Future Outlook								
Category	Initiative	Progress	Completion %	Hours Trained	Category	Initiative	Progress	Completion %	Hours Trained	Category	Initiative	Progress	Completion %	Hours Trained	Category	Initiative	Progress	
Strategic Planning	Market Expansion	High	95%	100	Strategic Planning	Market Expansion	High	95%	100	Strategic Planning	Market Expansion	High	95%	100	Strategic Planning	Market Expansion	High	
Strategic Planning	Digital Transformation	Medium	85%	95	Strategic Planning	Digital Transformation	Medium	85%	95	Strategic Planning	Digital Transformation	Medium	85%	95	Strategic Planning	Digital Transformation	Medium	
Strategic Planning	Innovation Pipeline	High	90%	105	Strategic Planning	Innovation Pipeline	High	90%	105	Strategic Planning	Innovation Pipeline	High	90%	105	Strategic Planning	Innovation Pipeline	High	
Strategic Planning	Supply Chain Optimization	Medium	86%	98	Strategic Planning	Supply Chain Optimization	Medium	86%	98	Strategic Planning	Supply Chain Optimization	Medium	86%	98	Strategic Planning	Supply Chain Optimization	Medium	

# SQL



- Creating a Data Warehouse
- Hosting the star schema and creating the modeling of DWH

Object Explorer

SQLQuery4.sql - (I...E\Ammar Yaser (72)) X SQLQuery3.sql - (I...E\Ammar Yaser (67)) SQLQuery2.sql - (I...E\Ammar Yaser (69))

Object Explorer

Bingo DWH

- Database Diagrams
- dbo.DWH Schema

Tables

- System Tables
- FileTables
- External Tables
- Graph Tables
- dbo.Dim\_Product
- dbo.Dim\_Reps
- dbo.Dm\_Stores
- dbo.Fact\_Sales

Views

External Resources

Synonyms

Programmability

Service Broker

Storage

Security

Company assignment

Company\_SD

DB1

ITI

iutt

LC

MyDWH

mytest

Olist

Olist\_DWH

\*\*\*\*\* Script for SelectTopNRows command from SSMS \*\*\*\*\*

```
SELECT TOP (1000) [ProductID]
    ,[ProductCode]
    ,[Description]
    ,[Category]
    ,[Subcategory]
    ,[Brand]
FROM [Bingo DWH].[dbo].[Dim_Product]
```

90 %

Results Messages

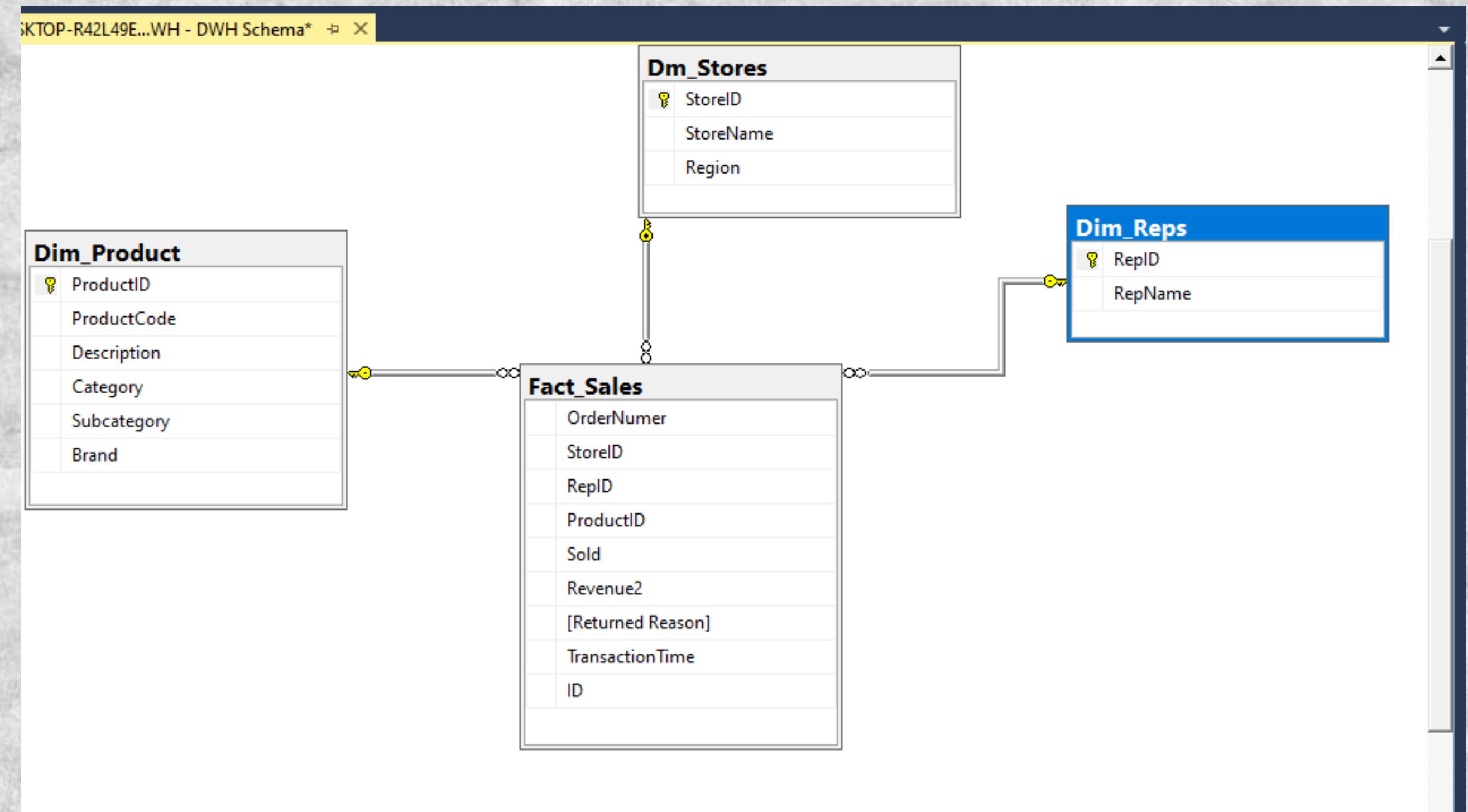
	ProductID	ProductCode	Description	Category	Subcategory	Brand
1	2	ZUR-9616	COCO Surprise Squishies S1.6pcs PDQ	Plush & Soft Toys	Non Battery	COCO SURPRISE
2	3	ZUR-9601-H	COCO Surprise Cones Classics-Silvy PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
3	4	ZUR-9601-G	COCO Surprise Cones Classics-Fizzy PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
4	5	ZUR-9601-E	COCO Surprise Cones Classics-Mitty PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
5	6	ZUR-9601-D	COCO Surprise Cones Classics-Poncho PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
6	7	ZUR-9601-B	COCO Surprise Cones Classics-Bon-Bon PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
7	8	ZUR-9601-A	COCO Surprise Cones Classics-Spritz PDQ (12 PCS)	Plush & Soft Toys	Non Battery	COCO SURPRISE
8	9	ZUR-9262	Rainbocom Big Surprise Unicorn Rescue Big Size	Surprise	Egg	Rainbocom
9	10	ZUR-9261	Zuru Rainbocomspuppycom Rescue Magic Peel Reve...	Surprise	Egg	Rainbocom
10	11	ZUR-9259	Zuru Rainbocom KitTYcom Magic Glowing 10 Surpris...	Surprise	Egg	Rainbocom
11	12	ZUR-9258	Zuru Rainbocom Eggzania Surprise Mania Over 20 S...	Surprise	Egg	Rainbocom

Query executed successfully.

(local) (15.0 RTM) DESKTOP-R42L49E\Ammar ...

# Star Schema

It enhances analytical reporting by providing faster query response times and easier data navigation due to its simplified design.



# SSIS



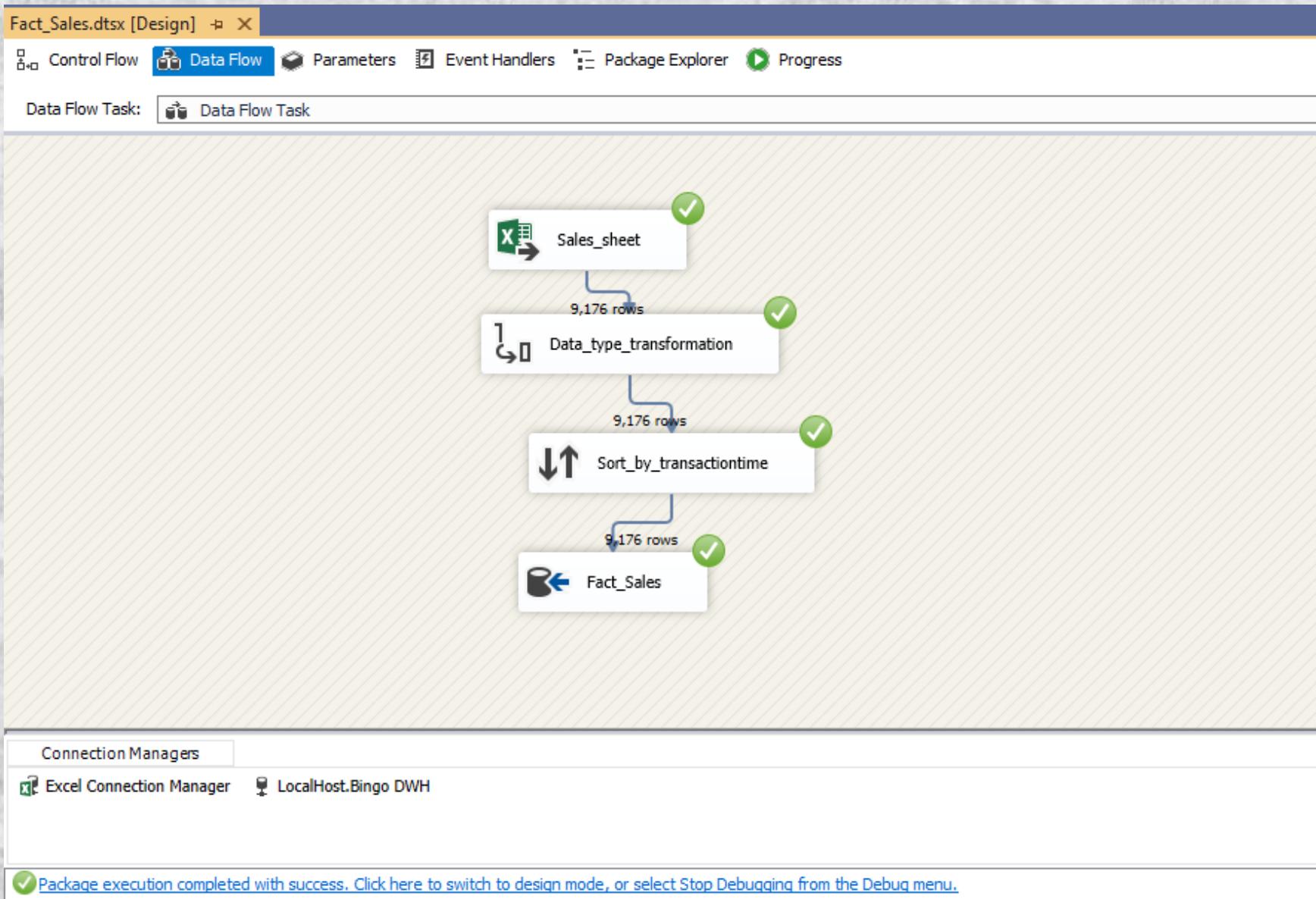
Creating data types transformation and sorting the data



Defining the fact tables and dimension tables

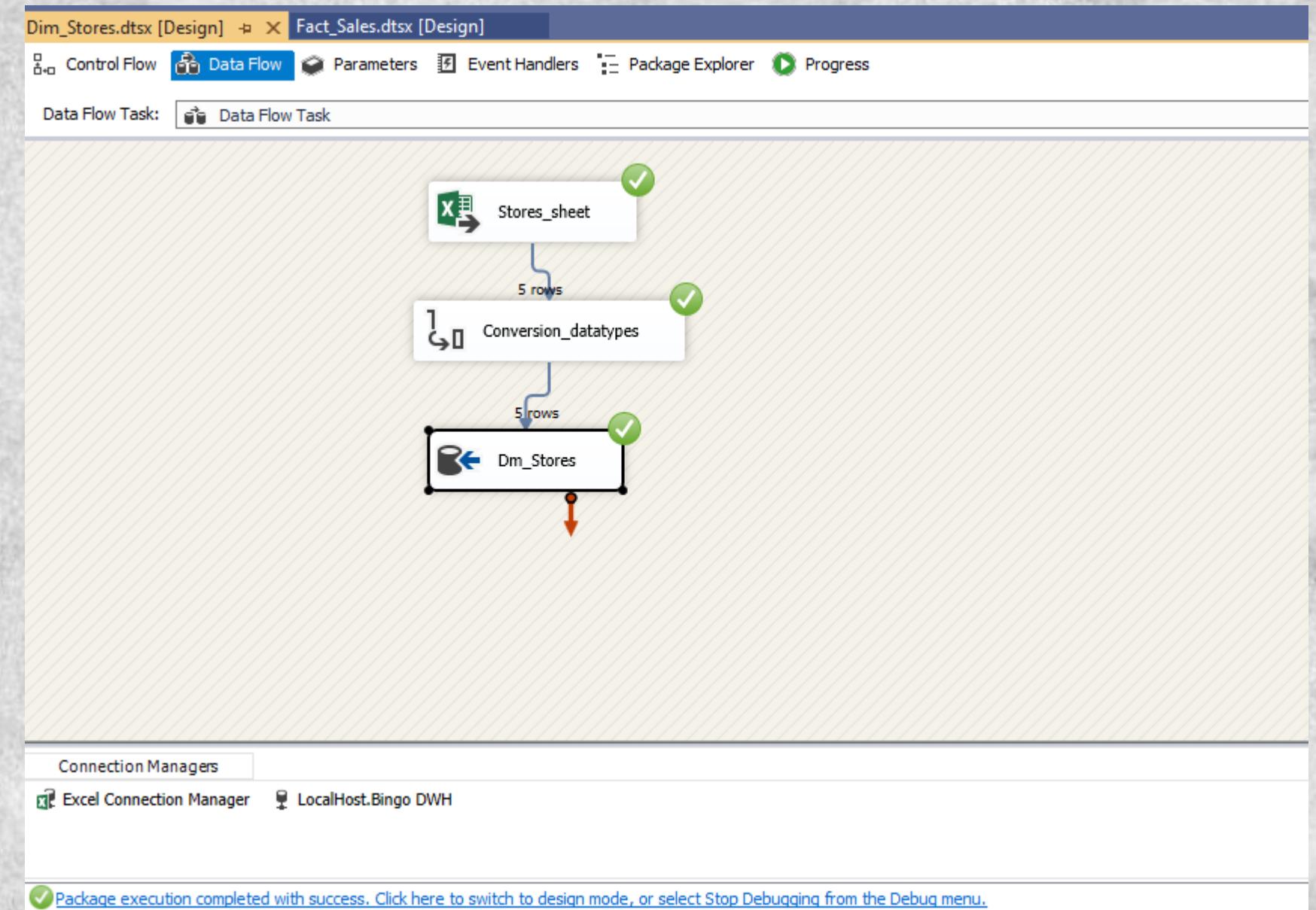


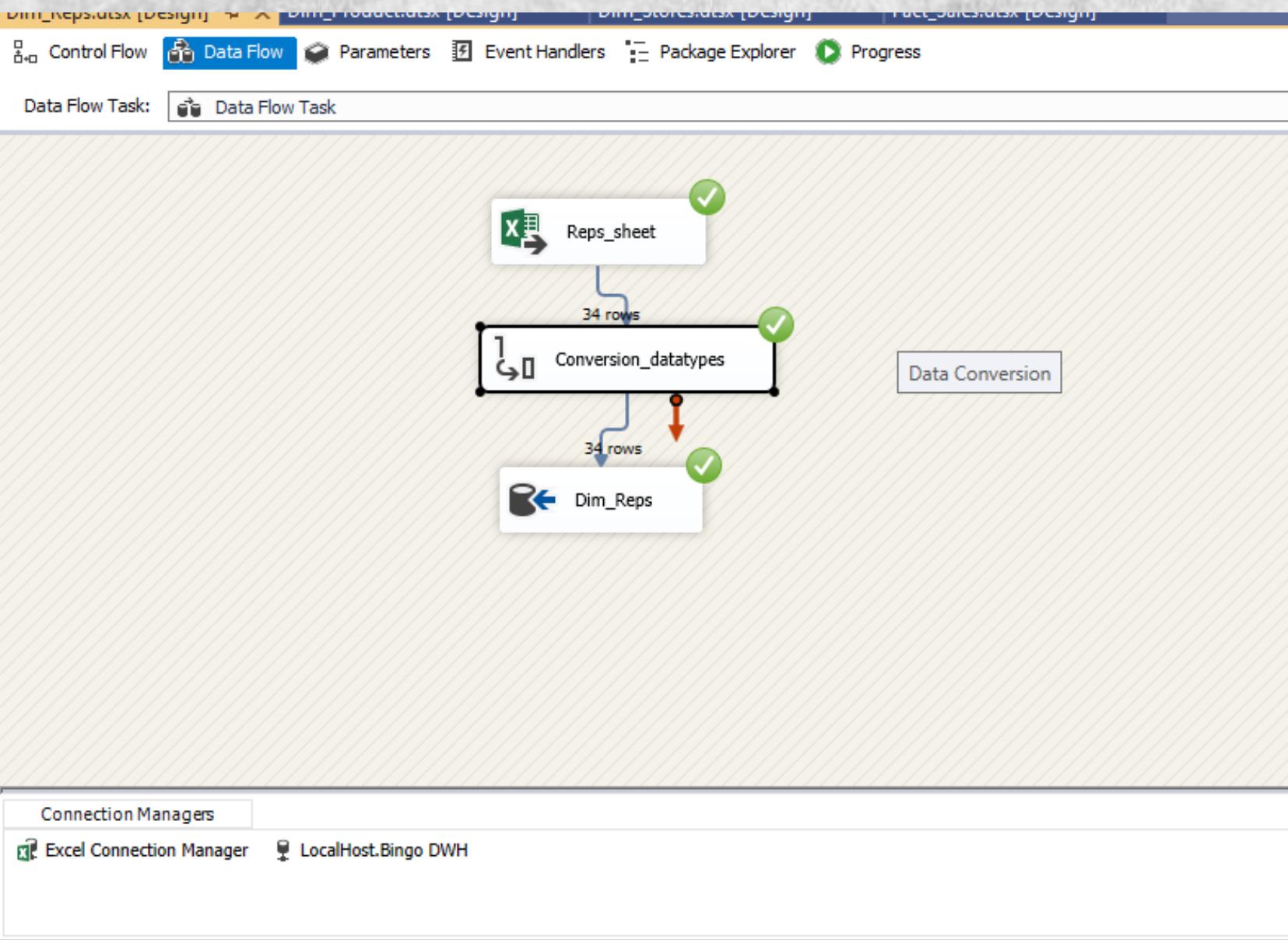
Creating ETL pipelines to populate the data into the DWH



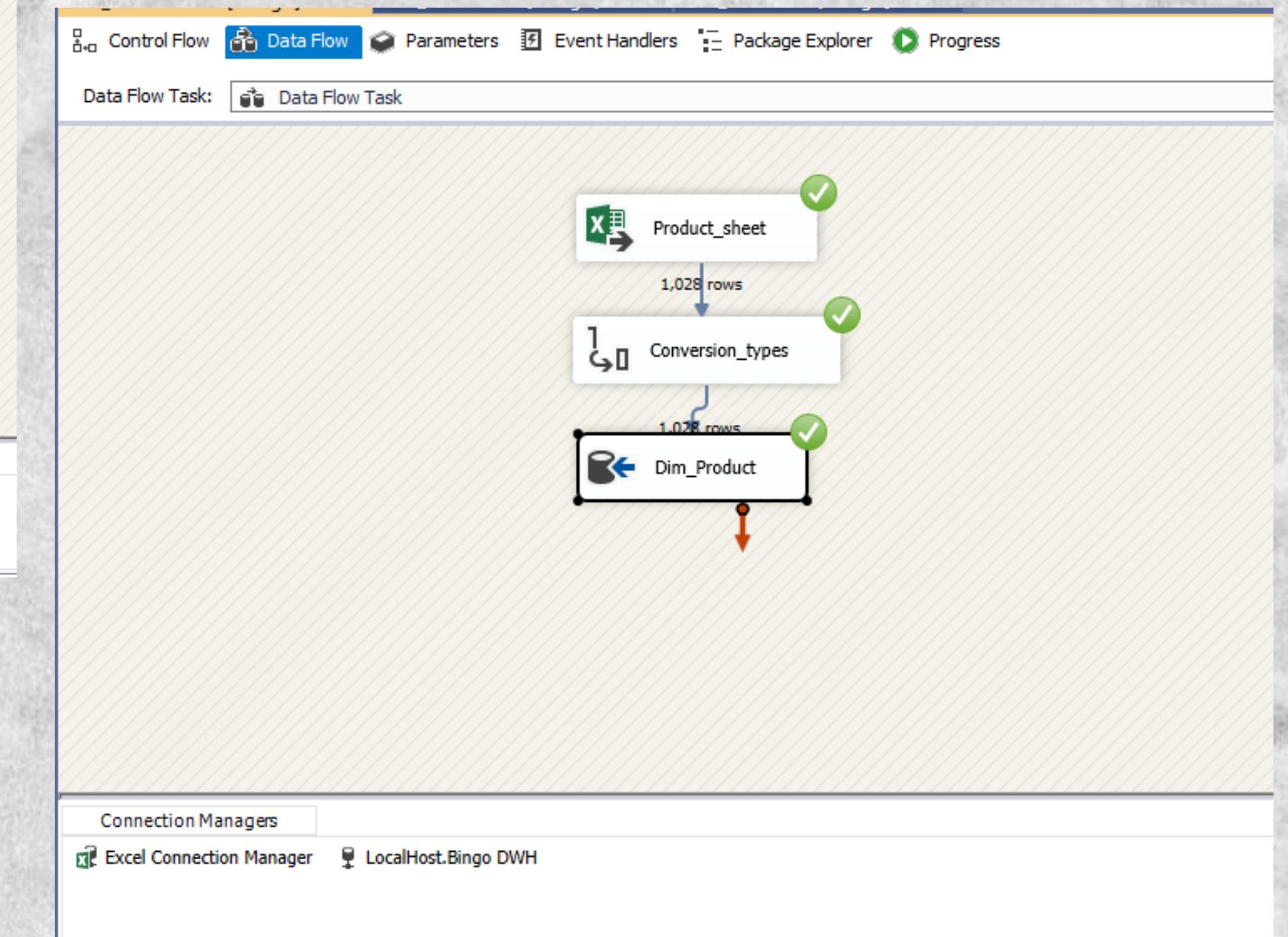
## Fact Sales SSIS Package

## Store Dimension SSIS Package





## Product Dimension SSIS Package



# Power BI

- Explaining our process of thinking and working during the task
- Providing a brief presentation and dashboard



# Power Query Processes

The screenshot shows the Microsoft Power Query Editor interface. The top menu bar includes File, Home, Transform, Add Column, View, Tools, and Help. The ribbon below the menu bar contains various icons for managing queries, such as Close & Apply, New Source, Recent Sources, Enter Data, Data source settings, Manage Parameters, Refresh Preview, Properties Advanced Editor, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Sort, Split Column, Group By, Replace Values, Merge Queries, Append Queries, Combine Files, and Combine. The main workspace displays a preview of a query named "Fact\_Sales" with four columns: TransactionTime, ID, Dim\_Product, and Dim\_Reps. The preview shows 24 rows of data. To the right of the preview is the "Query Settings" pane, which includes sections for PROPERTIES (Name: Fact\_Sales) and APPLIED STEPS. The APPLIED STEPS section lists numerous steps taken during the process, including source, navigation, changed type, added conditional columns, reordered columns, removed columns, inserted week/month/year/month name, and inserted day/month.

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Choose Columns Remove Columns Keep Rows Remove Rows Sort Split Column Group By Replace Values Merge Queries Append Queries Combine Files Combine Text Analytics Vision Combine Files Azure Machine Learning AI Insights

Queries [4]

= Table.AddColumn(#"Inserted Day", "Month", each Date.Month([TransactionTime]), Int64.Type)

	TransactionTime	ID	Dim_Product	Dim_Reps	Dm_Stores
1	2/2/2023 4:40:32 PM	1-79	Value	Value	Value
2	2/2/2023 6:43:17 PM	1-94	Value	Value	Value
3	2/2/2023 8:17:06 PM	3-55	Value	Value	Value
4	2/2/2023 9:30:43 PM	1-105	Value	Value	Value
5	2/2/2023 9:30:43 PM	1-105	Value	Value	Value
6	2/2/2023 9:55:35 PM	3-60	Value	Value	Value
7	2/2/2023 10:03:29 PM	3-61	Value	Value	Value
8	2/2/2023 10:03:29 PM	3-61	Value	Value	Value
9	2/2/2023 10:06:17 PM	3-62	Value	Value	Value
10	2/2/2023 10:40:06 PM	3-69	Value	Value	Value
11	2/3/2023 12:05:53 AM	3-74	Value	Value	Value
12	2/3/2023 12:47:38 PM	1-112	Value	Value	Value
13	2/3/2023 12:49:39 PM	1-113	Value	Value	Value
14	2/3/2023 1:38:18 PM	3-79	Value	Value	Value
15	2/3/2023 1:38:18 PM	3-79	Value	Value	Value
16	2/3/2023 1:38:18 PM	3-79	Value	Value	Value
17	2/3/2023 1:38:18 PM	3-79	Value	Value	Value
18	2/3/2023 2:28:31 PM	3-90	Value	Value	Value
19	2/3/2023 2:28:31 PM	3-90	Value	Value	Value
20	2/3/2023 2:43:16 PM	1-127	Value	Value	Value
21	2/3/2023 4:46:45 PM	1-146	Value	Value	Value
22	2/3/2023 4:51:36 PM	1-147	Value	Value	Value
23	2/3/2023 4:52:22 PM	3-110	Value	Value	Value
24					

17 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 12:06 PM

Query Settings

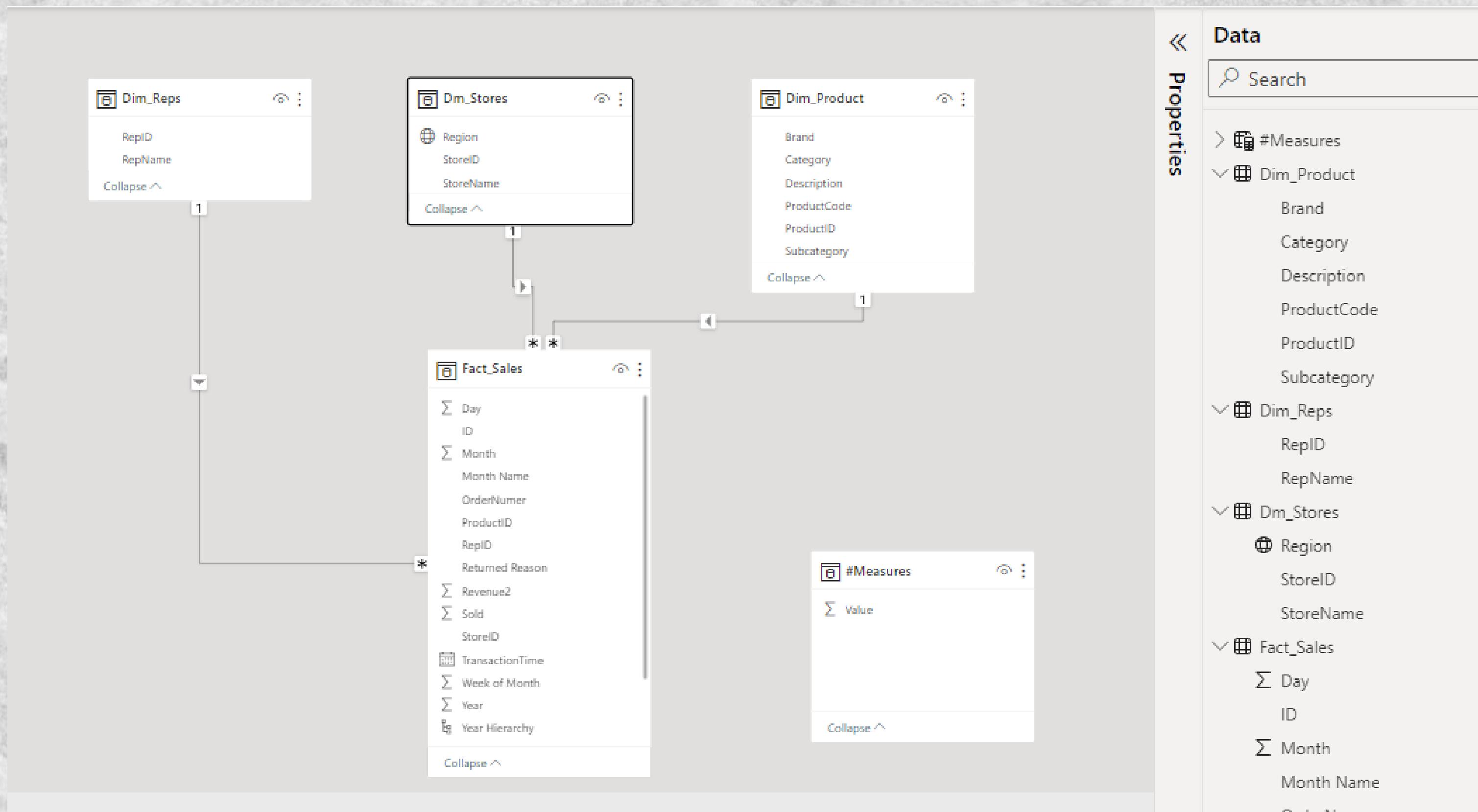
PROPERTIES

Name: Fact\_Sales

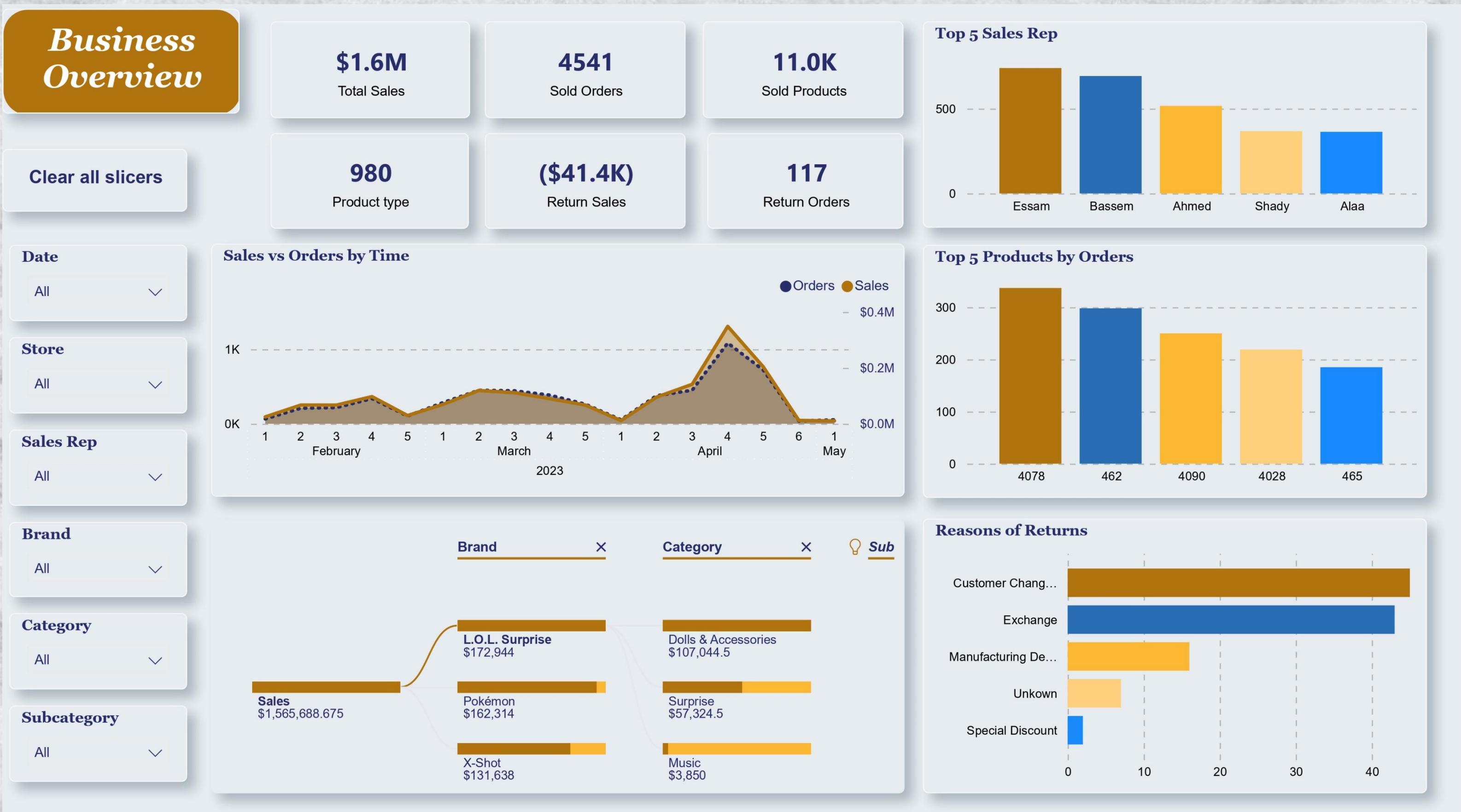
APPLIED STEPS

- source
- Navigation
- Changed Type
- Added Conditional Column
- Added Conditional Column1
- Reordered Columns
- Changed Type1
- Removed Columns
- Added Conditional Column2
- Changed Type2
- Removed Columns1
- Inserted Week of Month
- Reordered Columns1
- Removed Columns2
- Inserted Year
- Inserted Month Name
- Inserted Week of Month1
- Inserted Day
- Inserted Month

# Data Modeling Processes



# Power BI Dashboard



# INSIGHTS

- What is the Total Sales?
- What is the Total Orders?
- How much are the products sold?
- How much are the products returned?





# INSIGHTS

- What are the Top Products sold?
- Who are the top sales representatives?
- How are the sales and orders by time?
- What are the most common reasons for returns?

# THANK YOU

Ammar Allam

