CASE STUDY RETAIL

-Louie Antony

Requirement 1: Data Loading

Requirement 2: Data Transformation

Merge Tables:

Merge

Select a table and matching columns to create a merged table.

Products

ProductID	ProductName	Category	Price
101	Laptop XYZ	Electronics	800
102	T-Shirt Blue	Clothing	15
103	Smartphone ABC	Electronics	400
104	Sofa Set	Furniture	1200
105	Tablet PQR	Electronics	300

SalesTransactions

TransactionID	ProductID	StoreID	TransactionDate	QuantitySold	Revenue
1	101	1	1/5/2023	50	500
2	102	2	1/10/2023	40	600
3	103	1	2/15/2023	30	300
4	104	3	3/20/2023	60	900
5	101	2	4/25/2023	70	700

Join Kind

Left Outer (all from first, matching from second)

☑ Use fuzzy matching to perform the merge

› Fuzzy matching options

⚠ We were unable to determine how many matches the selection will return.

OK   Cancel

Query Settings

PROPERTIES
Name
Products

All Properties

APPLIED STEPS
Source
✕ Navigation

4 COLUMNS, 7 ROWS   Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 9:26 AM

= Table.ExpandTableColumn(#"Merged Queries", "Customers", {"CustomerID", "CustomerName", "Email", "Phone"},

1.2 Revenue	Customers.CustomerID	Customers.CustomerName	Customers.Email	Customers.Phone
50	500	1001	Customer A	customerA@email.com	(123) 456-7890
40	600	1002	Customer B	customerB@email.com	(234) 567-8901
30	300	1003	Customer C	customerC@email.com	(345) 678-9012
60	900	1004	Customer D	customerD@email.com	(456) 789-0123
70	700	1001	Customer A	customerA@email.com	(123) 456-7890
45	675	1002	Customer B	customerB@email.com	(234) 567-8901
55	550	1005	Customer E	customerE@email.com	(567) 890-1234
38	570	1006	Customer F	customerF@email.com	(678) 901-2345
42	630	1007	Customer G	customerG@email.com	(789) 012-3456
68	680	1005	Customer E	customerE@email.com	(567) 890-1234

Query Settings

PROPERTIES
Name
SalesTransactions

All Properties

APPLIED STEPS
Source
Navigation
Merged Queries
✕ Expanded Customers

11 COLUMNS, 10 ROWS   Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 9:58 AM

Clean Data:

Create Calculated Columns:

Name: QuantitySold x Su...   Format   Data category
Home table: SalesTransactions $ ~ % ~ 9 ~ .00   Auto   New measure   Quick measure

```
1 QuantitySold x Sum of Price =
2 SUM('SalesTransactions'[QuantitySold]) * SUM('Products'[Price])
```

⚠ A single value for column 'QuantitySold' in table 'SalesTransactions' cannot be determined. This can happen when a measure formula refers to a column that contains many values without specifying an aggrega

TransactionID	ProductID	StoreID	CustomerID	TransactionDate	QuantitySold	Revenue	Products.ProductName	Products.Category	Products.Price
1	101	1	1001	Thursday, January 5, 2023	50	500	Laptop XYZ	Electronics	800
2	102	2	1002	Tuesday, January 10, 2023	40	600	T-Shirt Blue	Clothing	15
3	103	1	1003	Wednesday, February 15, 2023	30	300	Smartphone ABC	Electronics	400
4	104	3	1004	Monday, March 20, 2023	60	900	Sofa Set	Furniture	1200
5	101	2	1001	Tuesday, April 25, 2023	70	700	Laptop XYZ	Electronics	800
6	102	3	1002	Tuesday, May 30, 2023	45	675	T-Shirt Blue	Clothing	15
7	105	1	1005	Monday, June 5, 2023	55	550	Tablet PQR	Electronics	300
8	106	2	1006	Monday, July 10, 2023	38	570	Jeans Black	Clothing	40
9	107	3	1007	Tuesday, August 15, 2023	42	630	Chair	Furniture	80
10	105	1	1005	Wednesday, September 20, 2023	68	680	Tablet PQR	Electronics	300

Fields

Search

- Customers
- Products
  - Category
  - Price
  - ProductID
  - ProductName
- SalesTransactions
  - CustomerID
  - Measure
  - ProductID
  - Products.Category
  - Products.Price
  - Products.ProductNa...
  - QuantitySold
  - QuantitySol... ⚠
  - Revenue
  - StoreID
  - TransactionDate
  - TransactionID
- Stores

Table: SalesTransactions (10 rows) Column: QuantitySold x Sum of Price (0 distinct values)   Update available (click to download)

Filter Data:

Name: ProductID   Format: Whole number   Summarization: Don't summarize   Sort by column   Data groups   Manage relationships   New column
Data type: Whole number $ ~ % ~ 9 ~ .00   0   Data category: Uncategorized

TransactionID	ProductID	StoreID	CustomerID	TransactionDate	QuantitySold	Revenue	Products.ProductName	Products.Category	Products.Price
1	101	1	1001	Thursday, January 5, 2023	50	500	Laptop XYZ	Electronics	800
2	102	2							15
3	103	1							400
4	104	3							1200
5	101	2							800
6	102	3							15
7	105	1							300
8	106	2							40
9	107	3							80
10	105	1							300

Number filters

Show rows where 'ProductID'...

is greater than   105

● And ○ Or

is less than   107

OK   Cancel

Fields

Search

- Customers
- Products
  - Category
  - Price
  - ProductID
  - ProductName
- SalesTransactions
  - CustomerID
  - Measure
  - ProductID
  - Products.Category
  - Products.Price
  - Products.ProductNa...
  - QuantitySold
  - Revenue
  - StoreID
  - TransactionDate
  - TransactionID
- Stores

Table: SalesTransactions (10 rows) Column: ProductID (7 distinct values)   Update available (click to download)

Requirement 3: Data Modelling

Create Relationships:
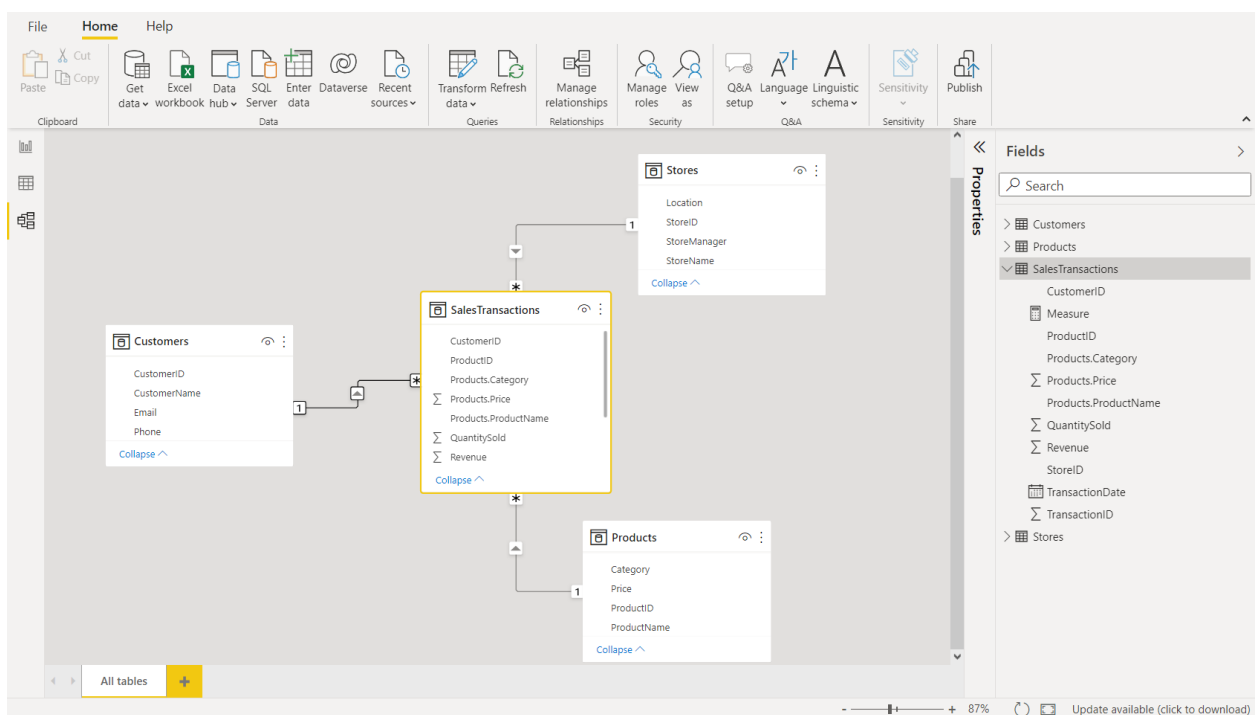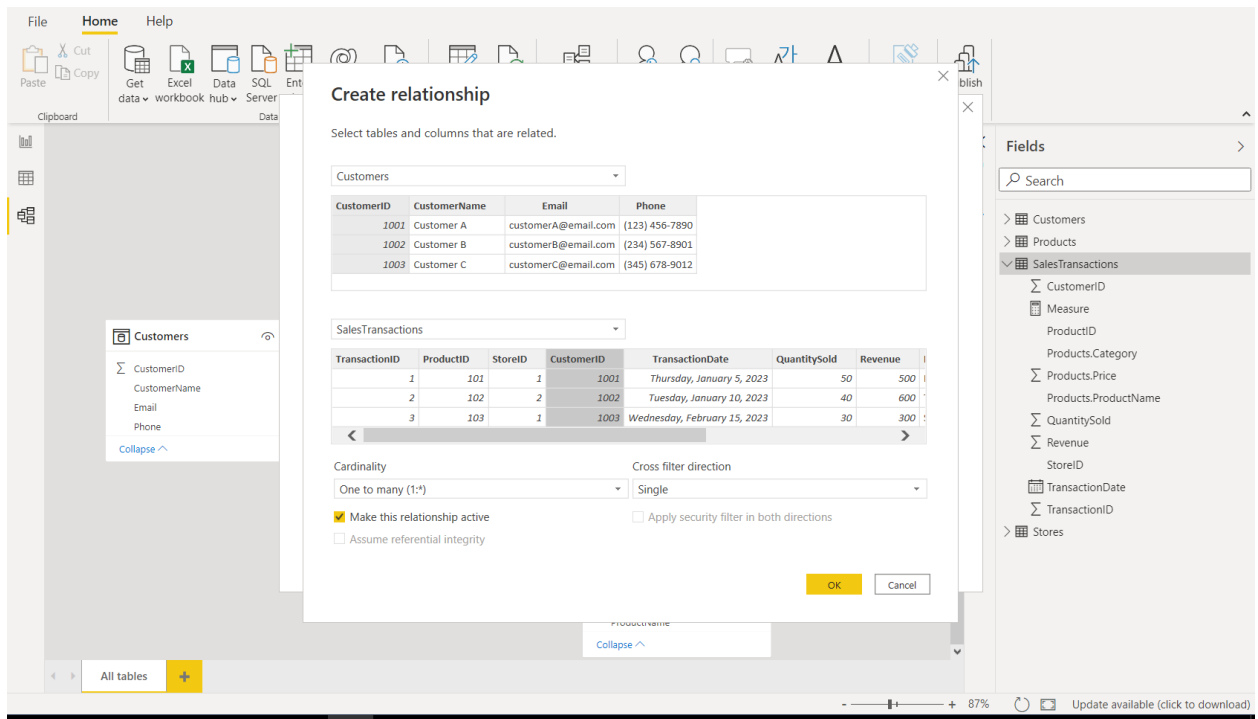
Create Hierarchies:
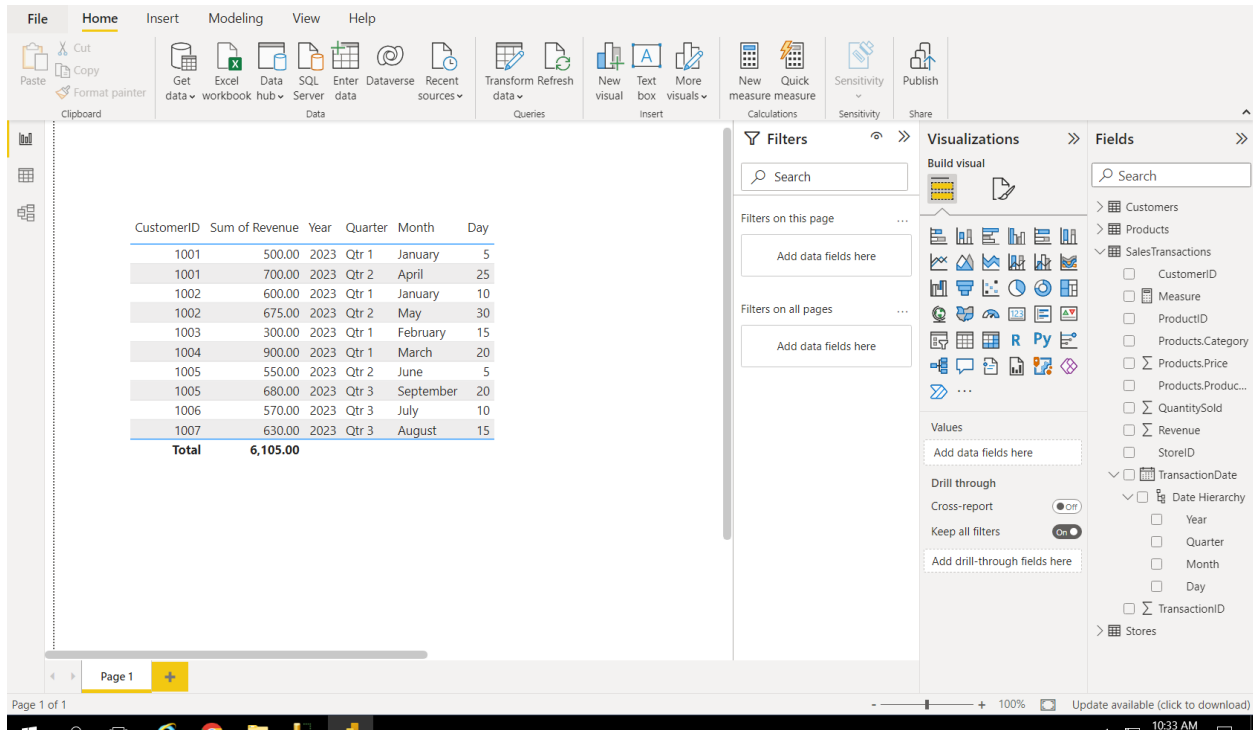
Requirement 4: Business Queries and Analysis

Who are the top-spending customers based on their total purchase amount?
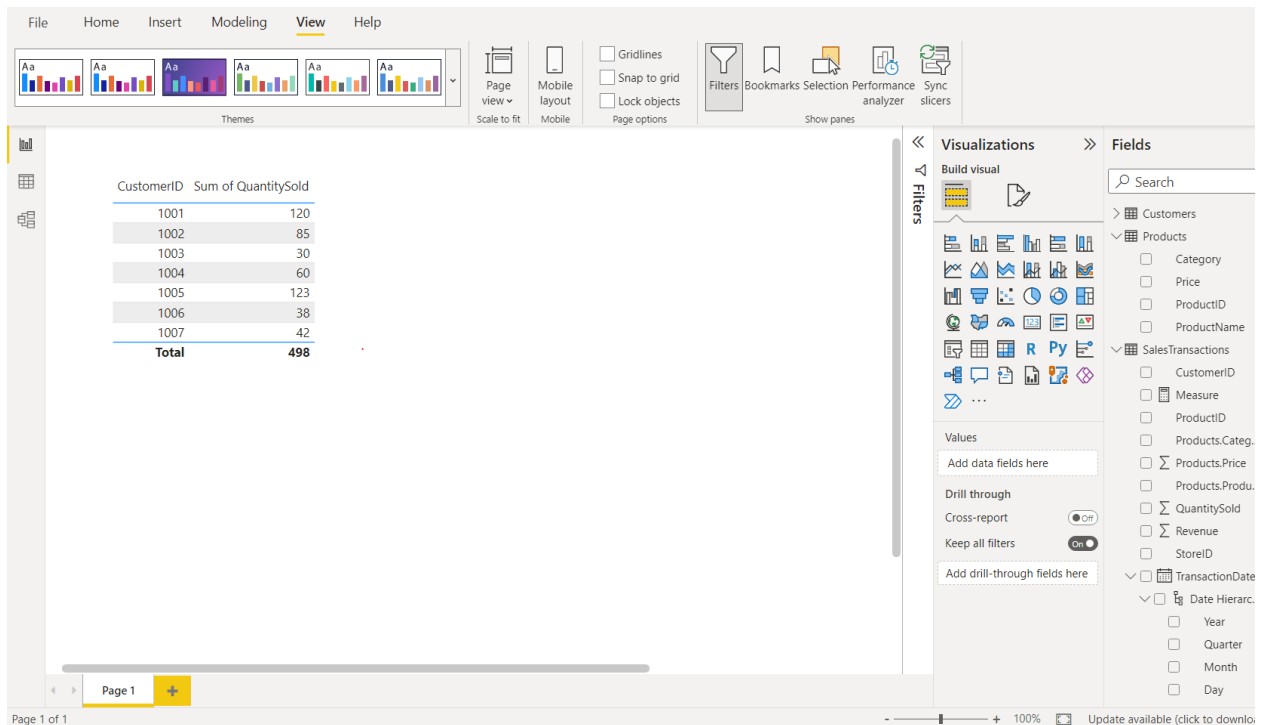
How is sales revenue distributed among different store managers?

StoreID	StoreManager	Location	Sum of Revenue
1	John Smith	New York	2,030.00
2	Jane Doe	Los Angeles	1,870.00
3	Mike Johnson	Chicago	2,205.00
Total			**6,105.00**
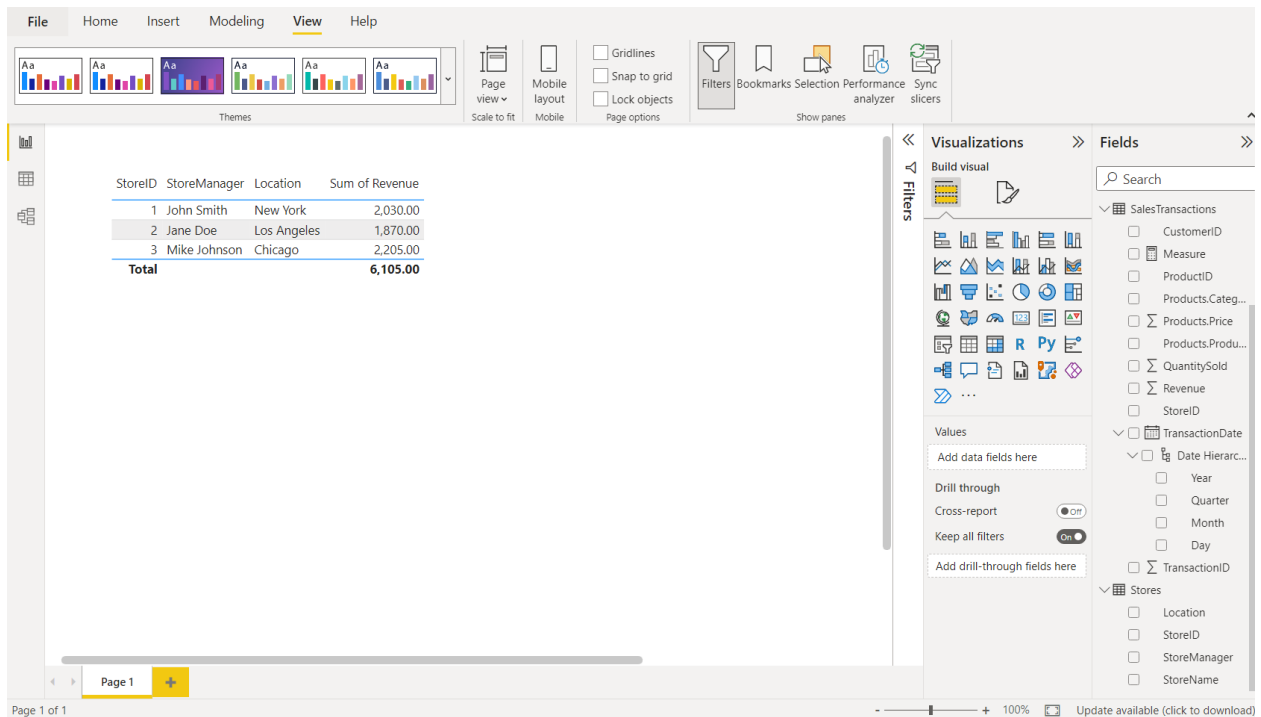
What is the average price of products in each category?

Products.Category	Average of Products.Price
Clothing	23.33
Electronics	520.00
Furniture	640.00
Total	**395.00**
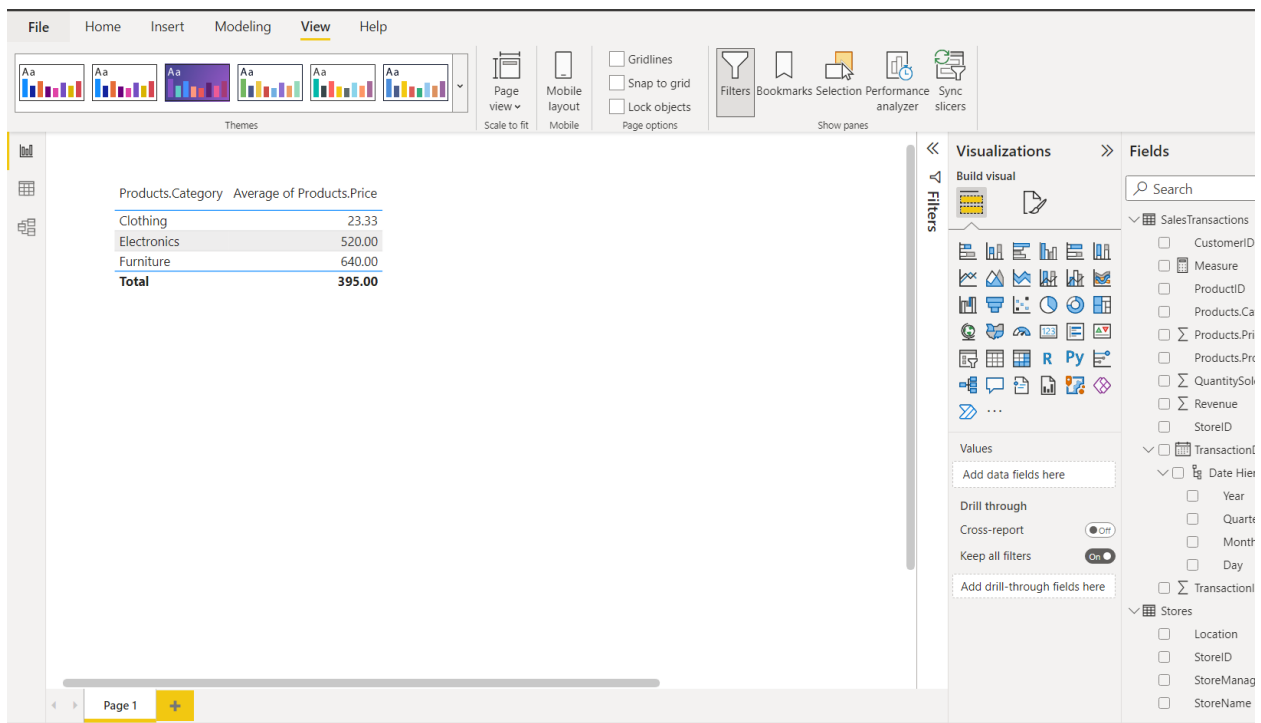
Are there specific days of the week when sales are higher?

Month	Day	Sum of Revenue
January	5	500.00
June	5	550.00
January	10	600.00
July	10	570.00
February	15	300.00
August	15	630.00
March	20	900.00
September	20	680.00
April	25	700.00
May	30	675.00
Total		**6,105.00**
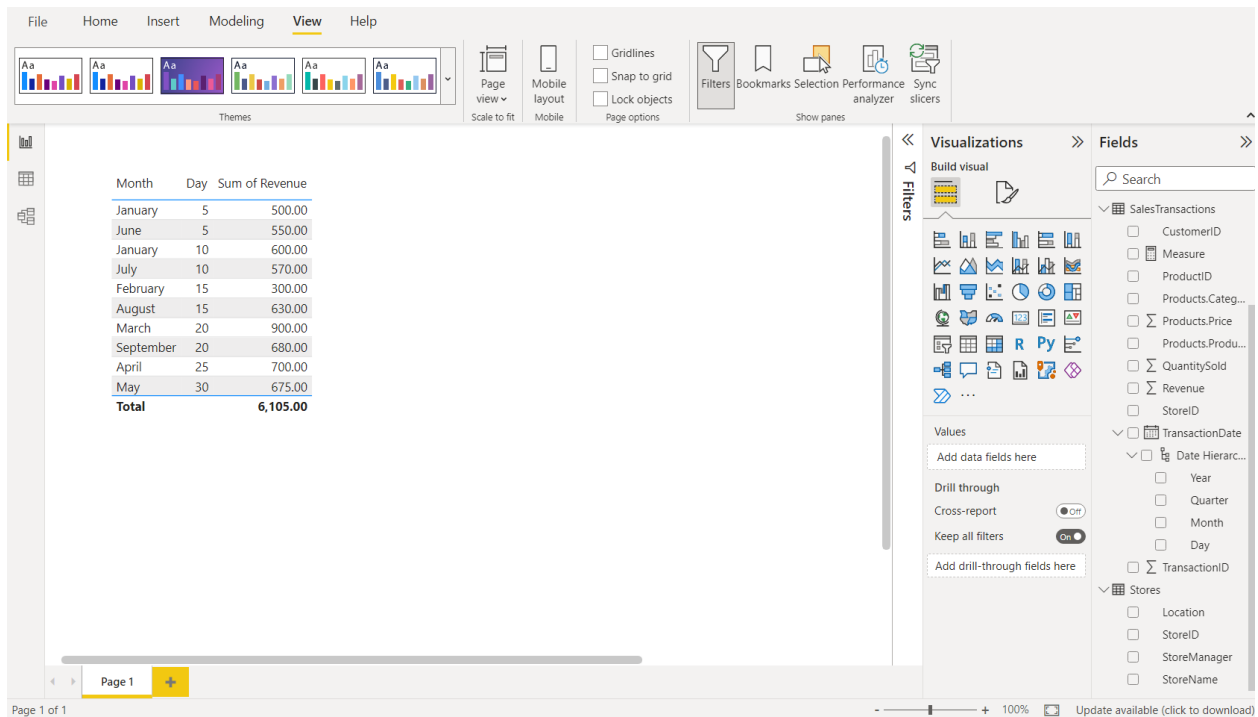
How do sales trends vary by product category on a monthly basis?

Products.Category	Sum of Revenue	Month
Clothing	600.00	January
Clothing	675.00	May
Clothing	570.00	July
Electronics	500.00	January
Electronics	300.00	February
Electronics	700.00	April
Electronics	550.00	June
Electronics	680.00	September
Furniture	900.00	March
Furniture	630.00	August
Total	**6,105.00**	
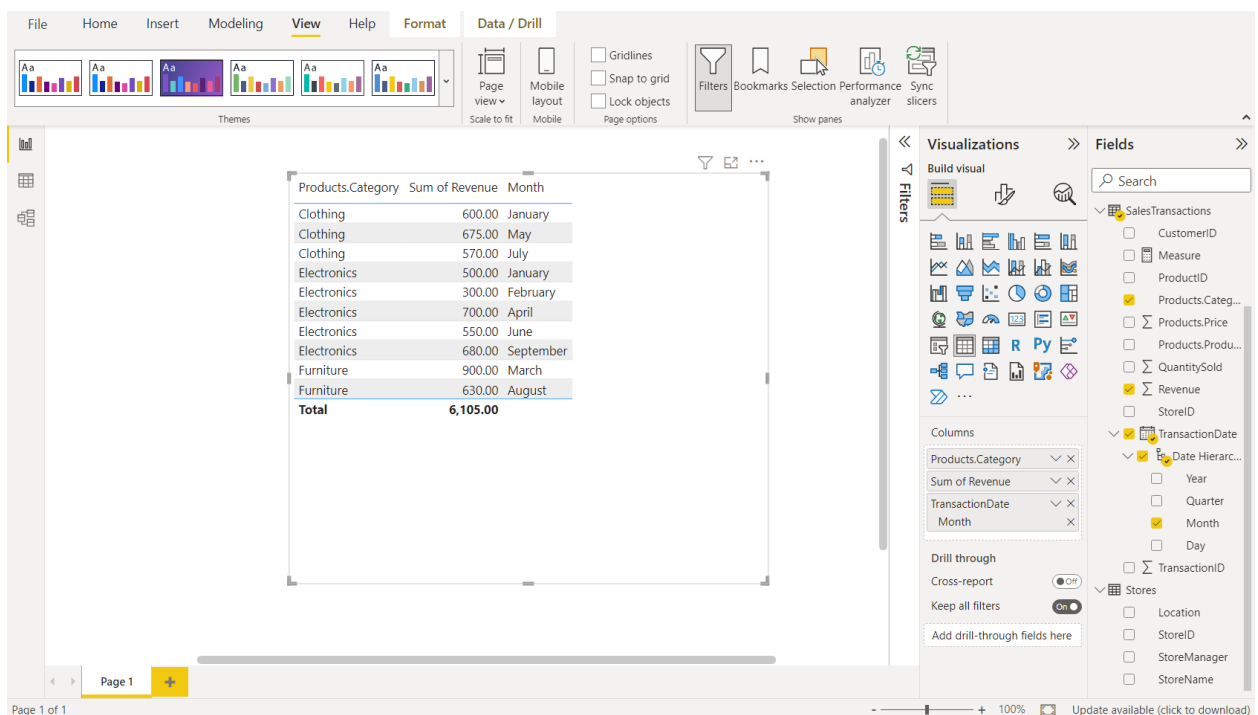
What percentage of products account for 80% of total sales revenue?

Products.Category	%GT Sum of Revenue	ProductID
Clothing	20.88%	102
Clothing	9.34%	106
Electronics	19.66%	101
Electronics	4.91%	103
Electronics	20.15%	105
Furniture	14.74%	104
Furniture	10.32%	107
Total	**100.00%**	
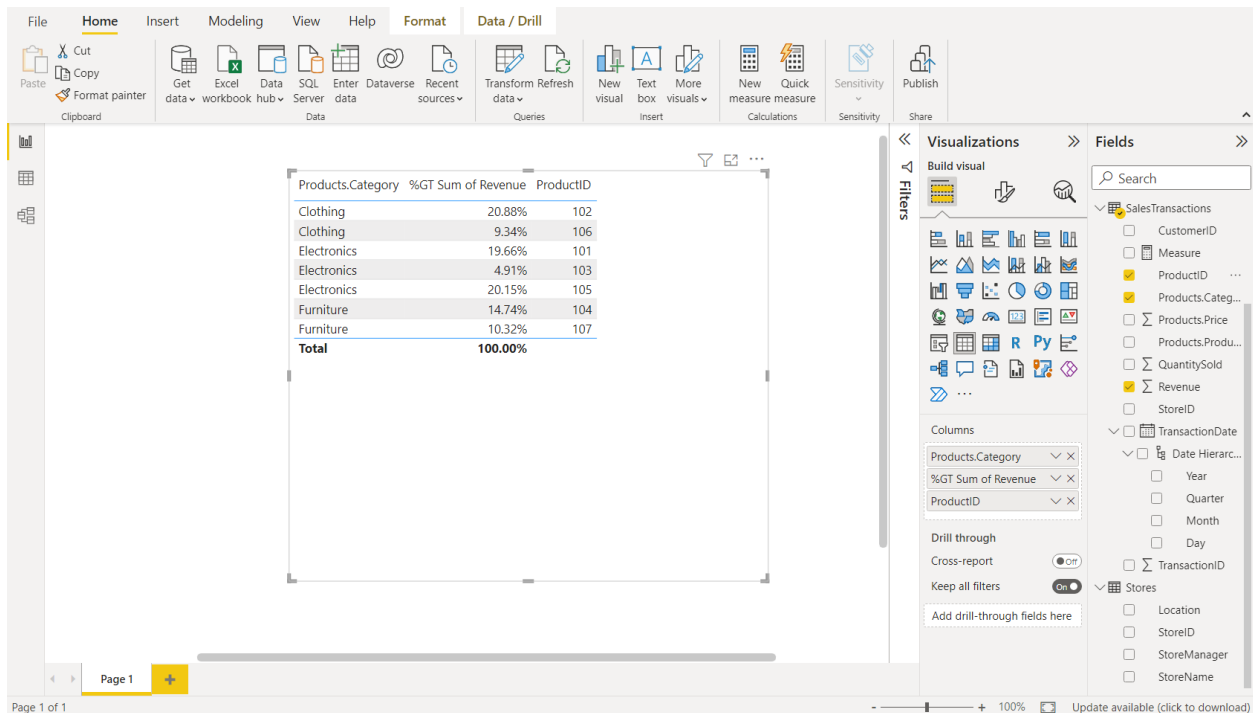
Are there any trends in repeat customer purchases?

Products.Category	ProductID	CustomerID	ProductName
Clothing	102	1002	T-Shirt Blue
Clothing	106	1006	Jeans Black
Electronics	101	1001	Laptop XYZ
Electronics	103	1003	Smartphone ABC
Electronics	105	1005	Tablet PQR
Furniture	104	1004	Sofa Set
Furniture	107	1007	Chair
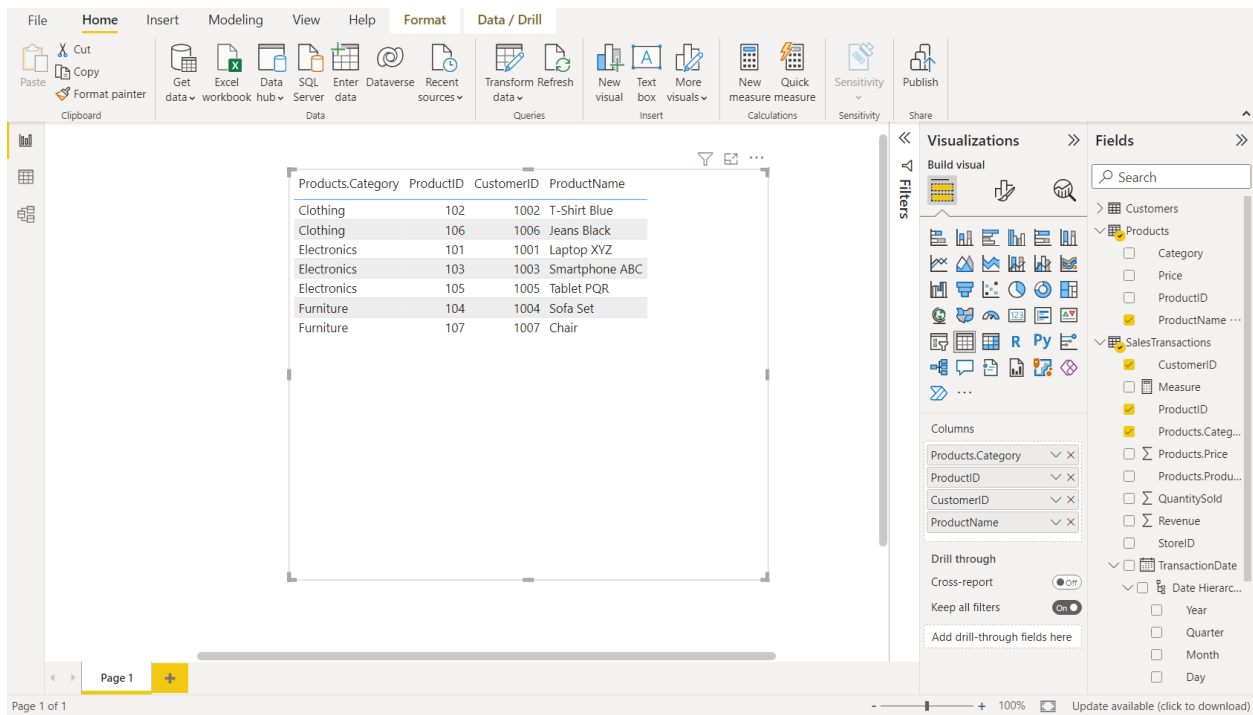
Which product categories perform best at each store location?

Products.Category	Location	Sum of Revenue
Clothing	Chicago	675.00
Clothing	Los Angeles	1,170.00
Electronics	Los Angeles	700.00
Electronics	New York	2,030.00
Furniture	Chicago	1,530.00
Total		**6,105.00**
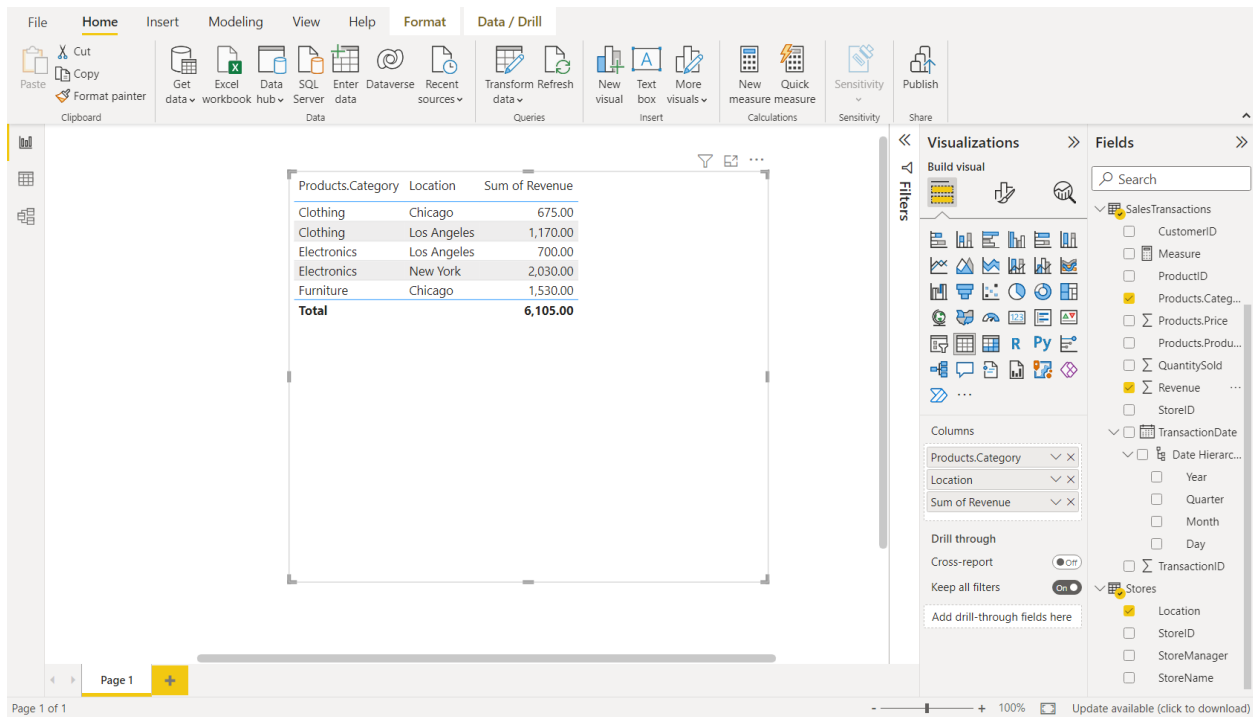
Are there any seasonal patterns or trends in sales for specific products or categories?

| Products.Category	Sum of Revenue	Quarter
Clothing	600.00	Qtr 1
Clothing	675.00	Qtr 2
Clothing	570.00	Qtr 3
Electronics	800.00	Qtr 1
Electronics	1,250.00	Qtr 2
Electronics	680.00	Qtr 3
Furniture	900.00	Qtr 1
Furniture	630.00	Qtr 3
Total	**6,105.00**	
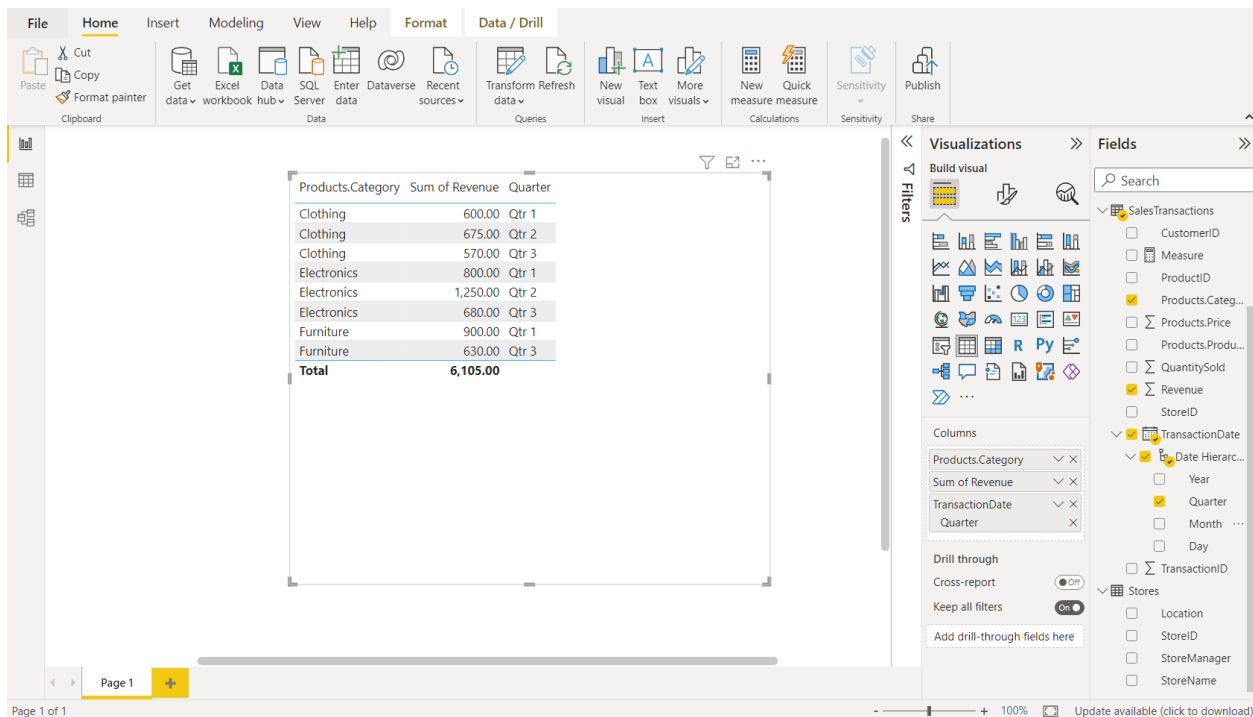
Can customers be segmented into high, medium, and low-value segments based on their purchase history
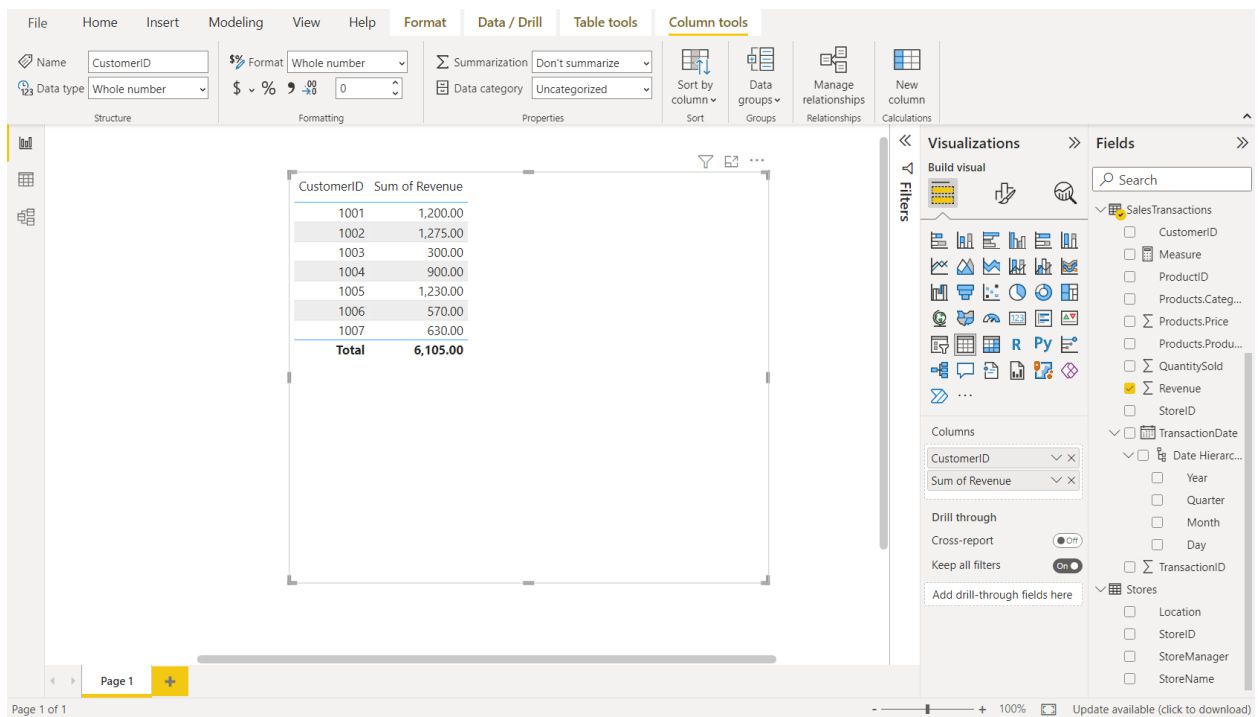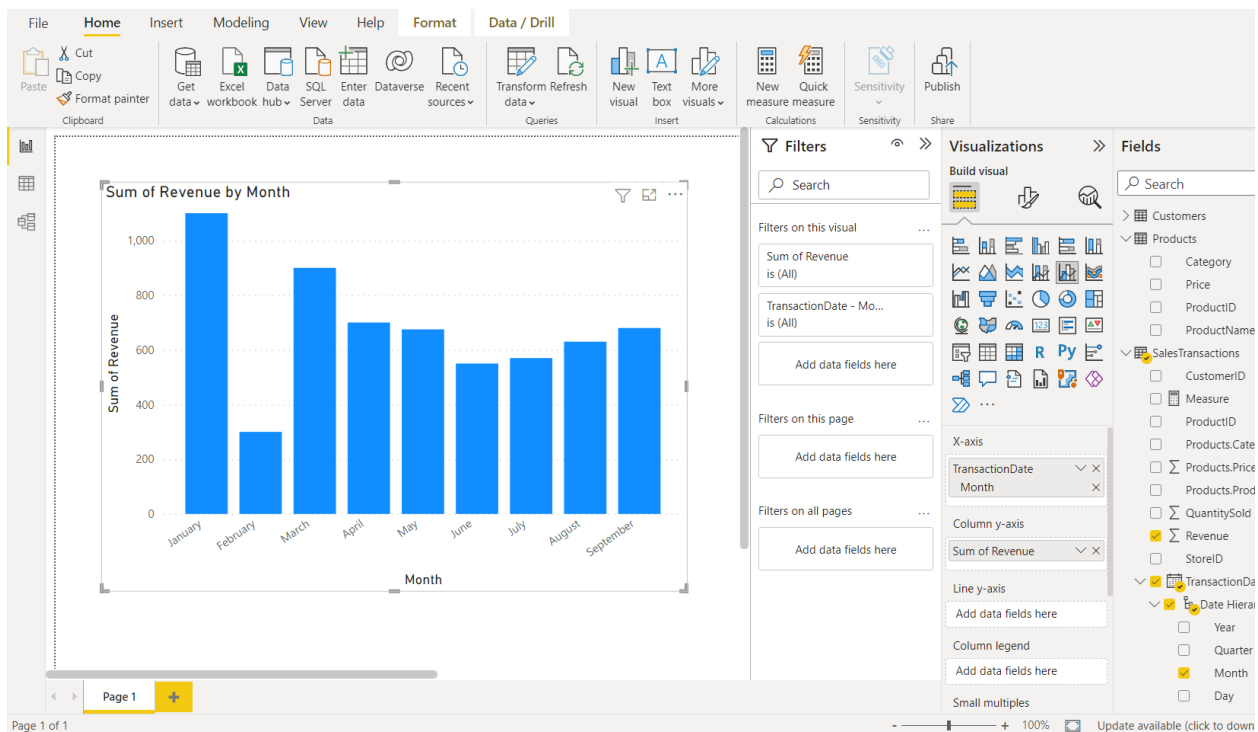
Requirement 5: Data Insights and Recommendations

Analyze Patterns: Identify patterns and trends in the data, such as seasonality or regional variations and show it or mark it.
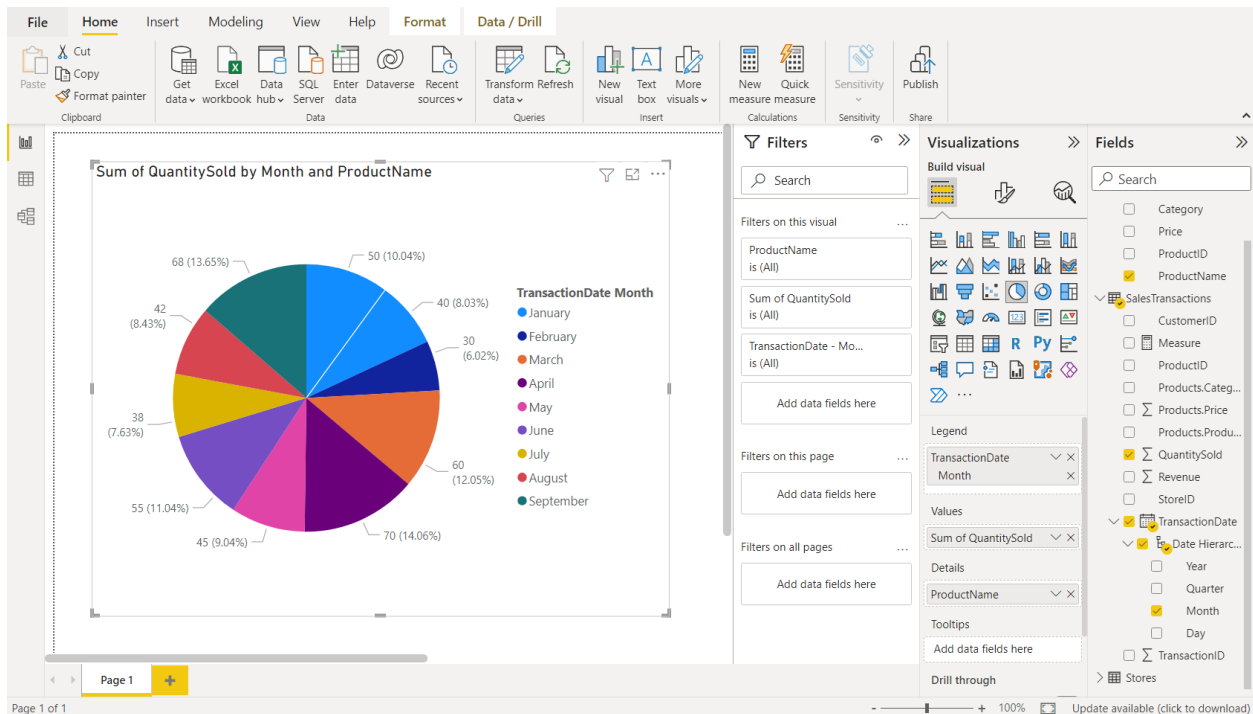
Generate Insights: Provide actionable insights based on your analysis. For example, suggest increasing marketing efforts for the most profitable product category

Create Visual Stories: Use storytelling techniques to communicate your findings effectively in the reports and dashboards.