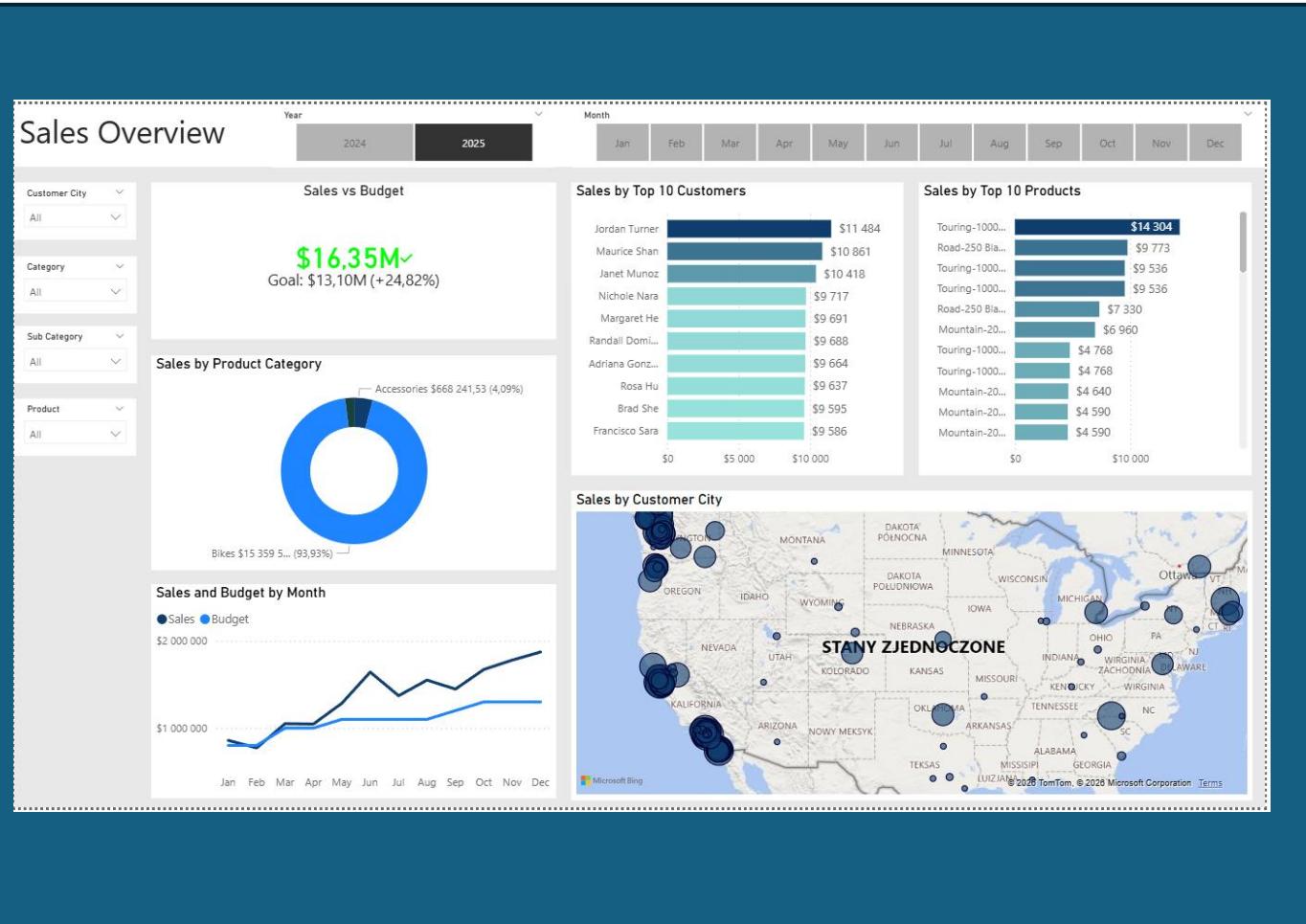


Data Analytics Portfolio

Power BI & SQL

- Business Requirements & User Stories
 - Data Cleansing & Transformation (SQL)
 - Data Model & Relationships
 - DAX Measures
 - Final Dashboard & Key Insights



Business Requirements & User Stories

The business requirement was to create an executive-level sales report tailored to sales managers and sales representatives. Based on this requirement, a set of user stories was defined to guide the development process and ensure that all acceptance criteria were consistently met throughout the project.

	As a	I want	so that	Acceptance criteria
1	Sales Representative	A detailed overview of Internet Sales per Customers	I can follow up my customers that buys the most	A Power BI dashboard which allows me to filter data for each customer
2	Sales Representative	A detailed overview of Internet Sales per Products	I can follow up my Products that sells the best	A Power BI dashboard which allows me to filter data for each product
3	Sales Manager	A dashboard overview of internet sales	I can follow sales over time against budget	A Power BI dashboard with graphs and KPIs comparing against budget

Data Cleansing & Transformation (SQL)

To create the necessary data model for analysis and to fulfill the business requirements, relevant tables were extracted and prepared using SQL.

All SQL scripts were executed in Microsoft SQL Server Express using Microsoft SQL Server Management Studio (SSMS).

```
1  -- Cleansed Dim_DateTable --
2  SELECT
3  [DateKey],
4  [FullDateAlternateKey] AS Date,
5  --,[DayNumberOfWeek]
6  [EnglishDayNameOfWeek] AS Day,
7  --,[SpanishDayNameOfWeek]
8  --,[FrenchDayNameOfWeek]
9  --,[DayNumberOfMonth]
10 --,[DayNumberOfYear]
11 --,[WeekNumberOfYear]
12 [EnglishMonthName] AS Month,
13 LEFT ([EnglishMonthName], 3) AS MonthShort,
14 --,[SpanishMonthName]
15 --,[FrenchMonthName]
16 [MonthNumberOfYear] AS MonthNo,
17 [CalendarQuarter] AS Quarter,
18 [CalendarYear] AS Year
19 --,[CalendarSemester]
20 --,[FiscalQuarter]
21 --,[FiscalYear]
22 --,[FiscalSemester]
23 FROM [AdventureWorksDW2025].[dbo].[DimDate]
24 WHERE CalendarYear >= 2024
25
```

```
1  -- Cleansed Dim_Product Table --
2  SELECT
3  p.[ProductKey],
4  p.[ProductAlternateKey] AS ProductItemCode,
5  --,[ProductSubcategoryKey]
6  --,[WeightUnitMeasureCode]
7  --,[SizeUnitMeasureCode]
8  p.[EnglishProductName] AS [Product Name],
9  ps.EnglishProductsSubcategoryName AS [Sub Category], -- Joined from Subcategory Table
10 pc.EnglishProductCategoryName AS [Product Category], -- Joined from Category Table
11 --,[SpanishProductName]
12 --,[FrenchProductName]
13 --,[StandardCost]
14 --,[FinishedGoodsFlag]
15 p.[Color] AS [Product Color],
16 --,[SafetyStockLevel]
17 --,[ReorderPoint]
18 --,[ListPrice]
19 p.[Size] AS [Product Size],
20 --,[SizeRange]
21 --,[Weight]
22 --,[DaysToManufacture]
23 p.[ProductLine] AS [Product Line],
24 --,[DealerPrice]
25 --,[Class]
26 --,[Style]
27 p.[ModelName] AS [Product Model Name],
28 --,[LargePhoto]
29 p.[EnglishDescription] AS [Product Description],
30 --,[FrenchDescription]
31 --,[ChineseDescription]
32 --,[ArabicDescription]
33 --,[HebrewDescription]
34 --,[ThaiDescription]
35 --,[GermanDescription]
36 --,[JapaneseDescription]
37 --,[TurkishDescription]
38 --,[StartDate]
39 --,[EndDate]
40 ISNULL(p.Status, 'Outdated') AS [Product Status] -- Status Outdated for blank positions
41 FROM
42 [AdventureWorksDW2025].[dbo].[DimProduct] AS p
43 LEFT JOIN [AdventureWorksDW2025].[dbo].[DimProductSubcategory] AS ps ON ps.ProductSubcategoryKey = p.ProductSubcategoryKey
44 LEFT JOIN [AdventureWorksDW2025].[dbo].[DimProductCategory] AS pc ON ps.ProductCategoryKey = pc.ProductCategoryKey
45 ORDER BY
p.[ProductKey] ASC
```

Data Cleansing & Transformation (SQL)

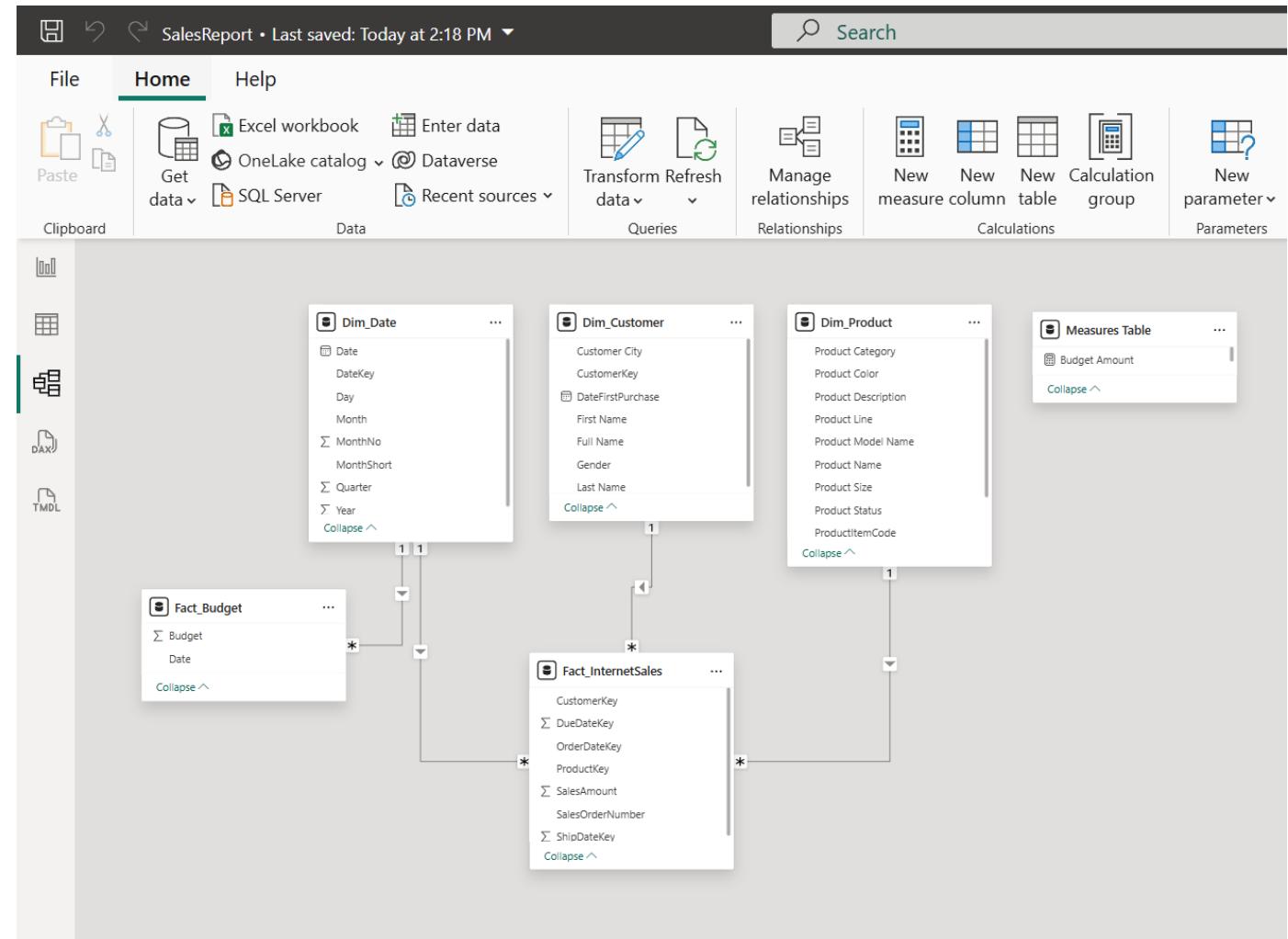
```
1  -- Cleansed Dim_CustomerTable --
2  SELECT
3    c.[CustomerKey],
4    --,[GeographyKey]
5    --,[CustomerAlternateKey]
6    --,[Title]
7    c.[FirstName] AS [First Name],
8    --,[MiddleName]
9    c.[LastName] AS [Last Name],
10   c.FirstName + ' ' + c.LastName AS [Full Name], -- Combined First and Last Name
11   --,[NameStyle]
12   --,[BirthDate]
13   --,[MaritalStatus]
14   --,[Suffix]
15   CASE c.[Gender] WHEN 'M' Then 'Male' WHEN 'F' THEN 'Female' END AS Gender,
16   --,[EmailAddress]
17   --,[YearlyIncome]
18   --,[TotalChildren]
19   --,[NumberChildrenAtHome]
20   --,[EnglishEducation]
21   --,[SpanishEducation]
22   --,[FrenchEducation]
23   --,[EnglishOccupation]
24   --,[SpanishOccupation]
25   --,[FrenchOccupation]
26   --,[HouseOwnerFlag]
27   --,[NumberCarsOwned]
28   --,[AddressLine1]
29   --,[AddressLine2]
30   --,[Phone]
31   [DateFirstPurchase],
32   --,[CommuteDistance]
33   g.city AS [Customer City] -- Joined in Customer City from Geography Table
34   FROM
35   [AdventureWorksDW2025].[dbo].[DimCustomer] AS c
36   LEFT JOIN [AdventureWorksDW2025].[dbo].[DimGeography] AS g ON g.GeographyKey = c.GeographyKey
37   ORDER BY CustomerKey ASC -- Ordered by Customer Key
38
```

```
1  -- Cleansed FACT_InternetSales Table --
2  SELECT
3    [ProductKey],
4    [OrderDateKey],
5    [DueDateKey],
6    [ShipDateKey],
7    [CustomerKey],
8    --,[PromotionKey]
9    --,[CurrencyKey]
10   --,[SalesTerritoryKey]
11   [SalesOrderNumber],
12   --,[SalesOrderLineNumber]
13   --,[RevisionNumber]
14   --,[OrderQuantity]
15   --,[UnitPrice]
16   --,[ExtendedAmount]
17   --,[UnitPriceDiscountPct]
18   --,[DiscountAmount]
19   --,[ProductStandardCost]
20   --,[TotalProductCost]
21   [SalesAmount]
22   --,[TaxAmt]
23   --,[Freight]
24   --,[CarrierTrackingNumber]
25   --,[CustomerPONumber]
26   --,[OrderDate]
27   --,[DueDate]
28   --,[ShipDate]
29   FROM [AdventureWorksDW2025].[dbo].[FactInternetSales]
30   WHERE OrderDateKey >= 20240101
31   ORDER BY
32   OrderDateKey ASC
```

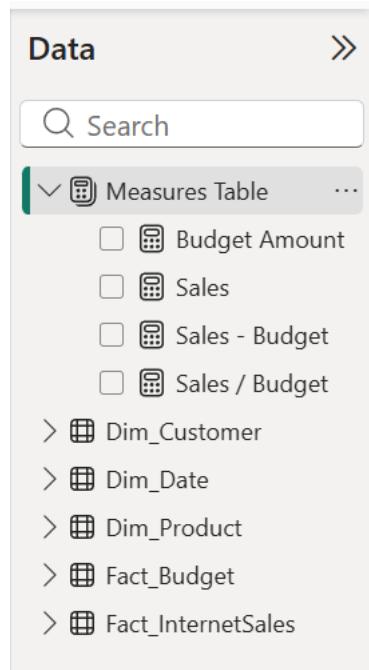
Data Model & Relationships

The Power BI model was built after cleansing and transforming the source data. Fact_Budget table was provided as an Excel file and connected directly to the model.

It separates Internet Sales and Budget data into dedicated fact tables and aligns them through conformed Date, Customer, and Product dimensions.



DAX Measures



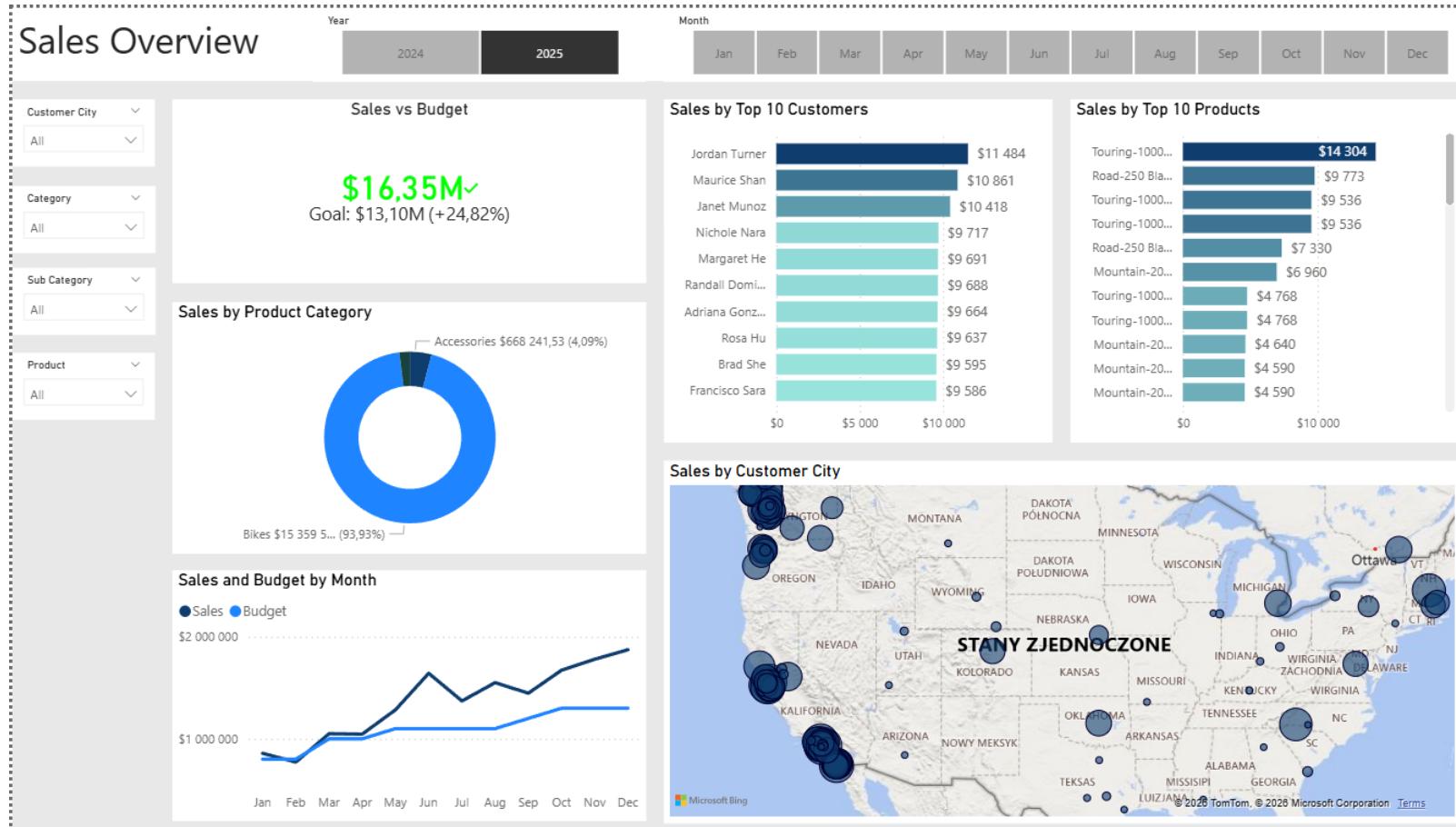
All DAX measures were organized within a dedicated table to separate calculation logic from data storage.

Key measures include Budget Amount and Sales (SUM aggregations), Sales - Budget (variance calculation), and Sales / Budget (performance ratio using DIVIDE).

These measures serve as the core metrics for comprehensive sales vs. budget analysis across multiple dimensions.

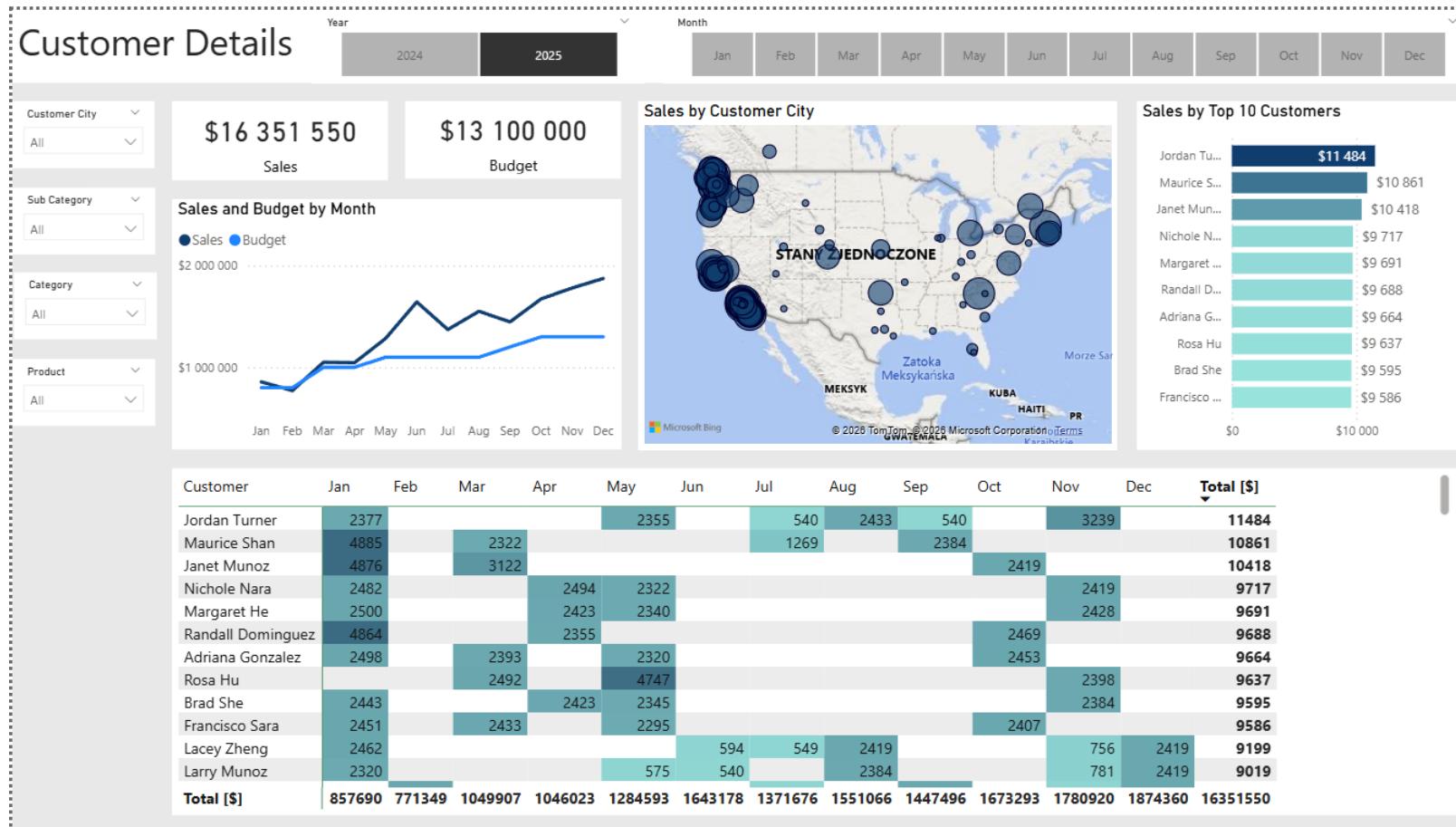
```
Budget Amount = SUM(Fact_Budget[Budget])
Sales = SUM(Fact_InternetSales[SalesAmount])
Sales - Budget = [Sales] - [Budget Amount]
Sales / Budget = DIVIDE([Sales], [Budget Amount])
```

Final Dashboard & Key Insights – Sales Overview



- Sales were 9% below budget in 2024 but nearly 25% above budget in 2025.
- Bikes generate over 94% of total revenue.
- Sales increase noticeably in the second half of the year.
- The dashboard supports filtering across years and individual months.

Final Dashboard & Key Insights – Customer Details



- Year-end months deliver the highest sales.
- Geographic sales patterns highlight a few dominant cities.
- The customer base shows strong repeat-purchase behavior.
- Sales representatives can easily filter results by individual customers.

Final Dashboard & Key Insights – Product Details

Product Details

Year: 2024 | 2025

Month: Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec

Sales and Budget by Month

Sales by Customer City

Sales by Top 10 Products

Product Category	Sales (\$)
Touring-1...	\$14 304
Road-250 ...	\$9 773
Touring-1...	\$9 536
Touring-1...	\$9 536
Road-250 ...	\$7 330
Mountain... Touring-1...	\$6 960
Touring-1...	\$4 768
Touring-1...	\$4 768
Mountain... Touring-1...	\$4 640
Mountain... Touring-1...	\$4 590
Mountain... Touring-1...	\$4 590

Category Sales

Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total [\$]
Bikes	829911	703797	967773	968904	1200153	1551225	1284187	1461493	1361345	1573443	1683498	1773772	15359502
Mountain Bikes	359162	278042	414898	385262	480258	615161	534650	596139	551160	619851	740224	765192	6339999
Road Bikes	342494	288594	369267	342659	419690	525892	403180	474284	434069	520211	529662	546091	5196093
Touring Bikes	128255	137161	183609	240983	300205	410172	346358	391070	376116	433380	413613	462489	3823410
Accessories	19050	46246	55339	51722	57877	62527	58002	59737	58523	66168	67268	65783	668242
Tires and Tubes	5375	17346	19857	18476	21072	20949	21431	21098	19975	22793	21917	21988	232276
Helmets	5773	14591	16725	15641	18300	21064	17985	19210	19559	21729	22778	22674	216028
Bottles and Cages	1972	3436	3958	3976	4325	5500	4798	5403	5069	5534	5191	5845	55009
Fenders	1429	2967	3319	3715	3737	4220	4418	3583	3649	4242	4616	4550	44444
Hydration Packs	1430	2365	3519	3079	3079	3189	3519	3849	3684	3024	3849	4344	38933
Bike Stands	1272	2544	3180	4134	3816	3816	2703	2862	2862	4929	3657	1908	37683
Bike Racks	1560	2520	4200	2160	3000	3120	2400	3120	3240	3360	4560	3720	36960
Total [\$]	857690	771349	1049907	1046023	1284593	1643178	1371676	1551066	1447496	1673293	1780920	1874360	16351550

- Mountain Bikes are the strongest performing subcategory.
- Introducing Touring Bikes was a strong decision, as they generated nearly 25% of revenue in 2025.
- Product-level filtering enables detailed analysis.