

# Workshop

- Microsoft Azure
- Azure SQL
- AdventureWorksLT DB
- Microsoft Power BI



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# Workshop: Tools Used

- Microsoft Azure
- Azure Data Studio
- DBeaver
- Microsoft Power BI



# Workshop: Create Database

- Azure
  - Create research group
  - Create SQL server
  - Configure to reduce cost
  - Create database
  - Create with sample database



# Workshop: Query Database

- Azure Data Studio
  - Azure Data Studio
  - Setup Data Connection
  - Query database
  - Fyi: add-ins
- DBeaver
  - Setup Data Connection
  - Query database
- Microsoft Power BI

# Sample Databases

- AdventureWorksLT is a sample database created by Microsoft and available for SQL Server and Azure SQL
- AdventureWorksLT is a subset of the AdventureWorks database sample with is an OLTP (on-line transaction processing) database in 3NF.
- Microsoft also provides the AdventureWorksDW which is a DW in a dimensional (sort of) model.

## AdventureWorks201x & AdventureWorksDW201x

- AdventureWorks sells bikes & related products (parts & accessories) through two sales channels:
  - direct to customers via internet
  - indirectly through resellers (or stores)
- Business transactions tracked are: sales, purchases & inventory.
- These transactions may have some of the following dimensions:
  - Products sold or purchased - Product Hierarchy – Products, Product Subcategories & Product Categories
  - Address for customer, employees, stores & others - Geography Hierarchy – City, State, Country
  - Resellers (or Store)
  - Customers (Individuals buying over the internet)
  - Ship, Order, Due, Purchase & other Dates - Date Hierarchy - Year, Quarter, Month, Day
  - Employees – including sales people
  - Vendors – product and part suppliers
  - Sales promotions

# Sample Databases

## AdventureWorks201x & AdventureWorksDW201x

- AdventureWorks201x
  - OLTP (on-line transactional processing) database
  - **System of record (SOR)** for AdventureWorks company
  - Normalized ER Model
- AdventureWorksDW201x
  - **Data Warehouse (DW)**
  - Data source is AdventureWorks201x (sort of...)
  - Dimensional data model



# Sample Databases

## AdventureWorks201x & AdventureWorksDW201x

- Microsoft's documentation has not been kept up-to-date (similar to most IT's BI & DW documentation BTW) but is useful when understanding the overall model and business rules:
  - [Schemas in AdventureWorks](#)
  - [AdventureWorks Data Dictionary](#)
  - [Adventure Works Cycles Business Scenarios](#)
- Additional documentation
  - [AdventureWorks – Data Dictionary](#) – by Datedo (sells data dictionary software & ERD)
  - [AdventureWorks \(printer friendly\).pdf](#) - pdf of above
- AdventureWorks Data Model (both old)
  - [AdventureWorks OLTP Database Diagram](#)
  - [AdventureWorks DW Schema](#)

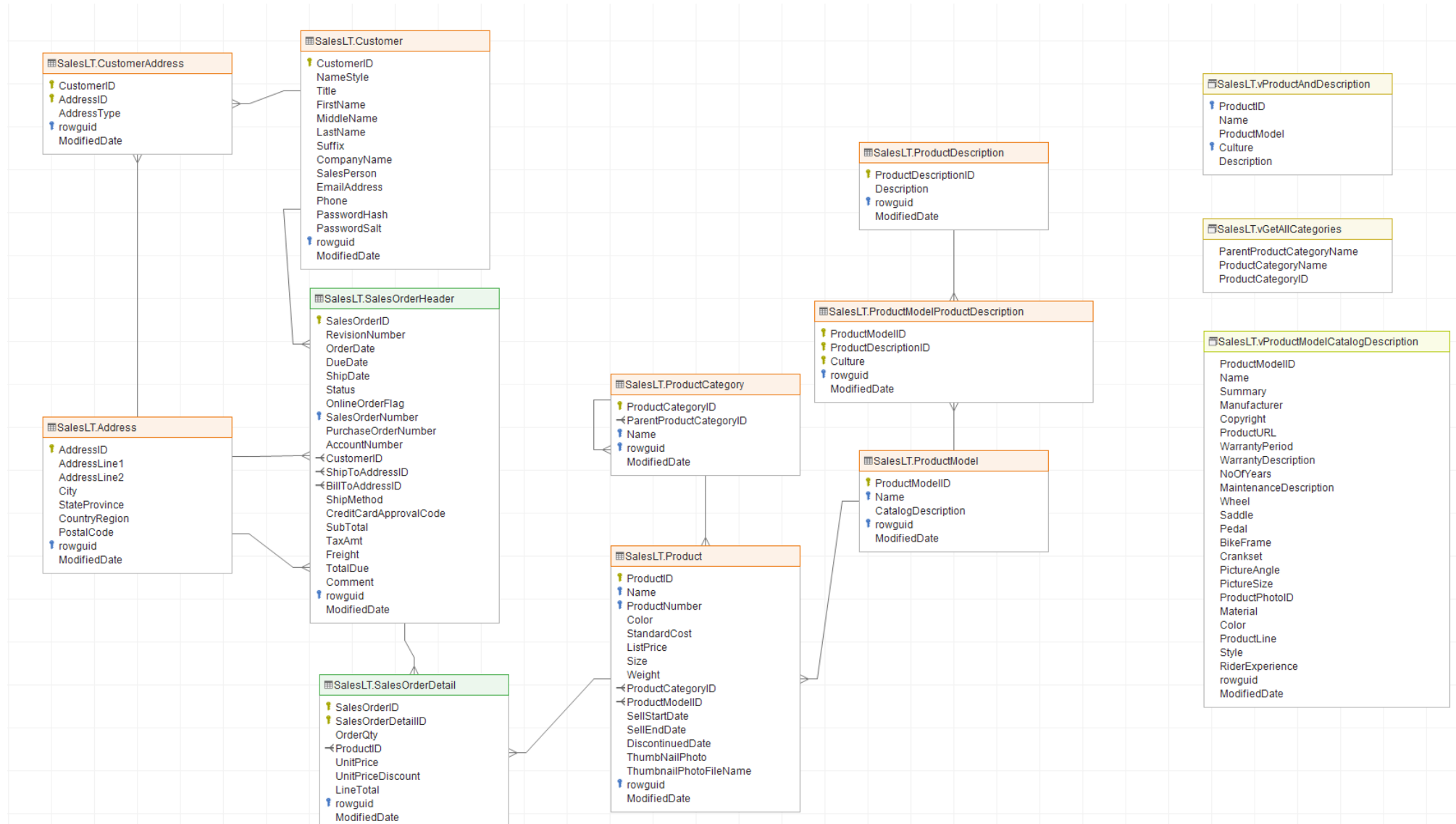


# Sample Databases

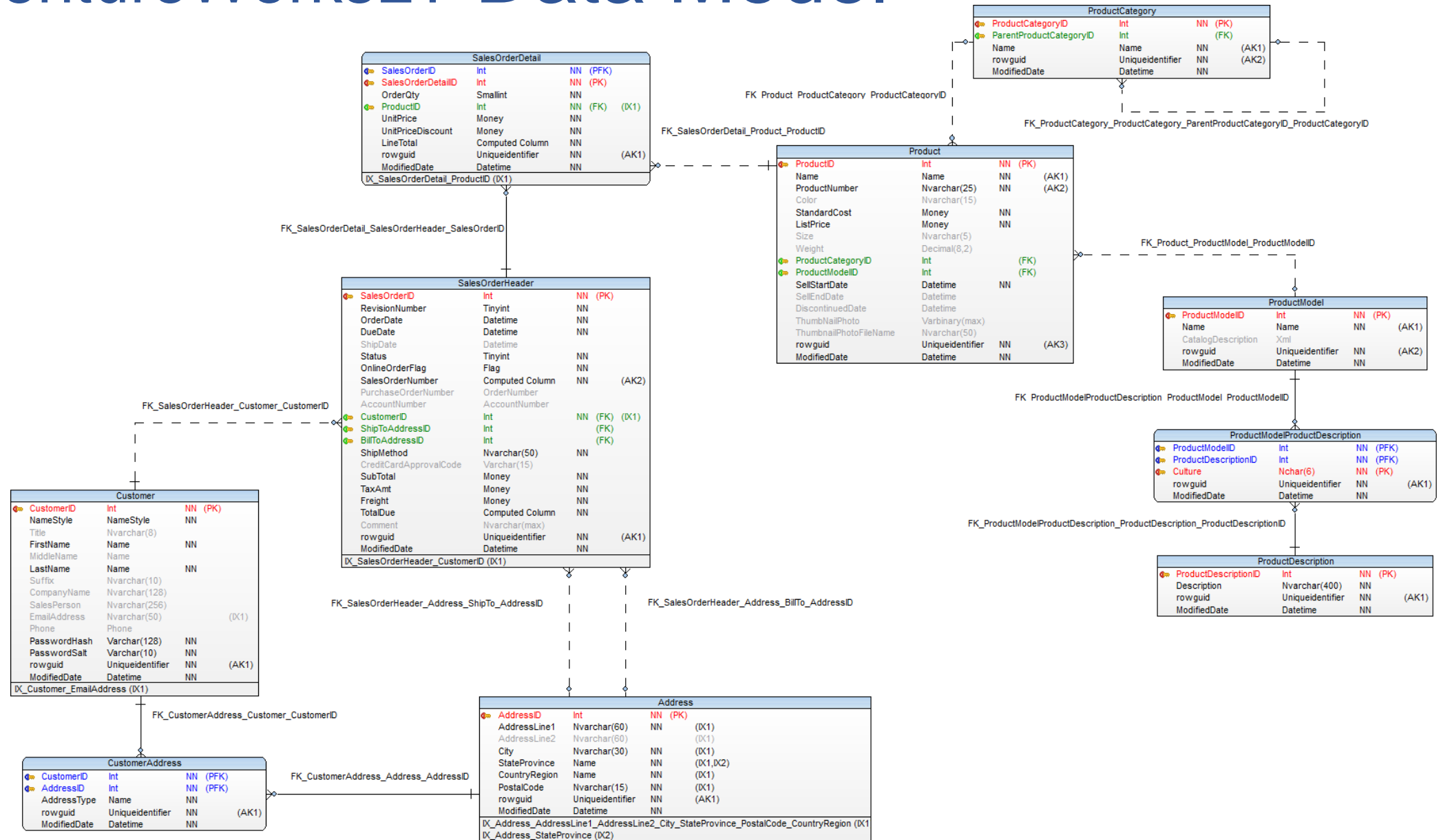
## AdventureWorks201x & AdventureWorksDW201x

- AdventureWorks201x
  - Sales
  - Inventory
  - Purchasing Sales
- AdventureWorksDW201x
  - Internet Sales
  - Reseller Sales
  - Inventory

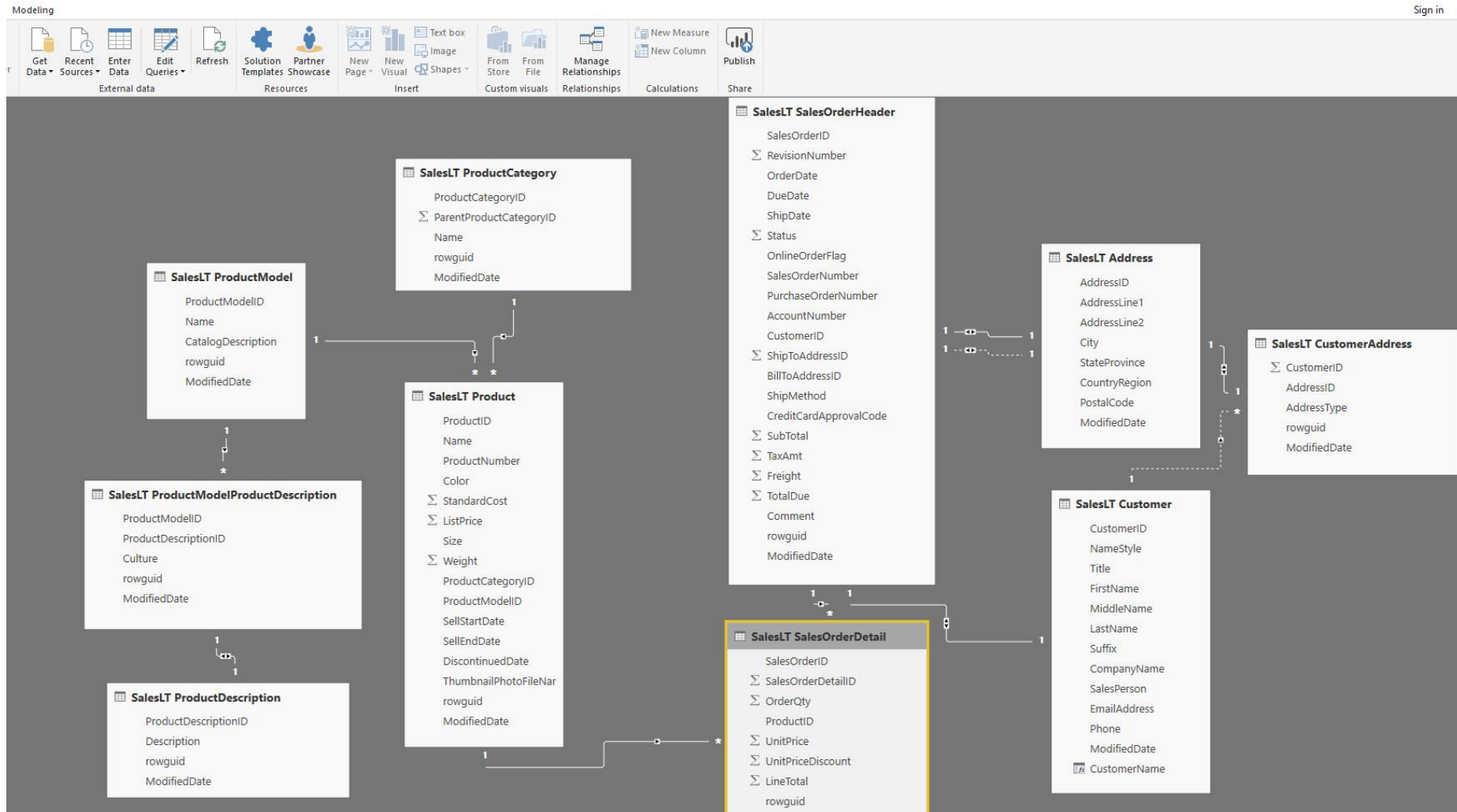
# AdventureWorksLT Data Model



# AdventureWorksLT Data Model



# AdventureWorksLT Data Model



- Entity-Relationship (ER) Model
- Transactions
  - SalesOrderHeader
  - SalesOrderDetail
- What is sold:
  - Products
- Product Hierarchy:
  - Product Model
  - Product Category
- Who sold to:
  - People
  - Company
- Where:
  - Address
    - City
    - Country

# AdventureWorksLT

table name	row count
Address	450
Customer	847
CustomerAddress	417
Product	295
ProductCategory	41
ProductDescription	762
ProductModel	128
ProductModelProductDescription	762
SalesOrderDetail	542
SalesOrderHeader	32

# AdventureWorksLT

dbName	Schema	TableName	Rows	dbName	SchemaName	TableName	Rows	dbName	Schema	TableName	Rows
AdventureWorksLT2019	dbo	BuildVersion	1	AdventureWorks2019	dbo	AWBuildVersion	1	AdventureWorksDW2019	dbo	AdventureWorksDWBuildVersion	1
AdventureWorksLT2019	dbo	ErrorLog	0	AdventureWorks2019	dbo	DatabaseLog	1,596	AdventureWorksDW2019	dbo	DatabaseLog	96
AdventureWorksLT2019	SalesLT	Address	450	AdventureWorks2019	dbo	ErrorLog	0	AdventureWorksDW2019	dbo	DimAccount	99
AdventureWorksLT2019	SalesLT	Customer	847	AdventureWorks2019	HumanResources	Department	16	AdventureWorksDW2019	dbo	DimCurrency	105
AdventureWorksLT2019	SalesLT	CustomerAddress	417	AdventureWorks2019	HumanResources	Employee	290	AdventureWorksDW2019	dbo	DimCustomer	18,484
AdventureWorksLT2019	SalesLT	Product	295	AdventureWorks2019	HumanResources	EmployeeDepartmentHistory	296	AdventureWorksDW2019	dbo	DimDate	3,652
AdventureWorksLT2019	SalesLT	ProductCategory	41	AdventureWorks2019	HumanResources	EmployeePayHistory	316	AdventureWorksDW2019	dbo	DimDepartmentGroup	7
AdventureWorksLT2019	SalesLT	ProductDescription	762	AdventureWorks2019	HumanResources	JobCandidate	13	AdventureWorksDW2019	dbo	DimEmployee	296
AdventureWorksLT2019	SalesLT	ProductModel	128	AdventureWorks2019	HumanResources	Shift	3	AdventureWorksDW2019	dbo	DimGeography	655
AdventureWorksLT2019	SalesLT	ProductModelProductDescription	762	AdventureWorks2019	Person	Address	19,614	AdventureWorksDW2019	dbo	DimOrganization	14
AdventureWorksLT2019	SalesLT	SalesOrderDetail	542	AdventureWorks2019	Person	AddressType	6	AdventureWorksDW2019	dbo	DimProduct	606
AdventureWorksLT2019	SalesLT	SalesOrderHeader	32	AdventureWorks2019	Person	BusinessEntity	20,777	AdventureWorksDW2019	dbo	DimProductCategory	4
				AdventureWorks2019	Person	BusinessEntityAddress	19,614	AdventureWorksDW2019	dbo	DimProductSubcategory	37
				AdventureWorks2019	Person	BusinessEntityContact	909	AdventureWorksDW2019	dbo	DimPromotion	16
				AdventureWorks2019	Person	ContactType	20	AdventureWorksDW2019	dbo	DimReseller	701
				AdventureWorks2019	Person	CountryRegion	238	AdventureWorksDW2019	dbo	DimSalesReason	10
				AdventureWorks2019	Person	EmailAddress	19,972	AdventureWorksDW2019	dbo	DimSalesTerritory	11
				AdventureWorks2019	Person	Password	19,972	AdventureWorksDW2019	dbo	DimScenario	3
				AdventureWorks2019	Person	Person	19,972	AdventureWorksDW2019	dbo	FactAdditionalInternationalProductDescription	15,168
				AdventureWorks2019	Person	PersonPhone	19,972	AdventureWorksDW2019	dbo	FactCallCenter	120
				AdventureWorks2019	Person	PhoneNumberType	3	AdventureWorksDW2019	dbo	FactCurrencyRate	14,264
				AdventureWorks2019	Person	StateProvince	181	AdventureWorksDW2019	dbo	FactFinance	39,409
				AdventureWorks2019	Production	BillOfMaterials	2,679	AdventureWorksDW2019	dbo	FactInternetSales	60,398
				AdventureWorks2019	Production	Culture	8	AdventureWorksDW2019	dbo	FactInternetSalesReason	64,515
				AdventureWorks2019	Production	Document	13	AdventureWorksDW2019	dbo	FactProductInventory	#####
				AdventureWorks2019	Production	Illustration	5	AdventureWorksDW2019	dbo	FactResellerSales	60,855
				AdventureWorks2019	Production	Location	14	AdventureWorksDW2019	dbo	FactSalesQuota	163
				AdventureWorks2019	Production	Product	504	AdventureWorksDW2019	dbo	FactSurveyResponse	2,727
				AdventureWorks2019	Production	ProductCategory	4	AdventureWorksDW2019	dbo	NewFactCurrencyRate	50
				AdventureWorks2019	Production	ProductCostHistory	395	AdventureWorksDW2019	dbo	ProspectiveBuyer	2,059
				AdventureWorks2019	Production	ProductDescription	762	AdventureWorksDW2019	dbo	sysdiagrams	9
				AdventureWorks2019	Production	ProductDocument	32				
				AdventureWorks2019	Production	ProductInventory	1,069				
				AdventureWorks2019	Production	ProductListPriceHistory	395				
				AdventureWorks2019	Production	ProductModel	128				
				AdventureWorks2019	Production	ProductModelIllustration	7				
				AdventureWorks2019	Production	ProductModelProductDescriptionCulture	762				
				AdventureWorks2019	Production	ProductPhoto	101				
				AdventureWorks2019	Production	ProductProductPhoto	504				
				AdventureWorks2019	Production	ProductReview	4				
				AdventureWorks2019	Production	ProductSubcategory	37				
				AdventureWorks2019	Production	ScrapReason	16				
				AdventureWorks2019	Production	TransactionHistory	#####				
				AdventureWorks2019	Production	TransactionHistoryArchive	89,253				
				AdventureWorks2019	Production	UnitMeasure	38				
				AdventureWorks2019	Production	WorkOrder	72,591				
				AdventureWorks2019	Production	WorkOrderRouting	67,131				
				AdventureWorks2019	Purchasing	ProductVendor	460				
				AdventureWorks2019	Purchasing	PurchaseOrderDetail	8,845				
				AdventureWorks2019	Purchasing	PurchaseOrderDetail_Altered	10,599				
				AdventureWorks2019	Purchasing	PurchaseOrderHeader	4,012				
				AdventureWorks2019	Purchasing	PurchaseOrderHeader_altered	4,970				
				AdventureWorks2019	Purchasing	ShipMethod	5				
				AdventureWorks2019	Purchasing	Vendor	104				
				AdventureWorks2019	Sales	CountryRegionCurrency	109				
				AdventureWorks2019	Sales	CreditCard	19,118				
				AdventureWorks2019	Sales	Currency	105				
				AdventureWorks2019	Sales	CurrencyRate	13,532				
				AdventureWorks2019	Sales	Customer	19,820				
				AdventureWorks2019	Sales	PersonCreditCard	19,118				
				AdventureWorks2019	Sales	SalesOrderDetail	#####				
				AdventureWorks2019	Sales	SalesOrderDetail_Updated	0				
				AdventureWorks2019	Sales	SalesOrderHeader	31,465				
				AdventureWorks2019	Sales	SalesOrderHeader_Updated	0				
				AdventureWorks2019	Sales	SalesOrderHeaderSalesReason	27,847				
				AdventureWorks2019	Sales	SalesPerson	17				
				AdventureWorks2019	Sales	SalesPersonQuotaHistory	163				
				AdventureWorks2019	Sales	SalesReason	10				
				AdventureWorks2019	Sales	SalesTaxRate	29				
				AdventureWorks2019	Sales	SalesTerritory	10				
				AdventureWorks2019	Sales	SalesTerritoryHistory	17				
				AdventureWorks2019	Sales	ShoppingCartItem	3				
				AdventureWorks2019	Sales	SpecialOffer	16				
				AdventureWorks2019	Sales	SpecialOfferProduct	538				
				AdventureWorks2019	Sales	Store	701				

# AdventureWorksLT – Business Questions

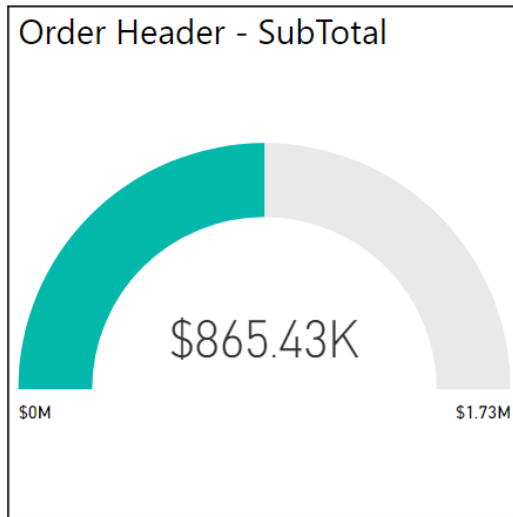
- a) Total sales
  - Using SalesOrderHeader
  - Using SalesOrderDetail
- b) Total sales by country – ranked/sorted (highest to lowest)
- c) Total sales by city & country – ranked/sorted (highest to lowest)
- d) Total sales by customer (person) – ranked/sorted (highest to lowest)
- e) Total sales by customer (company) – ranked/sorted (highest to lowest)
- f) Sales by product category – ranked/sorted (highest to lowest)
- g) Sales by product name – ranked/sorted (highest to lowest)



# Microsoft PowerBI

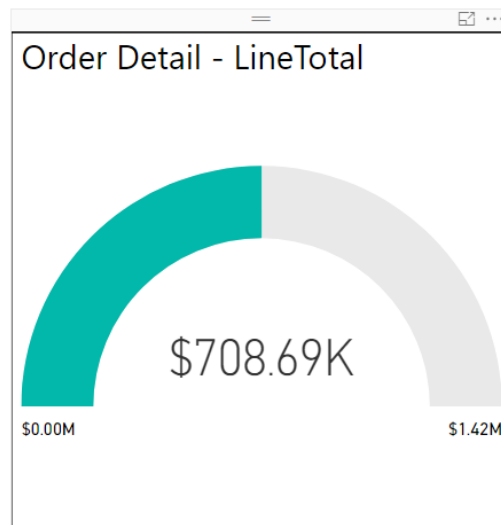
## Examples of data visualizations to answer questions

## a) Total sales



```
SELECT  format(sum(SubTotal), 'c', 'en-US' ) as SubTotal
,format(sum(TaxAmt), 'c', 'en-US' ) as TaxAm
,format(sum(Freight), 'c', 'en-US' ) as Freight
,format(sum(TotalDue), 'c', 'en-US' ) as TotalDue
FROM SalesLT.SalesOrderHeader
```

SubTotal	TaxAmt	Freight	TotalDue
\$865,433.12	\$69,234.65	\$21,635.83	\$956,303.59



```
SELECT  format(sum(LineTotal), 'c', 'en-US' ) as LineTotal
FROM SalesLT.SalesOrderDetail
```

LineTotal  
\$708,690.15

# b) Total sales by country – ranked/sorted (highest to lowest)

Sales by Country

CountryRegion	TotalDue
United Kingdom	\$572,497
United States	\$383,807
<b>Total</b>	<b>\$956,304</b>

TotalDue by CountryRegion

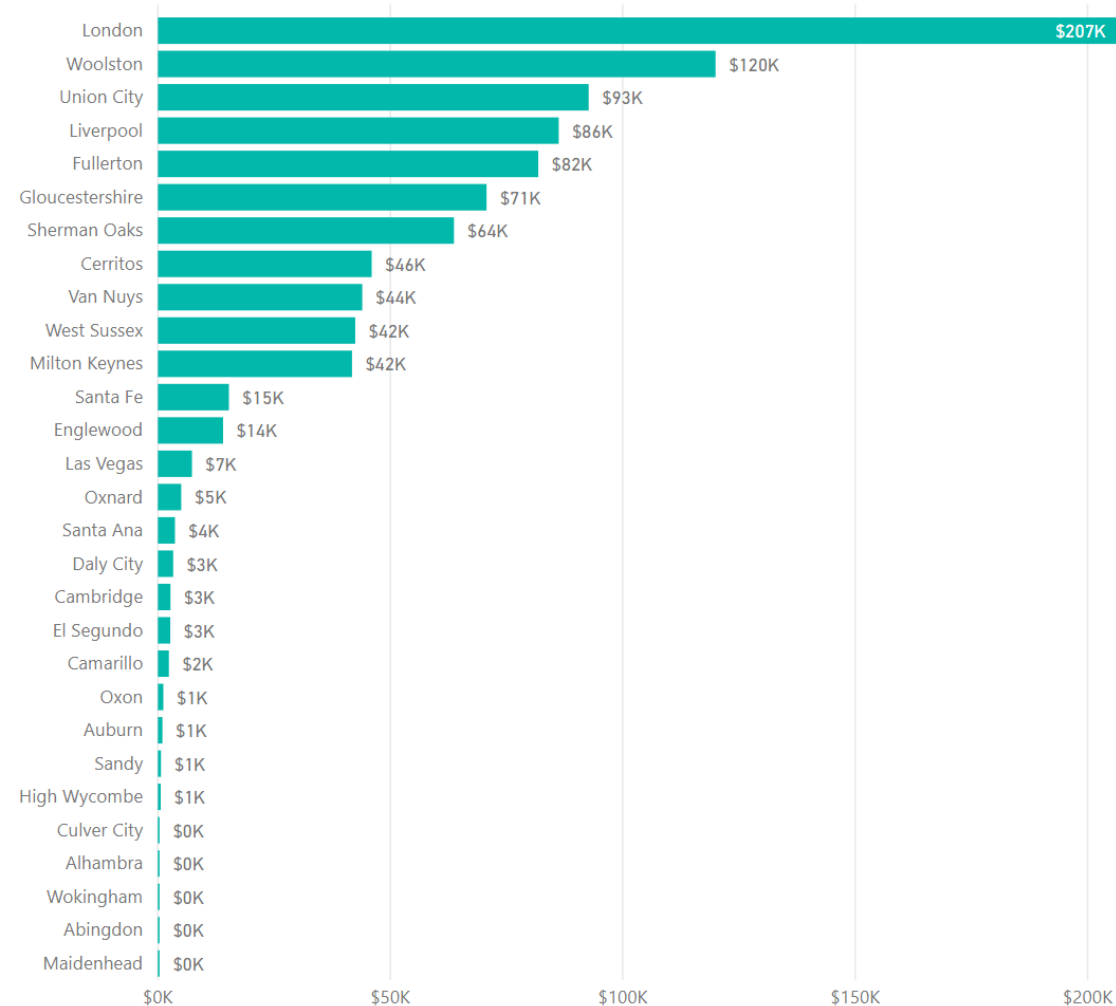


## c) Total sales by city & country - ranked/sorted (highest to lowest)

Total Due by City

CountryRegion	City	TotalDue
United Kingdom	London	\$206,736
United Kingdom	Woolston	\$119,961
United States	Union City	\$92,664
United Kingdom	Liverpool	\$86,223
United States	Fullerton	\$81,835
United Kingdom	Gloucestershire	\$70,699
United States	Sherman Oaks	\$63,686
United States	Cerritos	\$45,992
United States	Van Nuys	\$43,963
United Kingdom	West Sussex	\$42,453
United Kingdom	Milton Keynes	\$41,760
United States	Santa Fe	\$15,275
United States	Englewood	\$14,018
United States	Las Vegas	\$7,331
United States	Oxnard	\$5,016
United States	Santa Ana	\$3,673
United States	Daly City	\$3,294
United Kingdom	Cambridge	\$2,711
United States	El Segundo	\$2,669
United States	Camarillo	\$2,362
United Kingdom	Oxon	\$1,171
United States	Auburn	\$973
United States	Sandy	\$665
United Kingdom	High Wycombe	\$608
United States	Culver City	\$273
United States	Alhambra	\$118
United Kingdom	Wokingham	\$87
United Kingdom	Abingdon	\$45
United Kingdom	Maidenhead	\$43
<b>Total</b>		<b>\$956,304</b>

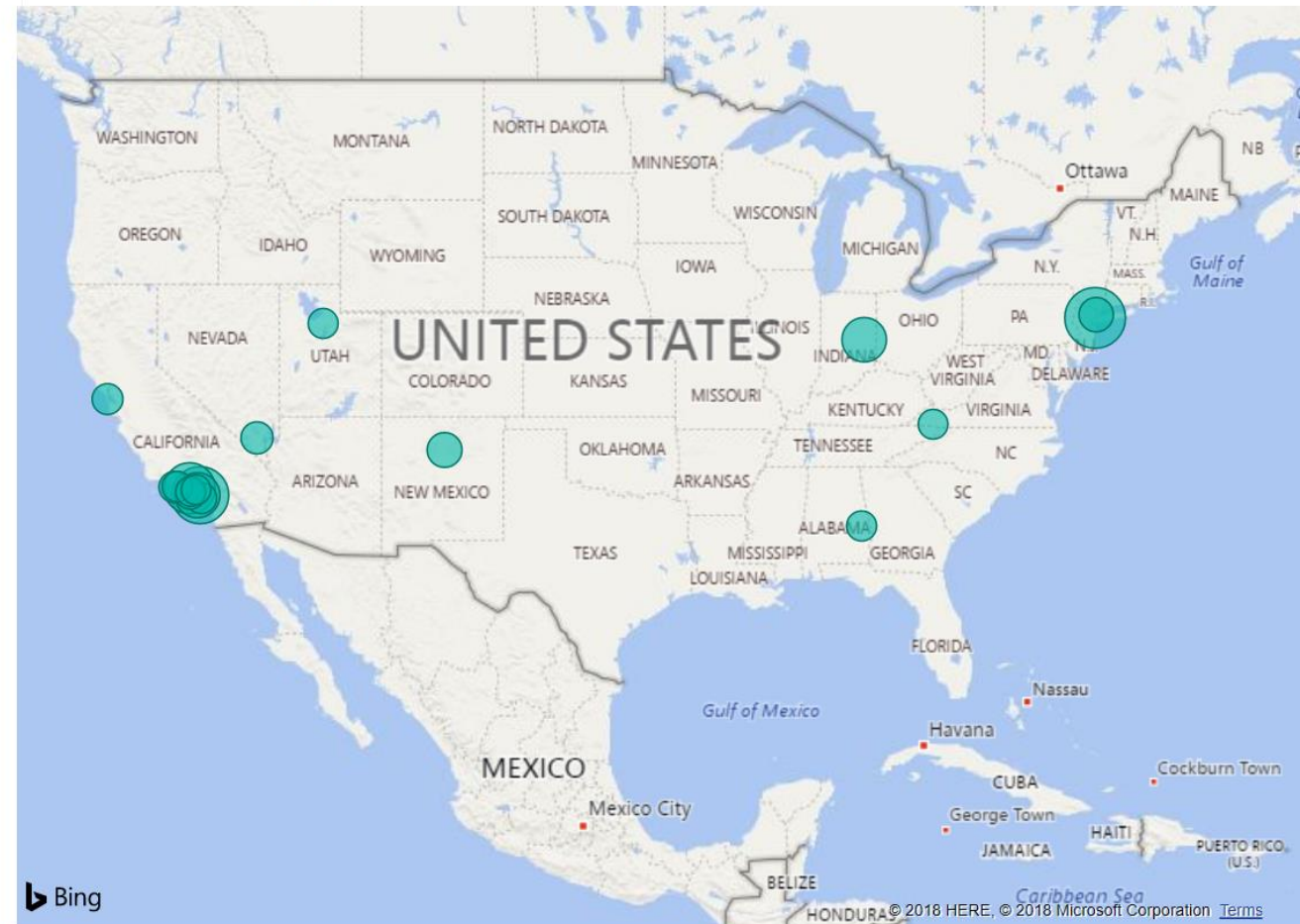
TotalDue by City



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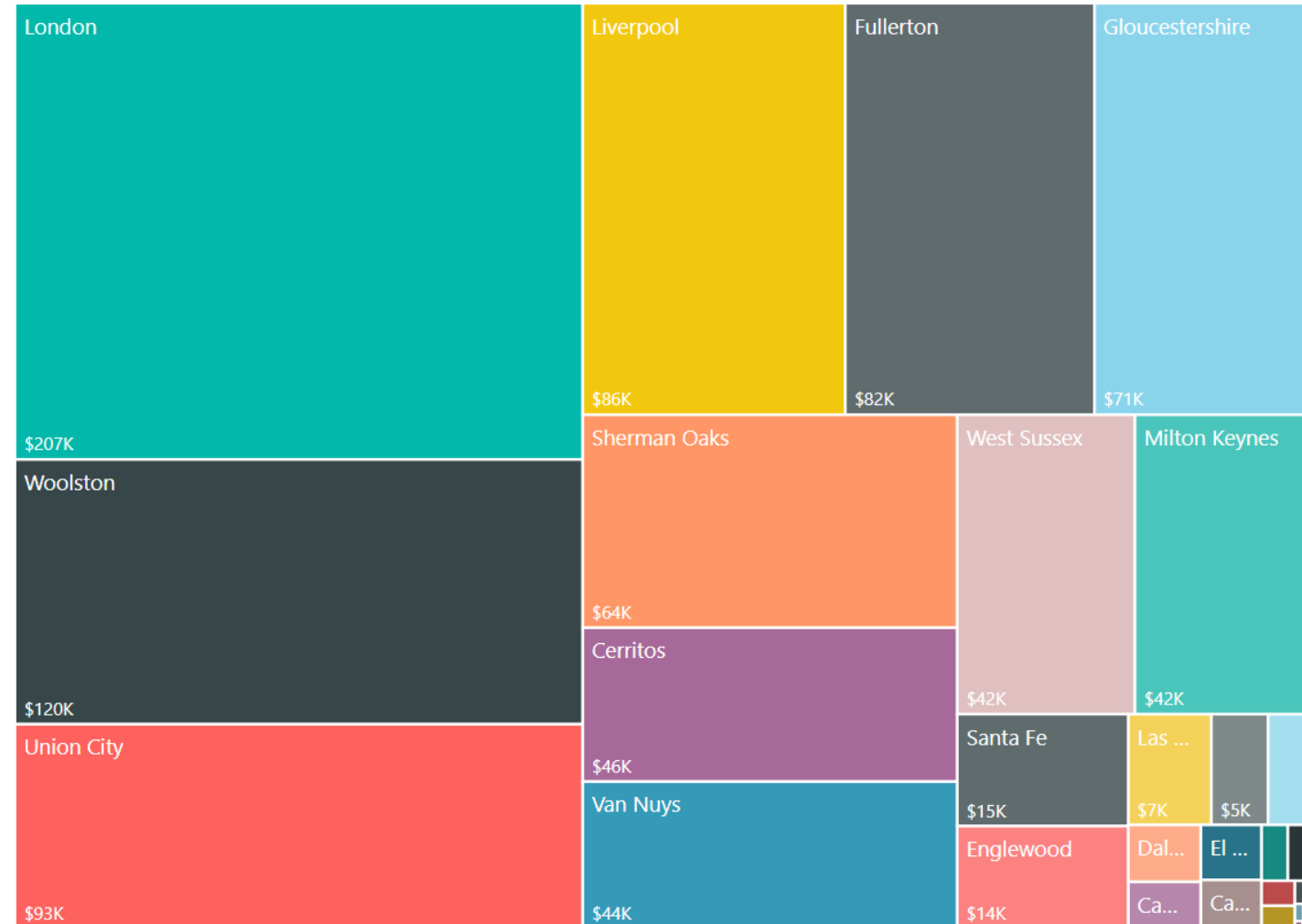
TotalDue by City



## c) Total sales by city & country – ranked/sorted (highest to lowest)

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United States	Las Vegas	\$7,331
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United States	Santa Ana	\$3,673
United States	Daly City	\$3,294
United Kingdom	Cambridge	\$2,711
United States	El Segundo	\$2,669
United States	Camarillo	\$2,362
United Kingdom	Oxon	\$1,171
United States	Auburn	\$973
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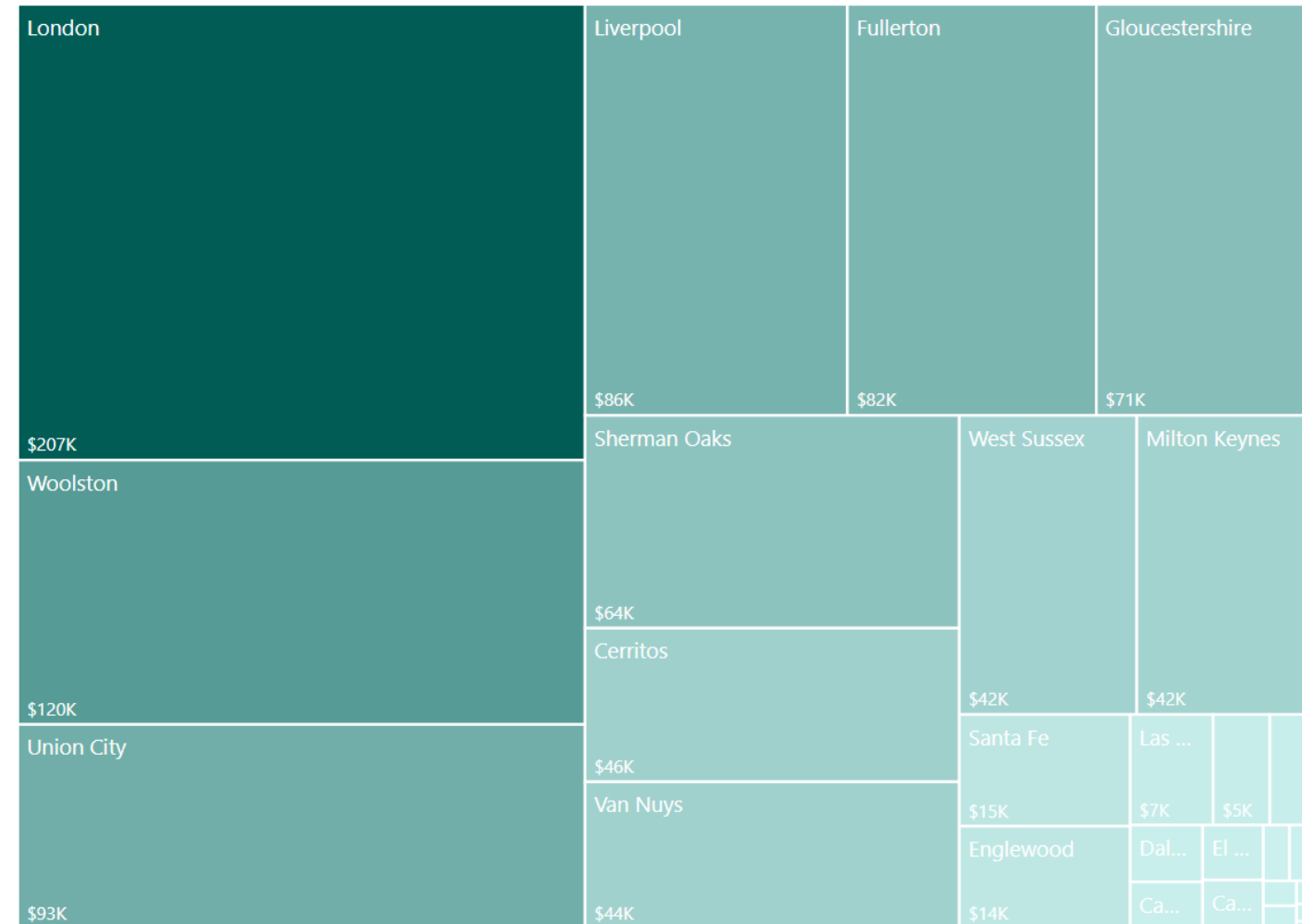
TotalDue by City



## c) Total sales by city & country – ranked/sorted (highest to lowest)

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United States	Sherman Oaks	\$63,686
United States	Cerritos	\$45,992
United States	Van Nuys	\$43,963
United Kingdom	West Sussex	\$42,453
United Kingdom	Milton Keynes	\$41,760
United States	Santa Fe	\$15,275
United States	Englewood	\$14,018
United States	Las Vegas	\$7,331
United States	Oxnard	\$5,016
United States	Santa Ana	\$3,673
United States	Daly City	\$3,294
United Kingdom	Cambridge	\$2,711
United States	El Segundo	\$2,669
United States	Camarillo	\$2,362
United Kingdom	Oxon	\$1,171
United States	Auburn	\$973
United States	Sandy	\$665
United Kingdom	High Wycombe	\$608
United States	Culver City	\$273
United States	Alhambra	\$118
United Kingdom	Wokingham	\$87
United Kingdom	Abingdon	\$45
United Kingdom	Maidenhead	\$43
<b>Total</b>		<b>\$956,304</b>

TotalDue by City





## d) Total sales by customer (person) – ranked/sorted (highest to lowest)

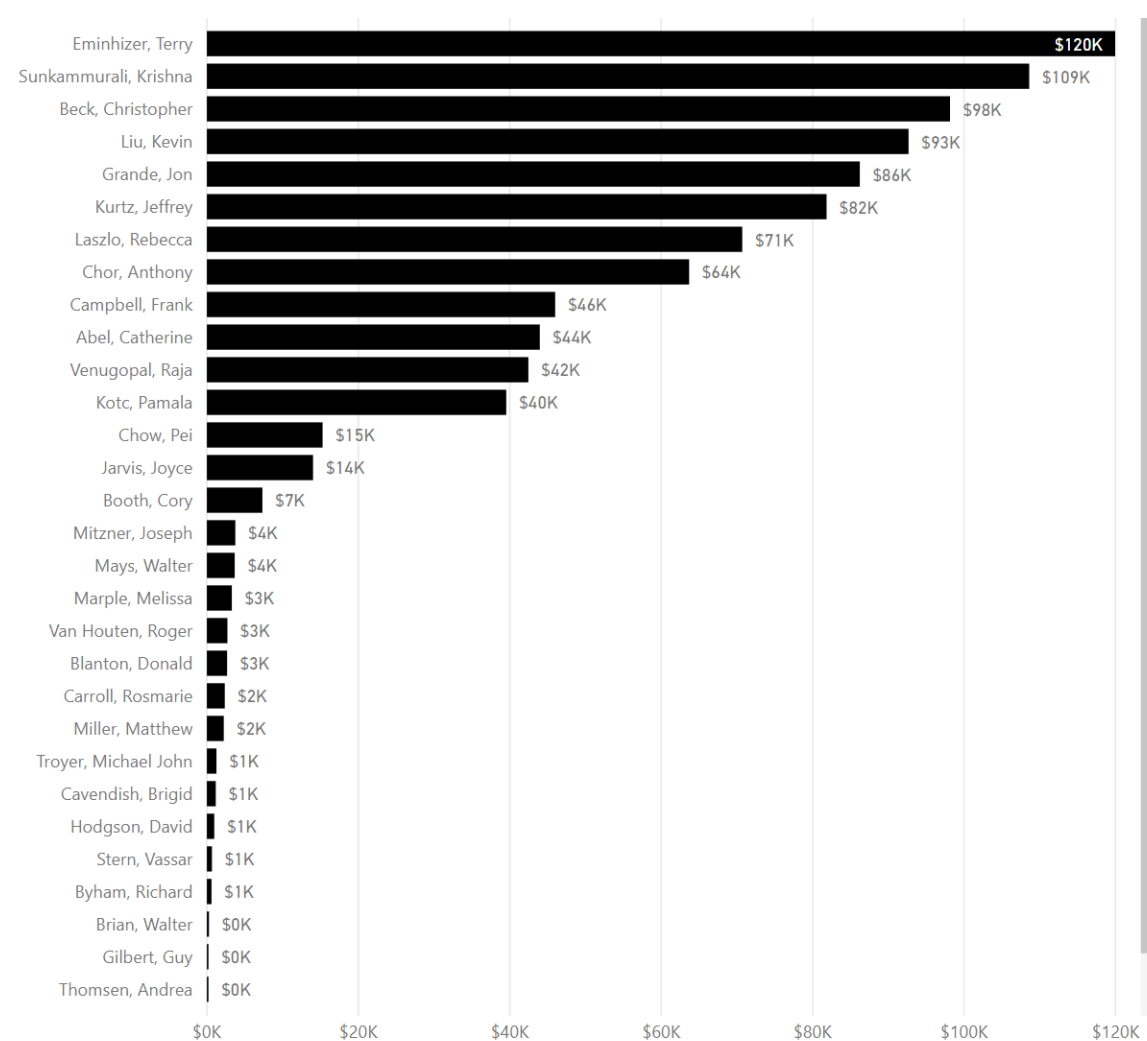
Sales by Customers

LastName	FirstName	TotalDue
Beck	Christopher	\$98,138
Liu	Kevin	\$92,664
Grande	Jon	\$86,223
Kurtz	Jeffrey	\$81,835
Laszlo	Rebecca	\$70,699
Chor	Anthony	\$63,686
Campbell	Frank	\$45,992
Abel	Catherine	\$43,963
Venugopal	Raja	\$42,453
Kotc	Pamala	\$39,532
Chow	Pei	\$15,275
Jarvis	Joyce	\$14,018
Booth	Cory	\$7,331
Mitzner	Joseph	\$3,755
Mays	Walter	\$3,673
Marple	Melissa	\$3,294
Van Houten	Roger	\$2,711
Blanton	Donald	\$2,669
Carroll	Rosmarie	\$2,362
Miller	Matthew	\$2,228
Troyer	Michael John	\$1,261
Cavendish	Brigid	\$1,171
Hodgson	David	\$973
Stern	Vassar	\$665
Byham	Richard	\$608
Brian	Walter	\$273
Gilbert	Guy	\$118
Thomsen	Andrea	\$87
<b>Total</b>		<b>\$956,304</b>

Sales by Customers

CustomerName	TotalDue
Eminhizer, Terry	\$119,961
Sunkammurali, Krishna	\$108,598
Beck, Christopher	\$98,138
Liu, Kevin	\$92,664
Grande, Jon	\$86,223
Kurtz, Jeffrey	\$81,835
Laszlo, Rebecca	\$70,699
Chor, Anthony	\$63,686
Campbell, Frank	\$45,992
Abel, Catherine	\$43,963
Venugopal, Raja	\$42,453
Kotc, Pamala	\$39,532
Chow, Pei	\$15,275
Jarvis, Joyce	\$14,018
Booth, Cory	\$7,331
Mitzner, Joseph	\$3,755
Mays, Walter	\$3,673
Marple, Melissa	\$3,294
Van Houten, Roger	\$2,711
Blanton, Donald	\$2,669
Carroll, Rosmarie	\$2,362
Miller, Matthew	\$2,228
Troyer, Michael John	\$1,261
Cavendish, Brigid	\$1,171
Hodgson, David	\$973
Stern, Vassar	\$665
Byham, Richard	\$608
Brian, Walter	\$273
Gilbert, Guy	\$118
Thomsen, Andrea	\$87
Mitchell, Linda	\$45
Esteves, Janeth	\$43
<b>Total</b>	<b>\$956,304</b>

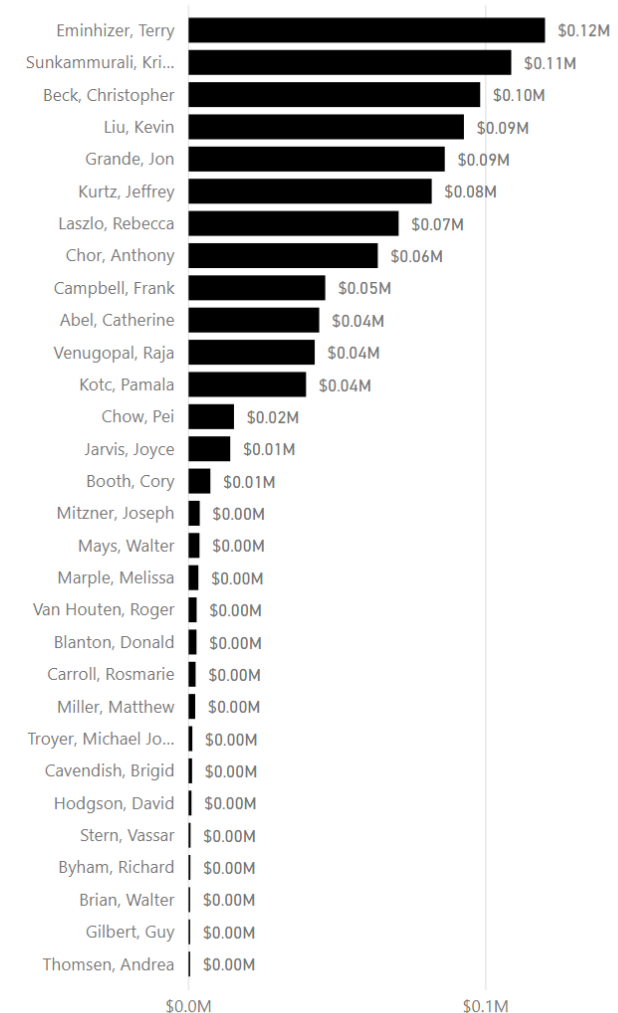
Sales by Customers



## d) Total sales by customer (person) – ranked/sorted (highest to lowest)

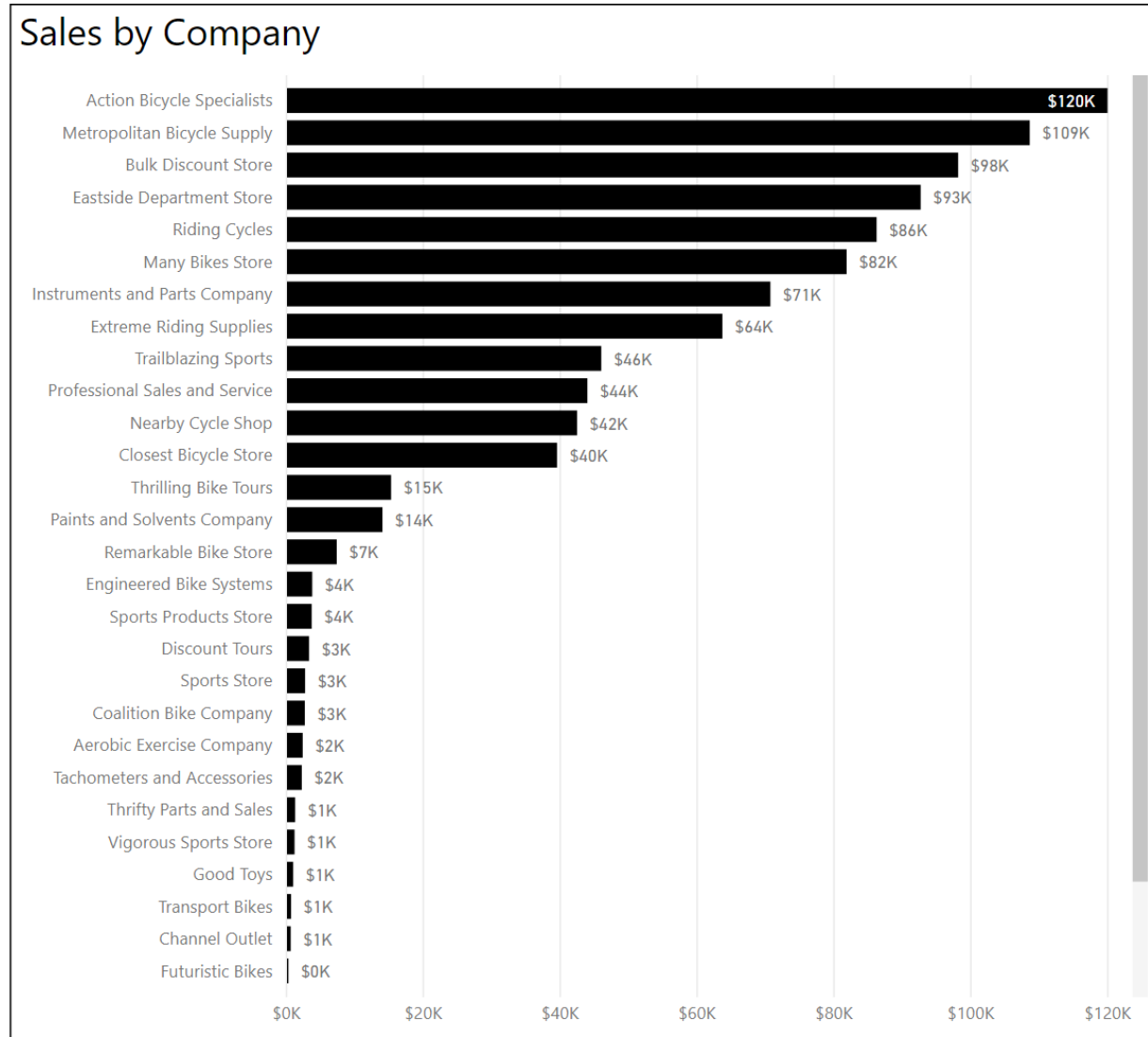
CustomerName	EmailAddress	AddressLine1	City	CountryRegion	PostalCode	TotalDue
Eminhizer, Terry	terry1@adventure-works.com	Warrington Ldc Unit 25/2	Woolston	United Kingdom	WA1 4SY	\$119,961
Sunkammurali, Krishna	krishna1@adventure-works.com	Paramount House	London	United Kingdom	W1N 9FA	\$108,598
Beck, Christopher	christopher1@adventure-works.com	93-2501, Blackfriars Road,	London	United Kingdom	SE1 8HL	\$98,138
Liu, Kevin	kevin5@adventure-works.com	9992 Whipple Rd	Union City	United States	94587	\$92,664
Grande, Jon	jon1@adventure-works.com	Galashiels	Liverpool	United Kingdom	L4 4HB	\$86,223
Kurtz, Jeffrey	jeffrey3@adventure-works.com	Receiving	Fullerton	United States	92831	\$81,835
Laszlo, Rebecca	rebecca2@adventure-works.com	Phoenix Way, Cirencester	Gloucestershire	United Kingdom	GL7 1RY	\$70,699
Chor, Anthony	anthony0@adventure-works.com	Riverside	Sherman Oaks	United States	91403	\$63,686
Campbell, Frank	frank4@adventure-works.com	251340 E. South St.	Cerritos	United States	90703	\$45,992
Abel, Catherine	catherine0@adventure-works.com	57251 Serene Blvd	Van Nuys	United States	91411	\$43,963
Venugopal, Raja	raja0@adventure-works.com	Burgess Hill	West Sussex	United Kingdom	RH15 9UD	\$42,453
Kotc, Pamala	pamala0@adventure-works.com	Garamonde Drive, Wymbush	Milton Keynes	United Kingdom	MK8 8ZD	\$39,532
Chow, Pei	pei0@adventure-works.com	4660 Rodeo Road	Santa Fe	United States	87501	\$15,275
Jarvis, Joyce	joyce0@adventure-works.com	955 E. County Line Rd.	Englewood	United States	80110	\$14,018
Booth, Cory	cory0@adventure-works.com	Eastern Beltway Center	Las Vegas	United States	89106	\$7,331
Mitzner, Joseph	joseph4@adventure-works.com	123 Camelia Avenue	Oxnard	United States	93030	\$3,755
Mays, Walter	walter1@adventure-works.com	Po Box 252525	Santa Ana	United States	92701	\$3,673
Marple, Melissa	melissa0@adventure-works.com	603 Gellert Blvd	Daly City	United States	94015	\$3,294
Van Houten, Roger	roger2@adventure-works.com	Internet House, 3399 Science Park	Cambridge	United Kingdom	CB4 4BZ	\$2,711
Blanton, Donald	donald0@adventure-works.com	Corporate Office	El Segundo	United States	90245	\$2,669
Carroll, Rosmarie	rosmarie0@adventure-works.com	39933 Mission Oaks Blvd	Camarillo	United States	93010	\$2,362
Miller, Matthew	matthew5@adventure-works.com	Wymbush	Milton Keynes	United Kingdom	MK8 8DF	\$2,228
Troyer, Michael John	michaeljohn0@adventure-works.com	Oxnard Outlet	Oxnard	United States	93030	\$1,261
Cavendish, Brigid	brigid0@adventure-works.com	Banbury	Oxon	United Kingdom	OX16 8RS	\$1,171
Hodgson, David	david16@adventure-works.com	99700 Bell Road	Auburn	United States	95603	\$973
Stern, Vassar	vassar0@adventure-works.com	25130 South State Street	Sandy	United States	84070	\$665
Byham, Richard	richard2@adventure-works.com	Knives Beech Ind.	High Wycombe	United Kingdom	HP10 9QY	\$608
Brian, Walter	walter0@adventure-works.com	25136 Jefferson Blvd.	Culver City	United States	90232	\$273
Gilbert, Guy	guy0@adventure-works.com	Vista Marketplace	Alhambra	United States	91801	\$118
Thomsen, Andrea	andrea1@adventure-works.com	251 The Metro Center	Wokingham	United Kingdom	RG41 1QW	\$87
Mitchell, Linda	linda9@adventure-works.com	New Millhouse, 2583 Milton Park	Abingdon	United Kingdom	OX14 4SE	\$45
Esteves, Janeth	janeth1@adventure-works.com	6 The Farm, Liberty Road	Maidenhead	United Kingdom	SL67RJ	\$43
<b>Total</b>						<b>\$956,304</b>

Sales by Customers

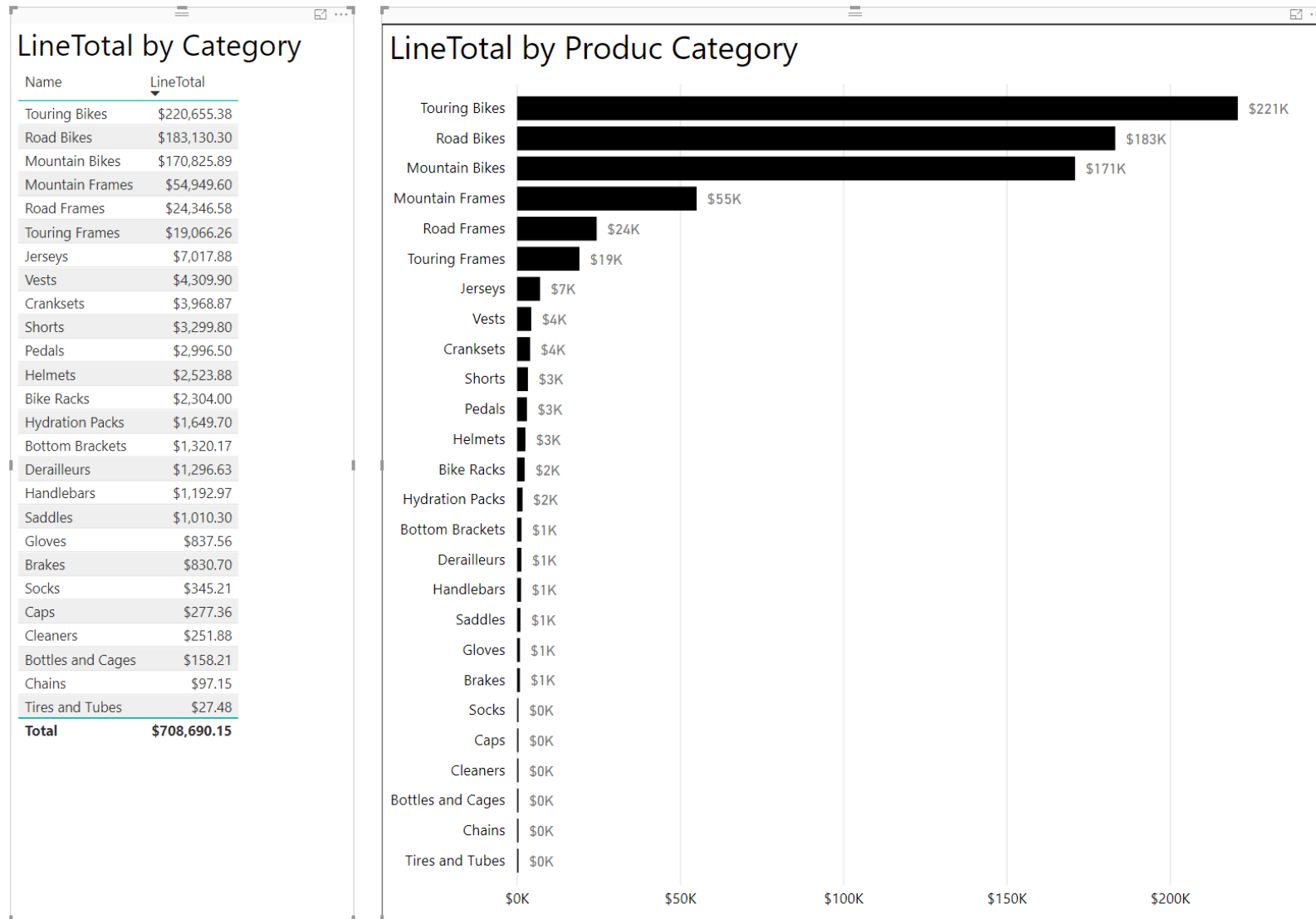


## e) Total sales by customer (company) – ranked/sorted (highest to lowest)

CompanyName ▼	TotalDue ▲
West Side Mart	\$87
Vigorous Sports Store	\$1,171
Transport Bikes	\$665
Trailblazing Sports	\$45,992
Thrilling Bike Tours	\$15,275
Thrifty Parts and Sales	\$1,261
The Bicycle Accessories Company	\$118
Tachometers and Accessories	\$2,228
Sports Store	\$2,711
Sports Products Store	\$3,673
Riding Cycles	\$86,223
Remarkable Bike Store	\$7,331
Professional Sales and Service	\$43,963
Paints and Solvents Company	\$14,018
Nearby Cycle Shop	\$42,453
Metropolitan Bicycle Supply	\$108,598
Many Bikes Store	\$81,835
Instruments and Parts Company	\$70,699
Good Toys	\$973
Futuristic Bikes	\$273
Extreme Riding Supplies	\$63,686
Essential Bike Works	\$45
Engineered Bike Systems	\$3,755
Eastside Department Store	\$92,664
Discount Tours	\$3,294
Coalition Bike Company	\$2,669
Channel Outlet	\$1K
<b>Total</b>	<b>\$956,304</b>



## f - Sales by product category – ranked/sorted (highest to lowest)



# f - Sales by product category – ranked/sorted (highest to lowest)

LineTotal by Category

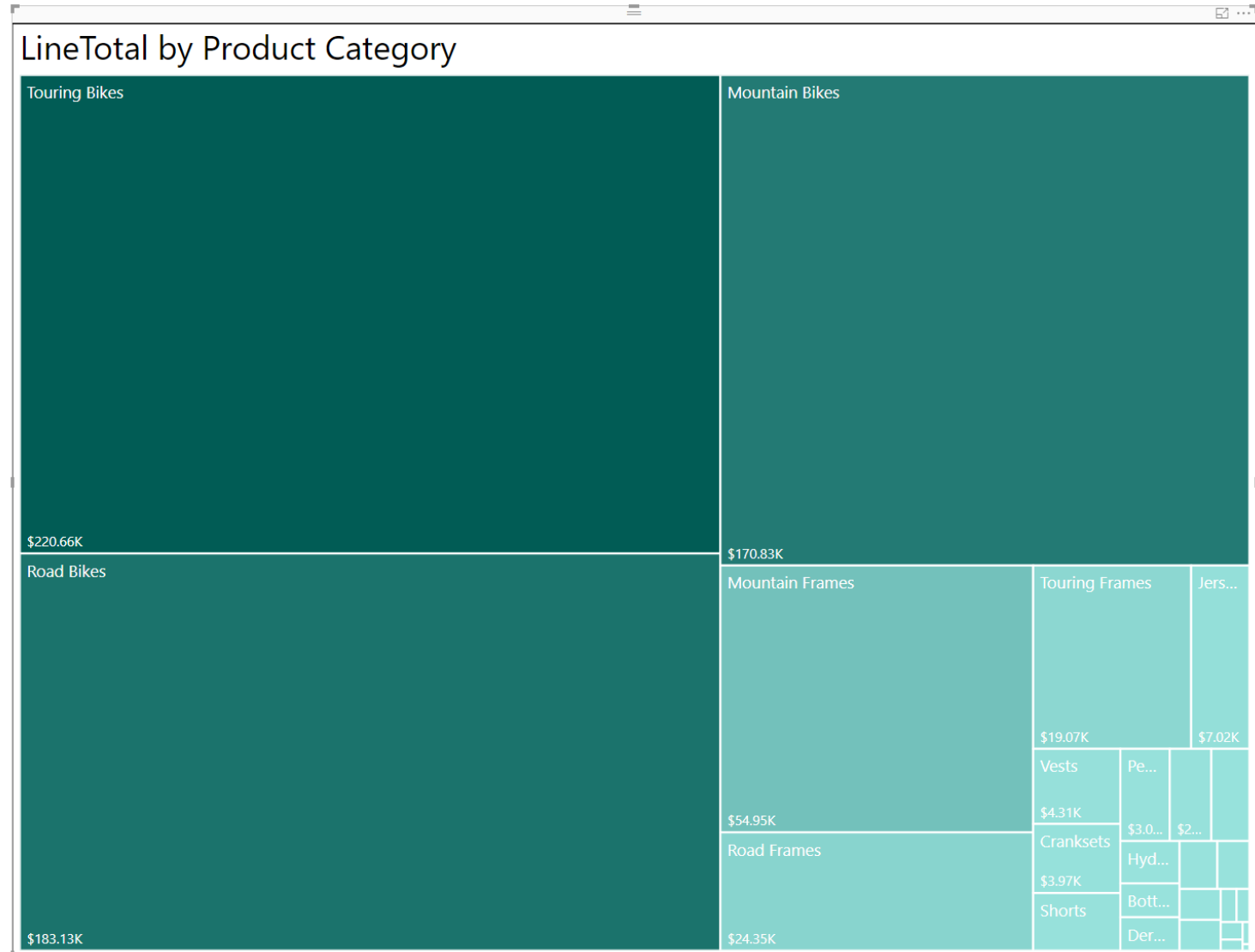
Name	LineTotal
Tires and Tubes	\$27.48
Chains	\$97.15
Bottles and Cages	\$158.21
Cleaners	\$251.88
Caps	\$277.36
Socks	\$345.21
Brakes	\$830.70
Gloves	\$837.56
Saddles	\$1,010.30
Handlebars	\$1,192.97
Derailleurs	\$1,296.63
Bottom Brackets	\$1,320.17
Hydration Packs	\$1,649.70
Bike Racks	\$2,304.00
Helmets	\$2,523.88
Pedals	\$2,996.50
Shorts	\$3,299.80
Cranksets	\$3,968.87
Vests	\$4,309.90
Jerseys	\$7,017.88
Touring Frames	\$19,066.26
Road Frames	\$24,346.58
Mountain Frames	\$54,949.60
Mountain Bikes	\$170,825.89
Road Bikes	\$183,130.30
Touring Bikes	\$220,655.38
<b>Total</b>	<b>\$708,690.15</b>

LineTotal by Product Category



## f - Sales by product category – ranked/sorted (highest to lowest)

Name	LineTotal
Tires and Tubes	\$27.48
Chains	\$97.15
Bottles and Cages	\$158.21
Cleaners	\$251.88
Caps	\$277.36
Socks	\$345.21
Brakes	\$830.70
Gloves	\$837.56
Saddles	\$1,010.30
Handlebars	\$1,192.97
Derailleurs	\$1,296.63
Bottom Brackets	\$1,320.17
Hydration Packs	\$1,649.70
Bike Racks	\$2,304.00
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Road Frames	\$24,346.58
Mountain Frames	\$54,949.60
Mountain Bikes	\$170,825.89
Road Bikes	\$183,130.30
Touring Bikes	\$220,655.38
<b>Total</b>	<b>\$708,690.15</b>



# f - Sales by product name – ranked/sorted (highest to lowest)

Category Name	Product Name	LineTotal	OrderQty
Touring Bikes	Touring-1000 Blue, 60	\$37,191.49	26
Mountain Bikes	Mountain-200 Black, 42	\$37,178.84	27
Road Bikes	Road-350-W Yellow, 48	\$36,486.24	42
Mountain Bikes	Mountain-200 Black, 38	\$35,801.84	26
Touring Bikes	Touring-1000 Yellow, 60	\$23,413.47	17
Touring Bikes	Touring-1000 Blue, 50	\$22,887.07	16
Mountain Bikes	Mountain-200 Silver, 42	\$20,879.91	15
Road Bikes	Road-350-W Yellow, 40	\$20,411.88	20
Mountain Bikes	Mountain-200 Black, 46	\$19,277.92	14
Road Bikes	Road-350-W Yellow, 42	\$18,692.52	19
Mountain Bikes	Mountain-200 Silver, 46	\$18,095.92	13
Road Bikes	Road-250 Black, 44	\$17,592.12	12
Road Bikes	Road-250 Black, 48	\$17,592.12	12
Touring Bikes	Touring-1000 Blue, 46	\$17,165.30	12
Touring Bikes	Touring-1000 Yellow, 46	\$17,165.30	12
Mountain Bikes	Mountain-200 Silver, 38	\$15,311.93	11
Touring Bikes	Touring-2000 Blue, 54	\$13,120.38	18
Mountain Frames	HL Mountain Frame - Silver, 38	\$13,099.20	16
Road Bikes	Road-550-W Yellow, 38	\$12,773.59	19
Road Bikes	Road-250 Black, 52	\$11,728.08	8
Touring Bikes	Touring-3000 Blue, 50	\$10,244.43	23
Mountain Frames	HL Mountain Frame - Black, 42	\$9,717.12	12
Touring Bikes	Touring-3000 Yellow, 62	\$8,650.16	20
Touring Bikes	Touring-1000 Blue, 54	\$8,582.65	6
Mountain Frames	HL Mountain Frame - Silver, 46	\$8,187.00	10
Touring Bikes	Touring-3000 Yellow, 44	\$8,017.38	18
Touring Bikes	Touring-2000 Blue, 60	\$7,289.10	10
Touring Frames	HL Touring Frame - Yellow, 60	\$7,228.15	12
Touring Bikes	Touring-1000 Yellow, 50	\$7,152.21	5
Road Bikes	Road-750 Black, 48	\$6,803.87	21
Touring Bikes	Touring-3000 Blue, 54	\$6,681.15	15
Touring Bikes	Touring-2000 Blue, 46	\$6,560.19	9
Touring Bikes	Touring-2000 Blue, 50	\$6,560.19	9
<b>Total</b>		<b>\$708,690.15</b>	<b>2087</b>

