

Sales Management

Data Analysis Project

Business Request & User Stories

The business request for this data analyst project was an executive sales report for sales managers. Based on the request that was made by the business, the following user stories were defined to fulfill delivery and ensure that acceptance criteria were maintained throughout the project.

#	As a (role)	I want (request/demand)	So that I (user value)	Acceptance Criteria
1	Sales Manager	To get a dashboard overview of internet sales	Can follow better which customers and products sells the best	A Power BI dashboard which updates data once a day
2	Sales Representative	A detailed overview of Internet Sales per Customers	Can follow up my customers that buys the most and who we can sell more to	A Power BI dashboard which allows me to filter data for each customer
3	Sales Representative	A detailed overview of Internet Sales per Products	Can follow up my Products that sells the most	A Power BI dashboard which allows me to filter data for each Product

4 Sales Manager

A dashboard
overview of internet
sales

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 doing analysis and fulfilling the business needs defined in the user stories the following tables were extracted using SQL.

One data source (sales budgets) were provided in Excel format and were connected in the data model in a later step of the process.

Below are the SQL statements for cleansing and transforming necessary data.

DIM_Calendar:

```
/****** Cleansed DimData table *****/
SELECT
    [DateKey],
    [FullDateAlternateKey] as Date,
    --[DayNumberOfWeek]
    [EnglishDayNameOfWeek] as Day,
    left([EnglishDayNameOfWeek], 3) as DayShort,
    --,[SpanishDayNameOfWeek]
    --,[FrenchDayNameOfWeek]
    --,[DayNumberOfMonth]
    --,[DayNumberOfYear]
    [WeekNumberOfYear] as WeekNr,
    [EnglishMonthName] as Month,
    left([EnglishMonthName], 3) as MonthShort,
    --,[SpanishMonthName]
    --,[FrenchMonthName]
    [MonthNumberOfYear] as MonthNr,
    [CalendarQuarter] as Quarter,
```

```

[CalendarYear] as Year --,[CalendarSemester]
--,[FiscalQuarter]
--,[FiscalYear]
--,[FiscalSemester]
FROM
[AdventureWorksDW2019].[dbo].[DimDate]
where
CalendarYear >= 2020

```

DIM_Customers:

```

/***** Cleansed Customer Dim Table *****/
SELECT
[CustomerKey],
--,[GeographyKey]
--,[CustomerAlternateKey]
--,[Title]
c.firstname as [FirstName],
--,[MiddleName]
c.lastname as [LastName],
c.firstname + ' ' + lastname as [Full Name],
--combined first name and last name,
--,[NameStyle]
--,[BirthDate]
--,[MaritalStatus]
--,[Suffix]
case c.gender when 'M' then 'Male' when 'F' then 'Female' end as
Gender,
--,[EmailAddress]
--,[YearlyIncome]
--,[TotalChildren]
--,[NumberChildrenAtHome]
--,[EnglishEducation]
--,[SpanishEducation]
--,[FrenchEducation]

```

```

    --,[EnglishOccupation]
    --,[SpanishOccupation]
    --,[FrenchOccupation]
    --,[HouseOwnerFlag]
    --,[NumberCarsOwned]
    --,[AddressLine1]
    --,[AddressLine2]
    --,[Phone]
    c.datefirstpurchase as DateFirstPurchase,
    --,[CommuteDistance]
    g.city as [Customer City] --Joined in Customer City from Geography
table
FROM
    [AdventureWorksDW2019].[dbo].[DimCustomer] as c
    left join [AdventureWorksDW2019].[dbo].[DimGeography] as g on
    g.geographykey = c.geographykey
order by
    CustomerKey ASC --Ordered List by CustomerKey

```

DIM_Products:

```

/***** Cleansed DIM_Products Table *****/
SELECT
    p.[ProductKey],
    p.[ProductAlternateKey] as ProductItemCode --,[ProductSubcategoryKey]
    --,[WeightUnitMeasureCode]
    --,[SizeUnitMeasureCode]
    ,
    p.[EnglishProductName] as [Product Name],
    ps.EnglishProductSubcategoryName AS [Sub Category] --Joined in from
Sub Category Table
    ,
    pc.EnglishProductCategoryName as [Product Category] --Joined in from
Category Table
    --,[SpanishProductName]
    --,[FrenchProductName]
    --,[StandardCost]
    --,[FinishedGoodsFlag]
    ,
    p.[Color] as [Product Color] --,[SafetyStockLevel]

```

```

--,[ReorderPoint]
,p.[ListPrice] as [Product ListPrice]
,
p.[Size] as [Product Size] --,[SizeRange]
--,[Weight]
--,[DaysToManufacture]
,
p.[ProductLine] as [Product Line] --,[DealerPrice]
--,[Class]
--,[Style]
,
p.[ModelName] as [Product Model Name],
[LargePhoto],
p.[EnglishDescription] as [Product Description] --,[FrenchDescription]
--,[ChineseDescription]
--,[ArabicDescription]
--,[HebrewDescription]
--,[ThaiDescription]
--,[GermanDescription]
--,[JapaneseDescription]
--,[TurkishDescription]
--,[StartDate]
--,[EndDate]
,
isnull(p.Status, 'Outdated') as [Product Status]
FROM
[AdventureWorksDW2019].[dbo].[DimProduct] as p
left join [AdventureWorksDW2019].[dbo].[DimProductSubcategory] as ps
on ps.ProductSubcategoryKey = p.ProductSubcategoryKey
left join [AdventureWorksDW2019].[dbo].[DimProductCategory] as pc on
ps.ProductCategoryKey = pc.ProductCategoryKey
order by
p.ProductKey asc

```

FACT_InternetSales:

```

/***** Cleansed FACE_InternetSales Table *****/
SELECT

```

```

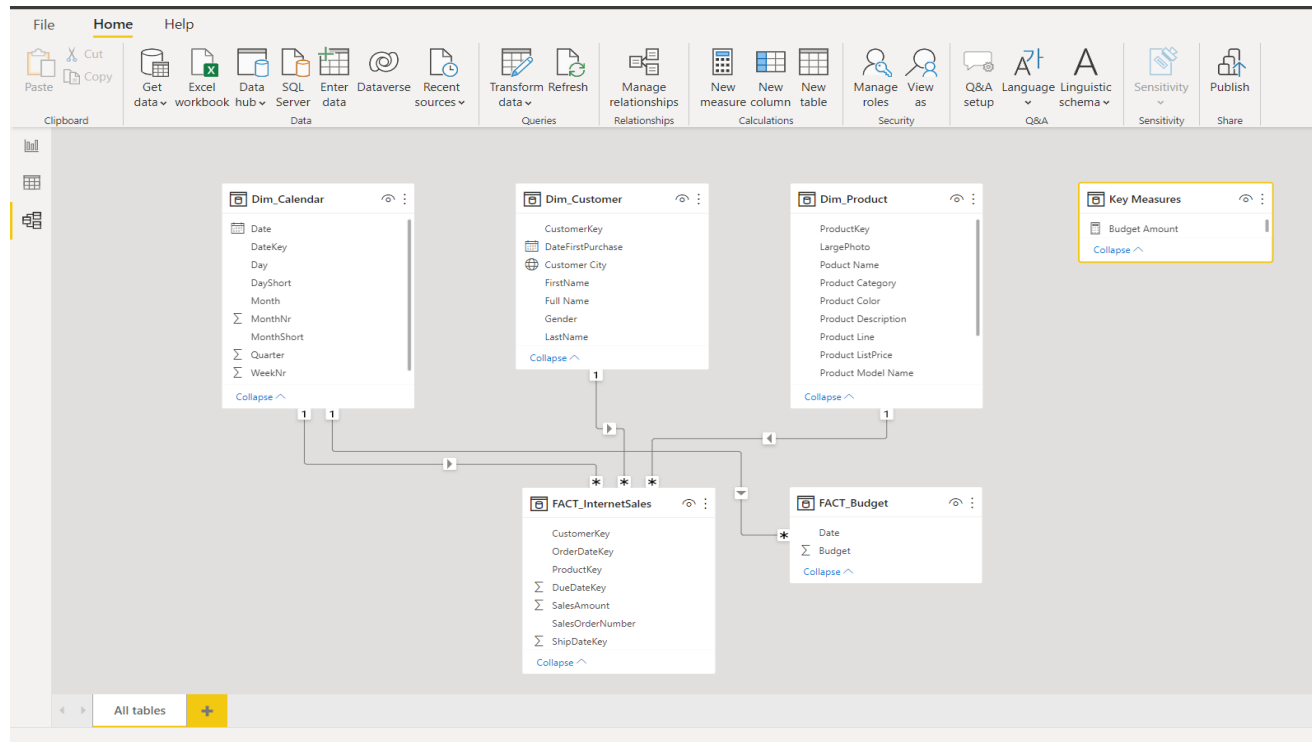
[ProductKey],
[OrderDateKey],
[DueDateKey],
[ShipDateKey],
[CustomerKey] --,[PromotionKey]
--,[CurrencyKey]
--,[SalesTerritoryKey],
[SalesOrderNumber] --,[SalesOrderLineNumber]
--,[RevisionNumber]
--,[OrderQuantity]
--,[UnitPrice]
--,[ExtendedAmount]
--,[UnitPriceDiscountPct]
--,[DiscountAmount]
--,[ProductStandardCost]
--,[TotalProductCost],
[SalesAmount] --,[TaxAmt]
--,[Freight]
--,[CarrierTrackingNumber]
--,[CustomerPONumber]
--,[OrderDate]
--,[DueDate]
--,[ShipDate]
FROM
  [AdventureWorksDW2019].[dbo].[FactInternetSales]
where
  LEFT (OrderDateKey, 4) >= YEAR(Getdate()) -2 -- Ensure we always only
bring two years of date from extraction
order by
  OrderDateKey asc

```

Data Model

Below is a screenshot of the data model after cleansed and prepared tables were read into Power BI.

This data model also shows how FACT_Budget has been connected to FACT_InternetSales and other necessary DIM tables.



Sales Management Dashboard

The finished sales management dashboard with one page with works as a dashboard and overview, with two other pages, focused on combining tables for necessary details and visualizations to show sales over time, per customer, and per product.

Sales Overview

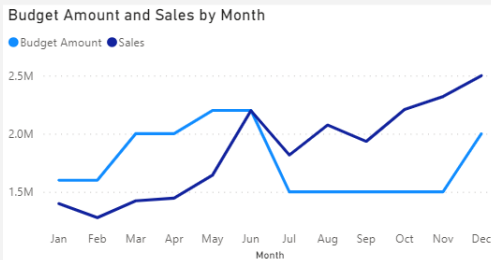
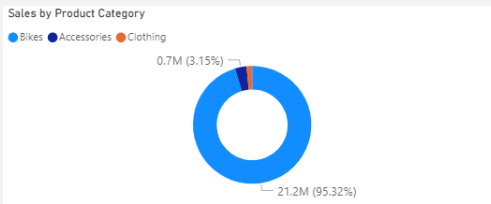
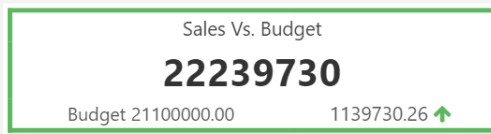
Year: 2020 2021 2022 Month: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Customer City: All

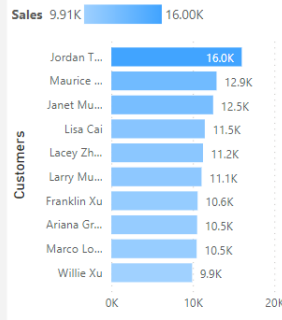
Sub Category: All

Category: All

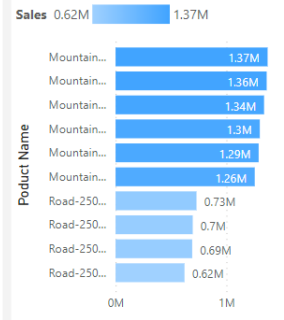
Product Name: All



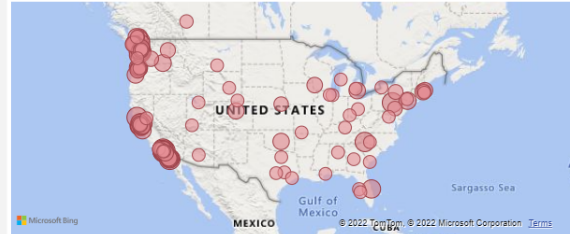
Sales by Top 10 Customers



Sales by Top 10 Products



Sales by Customer City



Customer Details

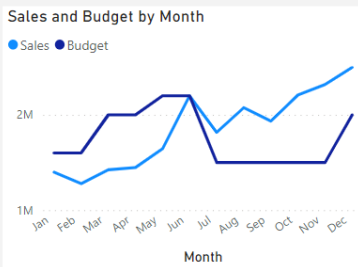
Year: 2020 2021 2022 Month: Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Customer City: All

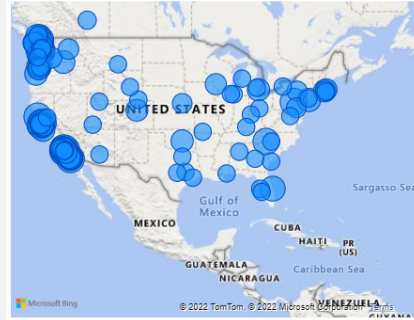
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Category: All

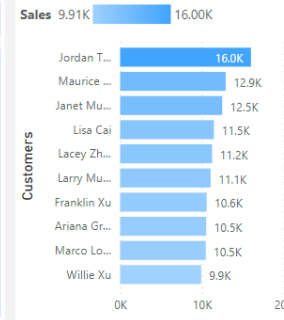
Product Name: All



Sales by Customer City



Sales by Top 10 Customers



Customers	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Jordan Turner	2,377	2,443			2,355		540	2,433	540		5,311		15,999
Maurice Shan	4,885		2,322				1,269		2,384			2,049	12,910
Janet Munoz	4,876		3,122							2,419	2,071		12,489
Lisa Cai				708	811	554		2,588	2,049	2,428		2,330	11,469
Lacey Zheng	2,462					594	549	2,419			2,805	2,419	11,248
Larry Munoz	2,320				575	540		2,384	2,049		781	2,419	11,068
Franklin Xu								2,182	2,334	1,274	2,419	2,377	10,586
Ariana Gray		2,502					575		2,413		2,620	2,419	10,529
Marco Lopez		2,330							2,433				10,468
Willie Xu			777			2,071	2,375			2,295	2,393		9,912
Total	13,98,749	12,78,343	14,23,390	14,46,358	16,43,471	21,98,338	18,16,234	20,74,983	19,33,673	22,08,453	23,18,876	24,98,862	2,22,39,730

Product Details

Year
2020 2021 2022

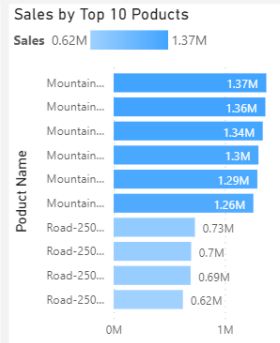
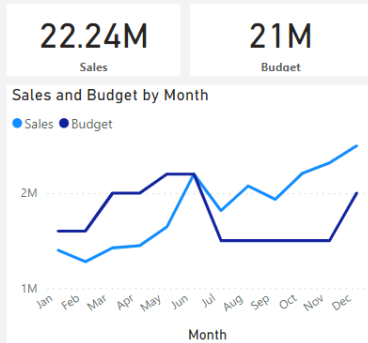
Month
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Customer City
All

Sub Category
All

Category
All

Product Name
All



Product Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bikes	13,25,275	12,10,791	13,41,256	13,69,240	15,59,031	21,06,386	17,28,746	19,85,411	18,47,522	21,08,602	22,21,454	23,95,484	2,11,99,198
Mountain-200 Black, 46	90.652	90.652	78.112	82.947	91.882	1.49.912	1.25.651	1.25.159	1.16.717	1.19.258	1.53.191	1.47.289	13,71,420
Mountain-200 Black, 42	65.899	74.587	78.603	79.669	1.12.045	1.43.765	96.554	1.26.880	1.31.716	1.26.880	1.56.305	1.70.239	13,63,142
Mountain-200 Silver, 38	88.988	58.331	78.465	89.817	90.811	1.10.531	1.09.205	1.18.734	1.16.165	1.44.005	1.40.111	1.94.299	13,39,463
Mountain-200 Silver, 46	47.228	52.945	68.108	80.785	88.491	1.09.371	1.26.688	1.41.188	1.28.594	1.32.488	1.67.205	1.58.008	13,01,100
Mountain-200 Black, 38	74.259	46.719	76.554	67.948	70.407	1.26.880	1.18.684	1.46.060	1.08.274	1.33.519	1.70.567	1.50.896	12,90,768
Mountain-200 Silver, 42	71.754	53.443	93.131	83.105	78.714	1.23.374	96.528	1.16.662	99.345	1.29.091	1.43.259	1.66.956	12,55,363
Road-250 Black, 52	78.624	61.258	69.374	67.192	69.635	97.734	51.659	45.987	41.101	63.702	43.806	39.966	7,30,038
Road-250 Red, 58	78.100	69.985	59.339	68.850	61.258	60.124	62.567	44.853	41.886	52.794	44.940	51.398	6,96,093
Road-250 Black, 48	98.519	87.088	56.023	56.546	37.785	78.624	36.476	65.011	59.600	44.853	28.273	42.410	6,91,206
Total	13,98,749	12,78,343	14,23,390	14,46,358	16,43,471	21,98,338	18,16,234	20,74,983	19,33,673	22,08,453	23,18,876	24,98,862	2,22,39,730