An aerial photograph of a winding asphalt road that curves through a dense, lush green forest. The road is light gray and contrasts with the dark green foliage. The forest appears to be a mix of deciduous and coniferous trees. The road starts from the bottom left and winds upwards and to the right, disappearing into the trees in the distance. The overall tone of the image is natural and serene.

# ADVENTURE WORKS

## SALES ANALYSIS

BY : PRATIBHA SRIDHARAN

# OBJECTIVE

- To handle the data set and prepare data model
- Perform EDA based on the problem statement
- Find out Key Performance Metrics
- Provide Insights
- Provide Suggestions and solutions

- Excel
- Tableau
- Power BI
- PPT

# TECH STACK USED



# ADVENTURE WORKS

Adventure Works Cycles, the company on which the Adventure Works sample databases are based, is a large, multinational manufacturing company. The company manufactures and sells metal and composite bicycles to North American, European and Asian commercial markets. While its base operation is in Bothell, Washington with 290 employees, several regional sales teams are located throughout their market base.

In 2000s, Adventure Works Cycles bought a small manufacturing plant in Mexico. Which manufactures several critical subcomponents for the Adventure Works Cycles product line. These subcomponents are shipped to the Bothell location for final product assembly. In 2001, this manufacturing plant became the sole manufacturer and distributor of the touring bicycle product group.





# ABOUT THE COMPANY

Adventure works is looking forward to expand its market share over the world .

Coming off a successful fiscal year, Adventure Works Cycles is looking to broaden its market share by targeting their sales to their best customers, extending their product availability through an external Web site, and reducing their cost of sales through lower production costs. Adventure works wants detailed analysis of sales , products and all the other metrics required to make decisions on future plans . The analysis to be conducted are as follows :

1. Detailed Sale Analysis
2. Market Analysis – Analysis of Products and their popularity across various regions
3. All other metrics and insights that can help in expansion of business
4. Providing insights and strategic solutions.

# APPROACH



## DATA HANDLING

Loading the data sets and handling data , outliers , imputations etc.



## DATA MODELLING

Creating a data model for further analysis



## DATA ANALYSIS

Performing EDA and presenting it through dashboards



## INSIGHTS

Deriving insights from the dashboard



## STRATEGIC SOLUTIONS

Providing solutions based on insights

# DATASET DESCRIPTION

The dataset provided offers comprehensive insights into the sales performance and operations of Adventure Works Cycles, a multinational manufacturing company specializing in metal and composite bicycles.

It includes detailed information on sales transactions, customer demographics, product categories, regional sales performance, and manufacturing operations.

The dataset contained 7 Files :

- Sales , Product Category, Product Subcategory ,
- Customer details, Territory details, and Date file

By analyzing this dataset, stakeholders can gain valuable insights into market trends, customer preferences, product performance, and operational efficiency, enabling informed decision-making and strategic planning to drive business growth and profitability.

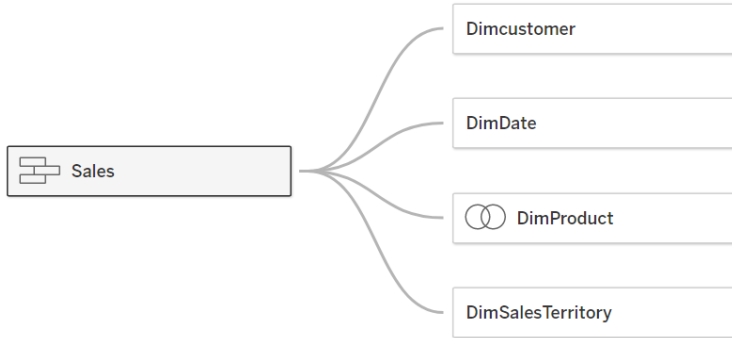
# DATA MODELLING

## Out of the 7 datasets :

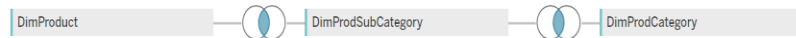
1. Union of both the sales files – new and old .
2. Date, territory and customer details were joined through respective keys
3. Inner join of Product, Product category and sub category was made then joined to main sales file
4. Master sales table was made

## Additional columns added :

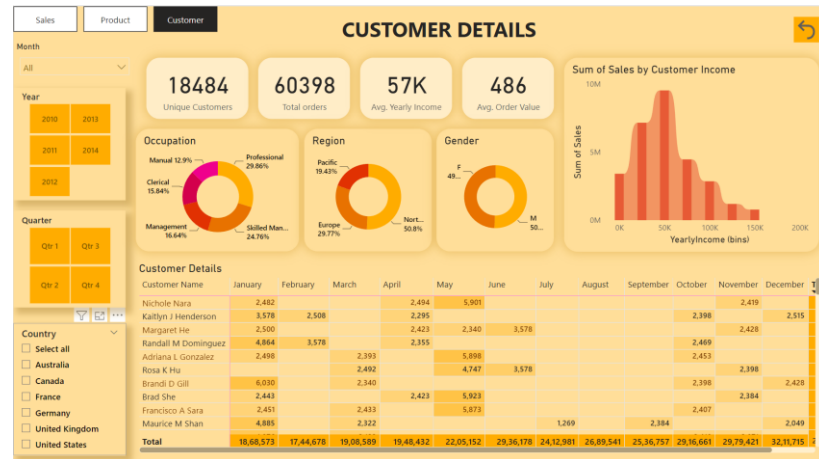
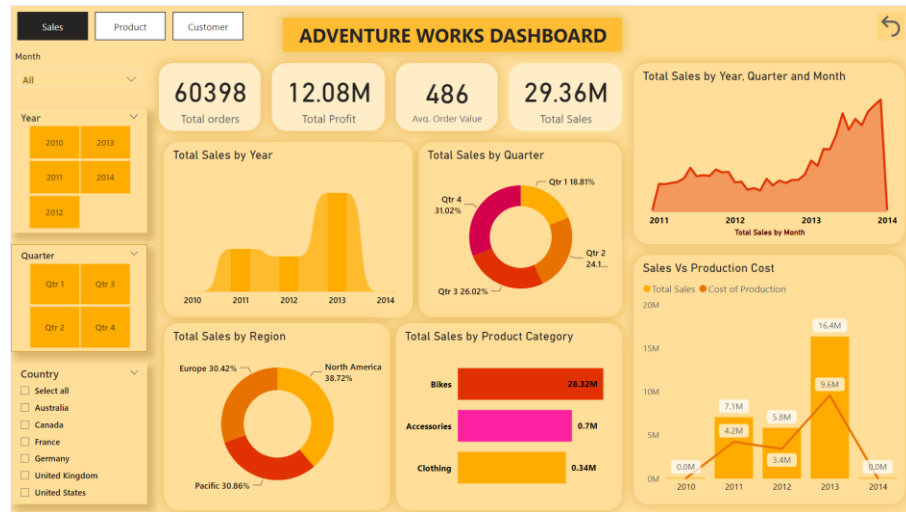
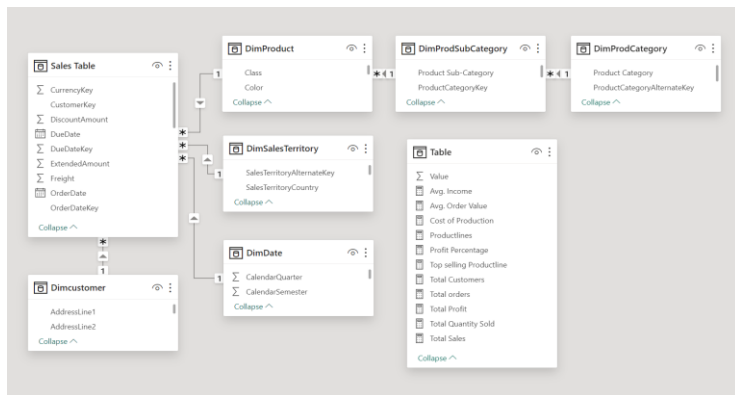
1. **Total Sales** = Unit Price \* Quantity sold
2. **Production Cost** = Unit price \* cost of product
3. **Profit** = Sales – Production cost
4. **Financial year, month, quarter**
5. **Calendar year, month, quarter from order date**



DimProduct is made of 3 tables. ①



# DASHBOARDS - DATA VISUALISATION





A photograph of two mountain bikers riding down a forest trail. The biker in the foreground is wearing a blue and yellow jersey and a yellow helmet, leaning forward in a racing position. The biker in the background is wearing an orange and blue jersey and a yellow helmet. The trail is covered in fallen leaves and surrounded by trees. A semi-transparent teal rectangle is overlaid on the image, containing the word "INSIGHTS" in large, bold, black capital letters.

# INSIGHTS

**\$29.36 M**

Total Sales

**60398**

Total Orders

**\$486**

Avg Order Value

**\$12.08 M**

Total Profit

**37**

Product lines

**18484**

Unique Customers

## KEY PERFORMANCE METRICS (KPIs)





# PRODUCT DETAILS

There are totally 4 categories of product

- Bikes
- Accessories
- Clothing
- Components

Out of these there are 37 sub categories.

- Out of all the products, bikes emerge as the top-selling product line, with a total of 28.32 million sales.

3 types are variants of bikes:

Road, Mountain, and Touring bikes.

Road bikes dominate the market as the highest-selling variant, accounting for 51% of total bike sales (14.52 m).

Mountain bikes follow with a 35% share (9 m), while Touring bikes make up the remaining 14%.

Jerseys are the most selling clothing product with about 51% of total clothing sales. Tubes and Tyers make up 35% of the total accessories sales.

Components are the least selling product line with very negligible numbers.

# CUSTOMER DETAILS

- There are 18484 unique customers associated with the company out of which 49% were Female 51% were male.
- About 9K customers were from the North American region , 6K from Europe and 4K from Pacific.
- Average Annual Income per person was about 57K per annum.
- Avg order value of a customer was 486 dollars.
- On average, customers typically place 3.26 orders, suggesting that they tend to make at least three purchases.

# SALES DETAILS

- Total Sales of Adventure works was 29.36 million
- North America has the most sales of about 38.72% of the total sales. This is followed by Europe with about 30% .This is because the number of customers are high in North America .
- Country with most sales is United States (9.39 million dollars) and least sales is Canada (1.97 million).
- UK has the highest market in Europe with sales of 3.4 million followed by Germany with 2.8 million and France 2.6 million .
- Australia has the highest market in the pacific with 9 million sales
- Quarter 4 and Quarter 3 gets more number of sales than the first two quarters.
- The total sales were highest in the year 2013 with 16 million . The profit margin was also highest in the year 2013 with about 7 million .

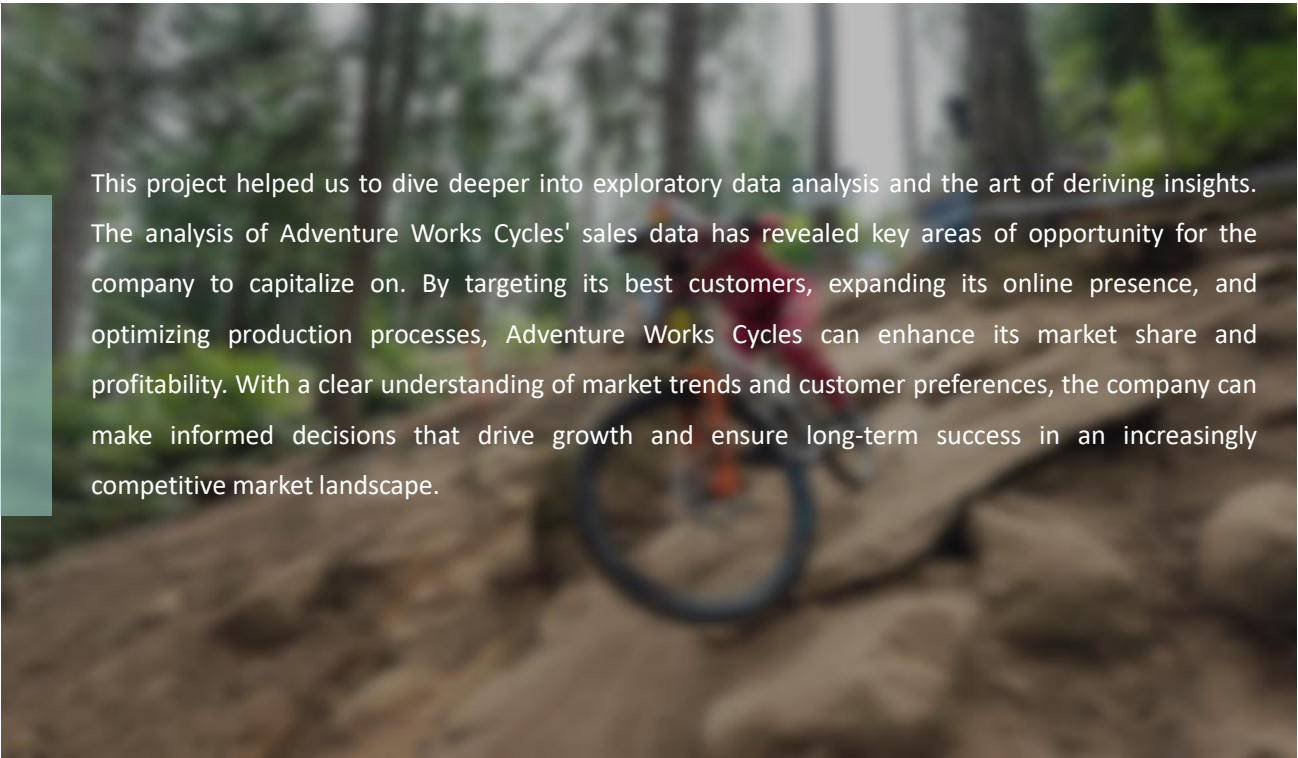




# STRATEGIC SOLUTIONS

- Road Bikes are the most selling product of Adventure works .
- Thus, measures can be taken to improve sales of Road bikes across all the regions.
- Mountain Bikes and Tour Bikes can also be promoted in order to increase overall sales. Some measures can be taken such as :
  - i. Introductory offers for tour and mountain bikes
  - ii. Exclusive discounts for Road Bikes .
  - iii. Revamping old products into new based on customer preference.
- Europe has a huge potential as each country in Europe has a total sales of 3 million . This number can definitely be increased through promotions and increasing dealerships with stores.
- Increasing dealerships or launching product outlets in emerging markets like Asia , India , East Asia etc. can increase our market presence.
- Promoting Assembly of products and dealerships instead of launching outlets would reduce production costs and increase profit margins .
- Accessories like Jersey's, water bottle's and caps has potential in capturing markets .
- Steps can be taken to launch new accessories and cutting out the old ones which are not selling well .

# CONCLUSION



This project helped us to dive deeper into exploratory data analysis and the art of deriving insights. The analysis of Adventure Works Cycles' sales data has revealed key areas of opportunity for the company to capitalize on. By targeting its best customers, expanding its online presence, and optimizing production processes, Adventure Works Cycles can enhance its market share and profitability. With a clear understanding of market trends and customer preferences, the company can make informed decisions that drive growth and ensure long-term success in an increasingly competitive market landscape.