

POWER BI VISUAL GUIDE: AMAZON SALES ANALYSIS POWER BI PROJECT



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Introduction

This guide outlines the essential steps, transformations, and objectives of the Power BI project focused on analyzing Amazon sales data. It highlights the key components and interactive features of the dashboard, with a particular emphasis on the visuals developed in the project.

Work Plan

- Introduction and Objectives
- Details of Tables and Columns
- Data Import and Transformation
- Functional Analysis of Dashboard Components
- Interactive Features
- Definition of Measures, Calculated Columns, Tables, and Colors
- Conclusion and Deployment on Power BI Services

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Introduction and Objectives

General Objectives

Sales Tracking

- Identify global sales trends (quantity, revenue) over a given period.
- Analyze performance by product, category, or region.

Order Analysis

- Monitor order statuses to reduce returns or cancellations.
- Optimize successful delivery rates.

Geographic Analysis

- Study performance by city and state to understand the most profitable areas.

- Adjust marketing or logistical strategies for underperforming regions.

Product Analysis

- Evaluate product popularity through unit sales and returns.
- Identify flagship products and optimization opportunities.

Logistical Improvement

- Identify shipping issues (lost, damaged products, etc.).
- Improve shipping processes to reduce delays and errors.

Detailed Objectives by Section

Section	Objectives
Order Status	Identify canceled, damaged, or returned orders to understand the underlying reasons.
Sales by City	Analyze performance in key cities (Bangalore, Hyderabad, Mumbai, etc.).
Sales by State	Evaluate sales trends by state to better target underperforming regions.
Sales by Date	Understand daily sales variations to forecast periods of high activity.
Product Analysis	Identify products driving the most sales or encountering frequent issues.
Tooltips (Product Details)	Explore detailed sales data (quantity, returns, reviews) for each specific product.

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Details of Tables and Columns

1. Table: Amazon Sale Report - YT.xlsx

Description: This table contains data on orders placed through Amazon. It includes information related to order status, shipping, and product characteristics.

Column	Description
Order ID	Unique identifier for the order.
Date	Date when the order was placed.
Status	Order status (e.g., Shipped, Cancelled, Delivered).
Fulfilment	Order processing method (Merchant or Amazon).
Sales Channel	Sales channel used to place the order (e.g., Amazon.in).
Ship-Service-Level	Shipping service level (e.g., Standard, Expedited).
Style	Style of the ordered product (e.g., Kurta, Set).
SKU	SKU (Stock Keeping Unit), a unique identifier for the product.
Category	Product category (e.g., clothing, accessories).
Size	Size of the product (e.g., S, M, XL).
ASIN	Unique identifier for the product on Amazon.
Courier Status	Shipping status (e.g., Shipped, Cancelled).
Qty	Quantity ordered.
Currency	Currency used for the order (e.g., INR).
Ship-City	City where the order is to be delivered.
Ship-State	State/region where the order is to be delivered.
Ship-Postal-Code	Postal code of the delivery address.
Ship-Country	Country where the order is to be delivered.
Fulfilled-By	Indicates the entity responsible for logistics (e.g., Amazon, Merchant).

Data Source: Excel File: Amazon Sale Report - YT.xlsx

2. Table: amazon-fashion - YT.csv

Description: This table contains details about the products sold, including their characteristics, popularity, and pricing.

Column	Description
amazon_prime_y_or_n	Indicates whether the product is eligible for Amazon Prime (Y = Yes, N = No).
asin	Unique identifier for the product on Amazon.
best_seller_tag_y_or_n	Indicates whether the product is marked as a "Best Seller" (Y = Yes, N = No).
brand	Brand of the product.
colour	Color of the product.
delivery_type	Delivery method (e.g., fulfilled_by_merchant).
discount_percentage	Discount percentage applied to the product.
product_url	URL of the product on the Amazon website.
rating	Average customer rating for the product.
sales_price	Selling price of the product.
Category	Category of the product (e.g., WomensKurtasKurtis).
seller_name	Name of the seller.
Saller ID	Unique identifier for the seller.

Data Source: CSV File: *amazon-fashion - YT.csv*

3. Relationship Between Tables

Table Source	Clé Commune	Table de Destination
Amazon Sale Report - YT.xlsx	ASIN	amazon-fashion - YT.csv

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Data Import and Transformation

Table: Amazon Sale Report - YT.xlsx

Transformation Steps:

1. Column Cleaning:

- **Action:** Removal of empty columns at the end.
- **Type Conversion:**
 - Discount_Percentage: Converted to a numeric value.
 - Stock_Left, Rating, and Sales_Price: Converted to numeric types.

2. Image Extraction:

- **Column:** large.

- **Action:** Extracted the first URL from multiple URLs separated by |.
- **Method Used:** .split(' | ') function to isolate the first URL.
- **Impact:** Simplifies the display and focuses on a primary image per product, reducing complexity.

Screenshot of Power BI desktop showing the 'amazon-fashion - YT' query editor. The ribbon at the top includes 'Accueil', 'Transformer', 'Ajouter une colonne', 'Affichage', 'Outils', and 'Aide'. The 'Transformer' tab is selected.

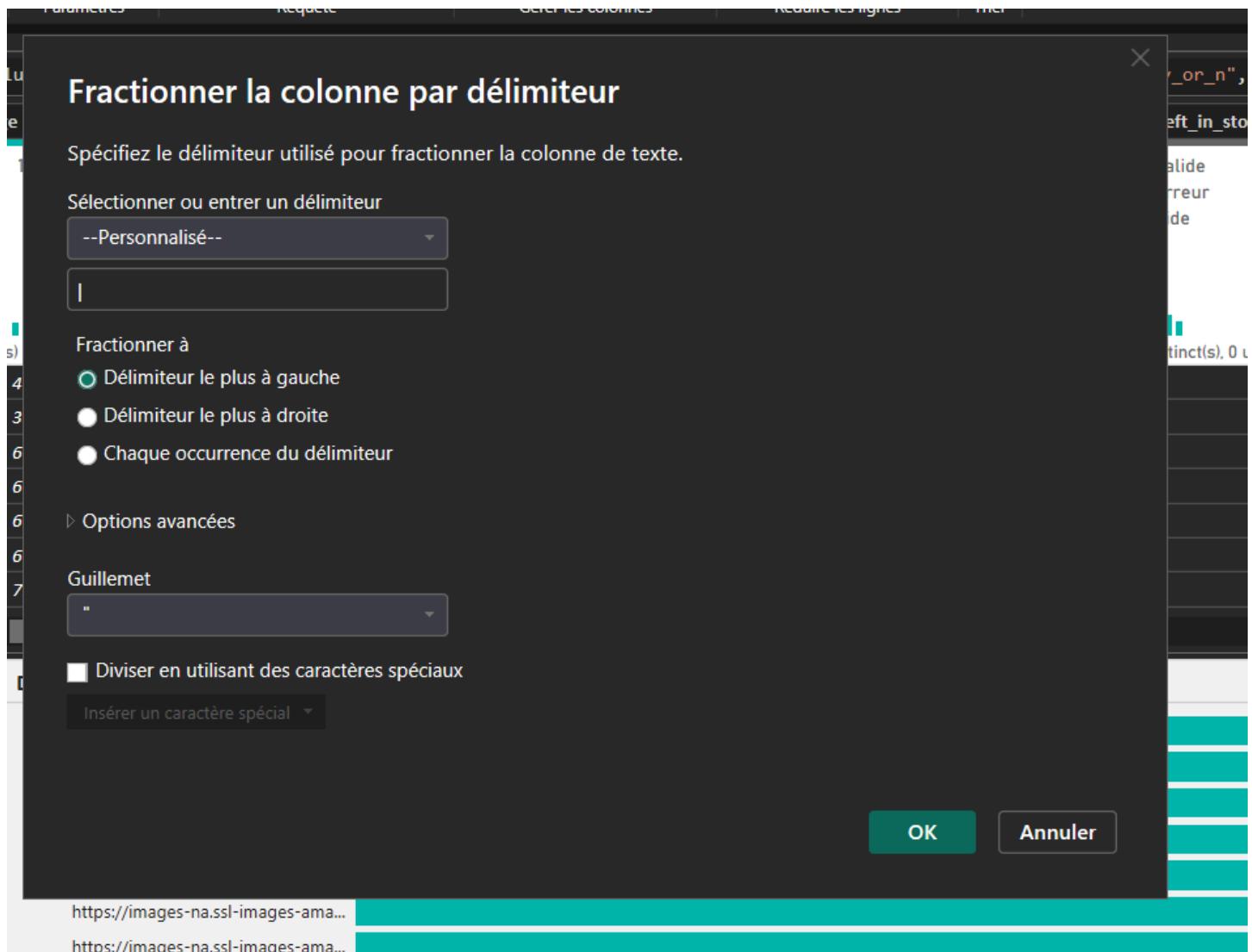
The main area displays two tables:

- Table 1:** Shows columns 'r_type' (with values 'Valide', 'Erreur', 'Vide'), '% discount_percentage' (with values 99%, 0%, <1%), and 'large' (with a histogram showing 956 distinct values). Below is a list of 8 rows with merchant IDs and their corresponding URLs.
- Table 2:** Shows column 'i23_left_in_stock' (with values 96%, 0%, 4%, 10%, 0%, 90%). Below is a list of 6 rows with URLs.

A context menu is open over the second table, listing options such as 'Copier', 'Supprimer', 'Supprimer les autres colonnes', 'Duplication de la colonne', 'Ajouter une colonne à partir d'exemples...', 'Supprimer les doublons', 'Supprimer les erreurs', 'Modifier le type', 'Transformer', 'Remplacer les valeurs...', 'Remplacer les erreurs...', 'Fractionner la colonne', 'Regrouper par...', 'Remplir', 'Dépivoter les colonnes', 'Dépivoter les autres colonnes', 'Dépivoter uniquement les colonnes sélectionnées', 'Renommer...', 'Déplacer', 'Drill-down', and 'Ajouter en tant que nouvelle requête'.

The 'PROPRIÉTÉS' pane on the right shows the query name 'amazon-fashion - YT' and the step 'Type modifié' under 'ÉTAPES APPLIQUÉES'.

Bottom status bar: '25 COLONNES, 999+ LIGNES' and 'Profilage de la colonne en fonction des 1000 premières lignes'.



The screenshot shows the Power BI Editor interface with a table named 'Table.TransformColumnTypes#“Fractionner la colonne par délimiteur”,{{"large.1", type text}, {"large.2", type text}}'. The table has two columns: 'large.1' and 'large.2'. A context menu is open over the 'large.2' column, with the 'Fractionner la colonne' option highlighted. The 'Fractionner la colonne' option is also listed in the global context menu on the right.

3. Column Renaming:

- **Column:** large.1 renamed to Picture for improved readability.

4. Segmentation of the Category Column:

- **Objective:** Simplify data readability and enhance visibility.
- **Action:** Used the "Split Column" feature in Power BI to separate grouped words (e.g., MensunderwearBriefs → Mens Underwear Briefs).
- **Method:** Split based on transitions from lowercase to uppercase letters.

5. Handling Missing Values:

- **Column:** Category.
- **Action:** Replaced NULL values with an empty value (Empty Value).

Screenshot of Power BI desktop interface showing the 'Remplacer les valeurs' (Replace values) dialog box.

The main Power BI window shows a table named 'amazon-fashion - YT' with columns: sales_price, Category.1, Category.2, Category.3, seller_name, Saller ID, and Seller ID. The 'Category.1' column has a context menu open, with the 'Remplacer les valeurs...' (Replace values...) option selected.

The 'Remplacer les valeurs' dialog box contains the following fields:

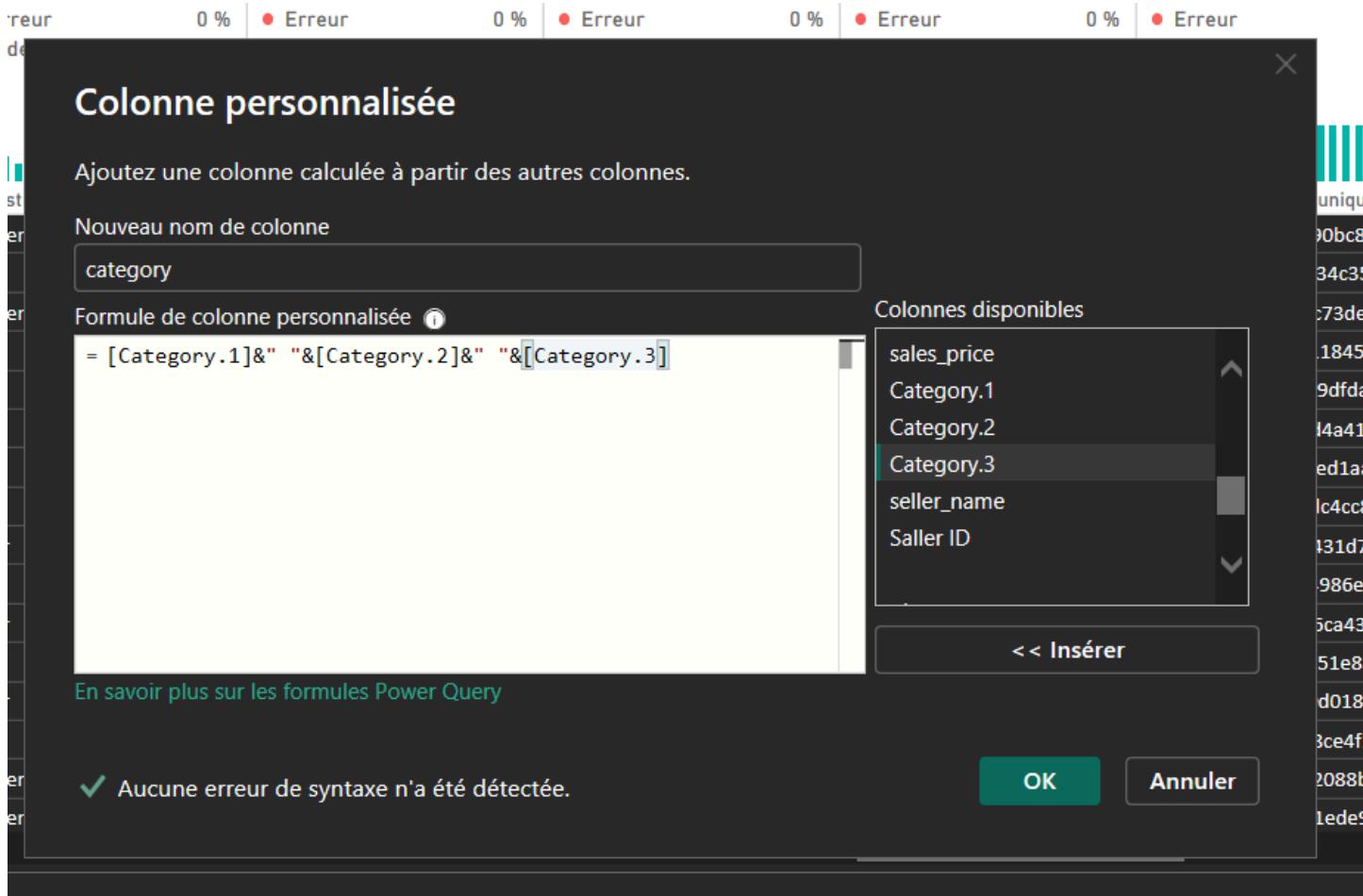
- Valeur à rechercher:** null
- Remplacer par:** (empty field)
- Options avancées:** (checkboxes for 'Tous les types de données' and 'Appliquer à tous les types de données')

Below the dialog box, a preview shows the replacement of 'null' values in the 'Category.1' column:

Original Value	Replaced Value
Womens	Womens
Mens	Mens
Other	Other

6. Creation of a Custom Column:

- **New Column:** Category.
- **Expression:** [Category.1] & " " & [Category.2] & " " & [Category.3].
- **Next Action:** Deleted intermediate columns Category.1, Category.2, and Category.3.



7. Data Type Validation:

- **Action:** Verified that column data types are correct.
- **Correction:** Adjusted incorrectly typed columns as needed.

Table : amazon-fashion - YT.csv

Transformation Steps:

1. **Using the First Line as Headers:**
 - Adjusted to ensure the first line becomes the column names.
2. **Removing Unnecessary Columns:**
 - Deleted the last empty column.
3. **Adding the Amount Column:**
 - **Method:** Merged queries in Power Query.
 - **Source:** Merged with the table Amazon Sale Report - YT.xlsx.
 - **Join Key:** ASIN.
 - **Added Column:** Sales_Price renamed to Amount.
4. **Handling Missing Values:**
 - Replaced NULL values in Amount with 0.

Fusionner

Sélectionnez une table et les colonnes correspondantes pour créer une table fusionnée.

Amazon



1

size	ASIN	Courier Status	Qty	currency	ship-city	ship-state	ship-postal-code	ship-cou
	B07STS2W9T		null	0	INR	MUMBAI	MAHARASHTRA	400081 IN
XL	B07N6TD2WL	Shipped		1	INR	BENGALURU	KARNATAKA	560085 IN
L	B07WJ6WPN1	Shipped		1	INR	NAVI MUMBAI	MAHARASHTRA	410210 IN
	B07PYSF4WZ		null	0	INR	PUDUCHERRY	PUDUCHERRY	605008 IN
...

amazon-fashion - YT



amazon_prime__y_or_n	asin	best_seller_tag__y_or_n	brand	colour	delivery_type	discou
N	B07STS2W9T	N	LA' Facon		fulfilled_by_merchant	
N	B07N6TD2WL	N			fulfilled_by_merchant	
Y	B07WJ6WPN1	N	LOVISTA		fulfilled_by_merchant	
N	B07PYSF4WZ	N			fulfilled_by_merchant	
...

Type de jointure

Externe gauche (toutes à partir de la première, corres...

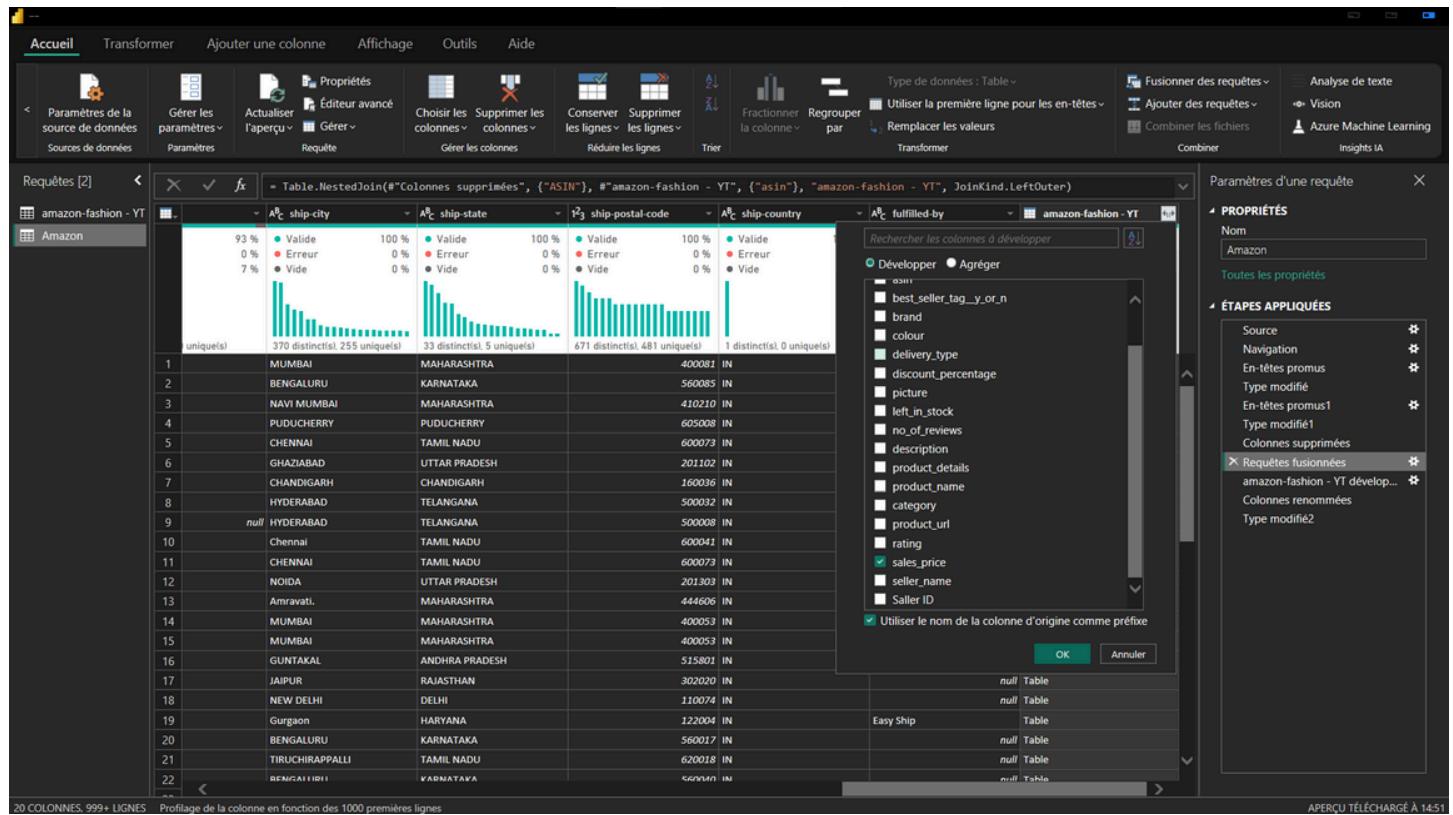
Utiliser la correspondance approximative pour effectuer la fusion

▷ Options de correspondance approximative

✓ La sélection correspond à 123510 des 150000 lignes de la première table.

OK

Annuler



5. Data Type Validation:

- **Action:** Verified and corrected incorrectly defined data types.

Objective of Transformations:

- Ensure data consistency and quality before using it in Power BI.
- Simplify data structure for improved readability and understanding.
- Guarantee data type accuracy for effective analysis.
- Facilitate the display of products and categories while enriching the dataset with additional columns like Amount.

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Functional Analysis of Dashboard Components

Page 1: Overview of Performance - "Overview"



Search by name or keyword...



Overview

Products

Product View

Baby Carriers
BSLINO Unisex Boat Sock...Bag Organizers
Zomoza Travel Mesh Underw...Boys Belts
Navaksha Adjustable Kid's...Boys Boxer Shorts
BODYCARE Boxer for ...Boys Clothing Sets
AJ Dezines kids waistc...Boys Dhotis Mundus
Amirtha Fashion Boys Traditi...Boys Dungarees
Firstclap Denim Solid dungr...Boys Ethnic Wear
AJ DEZINES Boy's Regu...**Status**

- Sélectionner tout
- Cancelled
- Pending
- Pending - Waiting for Pick Up
- Shipped
- Shipped - Damaged
- Shipped - Delivered to Buyer
- Shipped - Lost in Transit
- Shipped - Out for Delivery
- Shipped - Picked Up
- Shipped - Rejected by Buyer
- Shipped - Returned to Seller

120,3K

Total Sales

120,30K

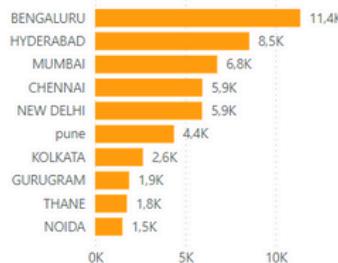
Sales

19K

Seller_Counts

Sales

Units

Sale By City**Sale By State****Sale By Date**

Components and Roles

Search Bar (at the top):

- **Component:** Text-based search bar.
- **Role:** Enables targeted searches by category. Users can enter a specific category to display only the related data.

Category List (on the left):

- **Component:** Vertical list of product categories, including:
 - Baby Carriers
 - Bag Organizers
 - Boys Belts
 - Boys Boxer Shorts
 - Boys Clothing Sets
 - And more.
- **Role:**
 - Facilitates navigation through specific product categories.
 - Allows isolation and analysis of sales performance for a particular category.

Order Status Filters (below the category list):

- **Component:** Checkbox list to filter data by order status.
- **Statuses Included:**
 - Cancelled
 - Pending (including "Waiting for Pick Up", "Lost in Transit").
 - Shipped (sub-divided into "Delivered", "Damaged", etc.).

- **Role:**
 - Allows examination of specific order segments based on their status.

Statistical Summary Cards (center top):

- **Components:**
 - **Total Sales:** Total sales amount (120.3K).
 - **Units:** Total number of units sold (120.30K).
 - **Seller Counts:** Total number of active sellers (19K).
- **Role:** Provides a summarized view of overall performance.

Sales by City Chart (on the right):

- **Component:** Horizontal bar chart showing sales by city (e.g., Bangalore, Hyderabad, Mumbai).
- **Role:**
 - Identifies the top-performing cities.
 - Directs efforts toward regions generating the highest revenue.

Sales by State Chart (below the city chart):

- **Component:** Horizontal bar chart showing sales by state (e.g., Maharashtra, Karnataka, Tamil Nadu).
- **Role:**
 - Displays state-level sales performance.
 - Helps identify high-potential regional markets.

Sales by Date Chart (at the bottom):

- **Component:** Line chart illustrating units sold over time.
- **Role:**
 - Tracks sales variations over time.
 - Identifies sales peaks or periods of low activity.

Navigation Bar (at the top):

- **Component:** Navigation menu with three tabs:
 - **Overview:** Global performance view.
 - **Products:** Detailed product view.
 - **Product View:** Individual product analysis.
- **Role:** Ensures smooth navigation between different dashboard pages.

Summary

The "Overview" page is designed to provide a comprehensive global view of performance, with particular attention to product categories, regions, and temporal trends. The combination of the category list, interactive charts, and statistical summaries allows users to quickly identify areas of high potential or those requiring improvements.

Page 2: Products

amazon

Search by name or keyword...

Overview Products Product View

This screenshot shows a grid of products on an Amazon search results page. The search term is likely 'boys' clothing'. The products include various items such as Baby Carriers, Bag Organizers, Boys Belts, Boys Boxer Shorts, Boys Clothing Sets, Boys Dhotis Mundus, Boys Dungarees, and Boys Ethnic Wear. The main focus is on traditional Indian attire like dhotis and kurta-pants. One prominent item is a red kurta-pant set with a gold chain necklace.

amazon

Search by name or keyword...

Overview Products Product View

This screenshot shows a detailed product listing for the 'FOCIL Orange Om Printed Dhoti Kurta Pant Set for Kids'. The listing includes a large image of the product, a summary, and a performance chart titled 'Units By Date'. The chart shows sales data for April, May, and June. The product has a sales amount of 2,0K, 4 units sold, 2,0K return/lost, 1 review, and a rating of 4. Other related products are shown in a grid below.

Components and Roles

Search Bar (at the top):

- **Component:** Search bar.
- **Role:** Enables users to search for specific products by their name or attributes.

Category List (on the left):

- **Component:** Vertical list of product categories, such as:
 - Baby Carriers
 - Bag Organizers
 - Boys Belts
 - And others.
- **Role:**
 - Allows quick navigation between categories.
 - Displays products associated with the selected category.

Product Grid (in the center):

- **Component:** Grid displaying product images and descriptions.
 - Each product is shown with its image and title.
 - Example: "FOCIL Orange Om Printed Dhoti Kurta Pant Set for Kids".
- **Role:**
 - Provides a visual representation of products by category.
 - Enables quick exploration and comparison of different products.

Navigation Bar (at the top):

- **Component:** Navigation tabs:
 - **Overview:** Global data view.
 - **Products:** Page focused on categories and products.
 - **Product View:** Detailed analysis of a specific product.
- **Role:** Ensures smooth navigation between different dashboard sections.

Tooltips (Product Details):

- **Component:** Contextual window displayed when a product is hovered over.
- **Included Information:**
 - **Product Name:** "FOCIL Orange Om Printed Dhoti Kurta Pant Set for Kids".
 - **Sales Amount:** Total sales amount (2.0K).
 - **Units:** Quantity sold (4).
 - **Return (Lost):** Returns or losses (1).
 - **Review:** Number of reviews (1).
 - **Rating:** Average rating (4).
 - **Graph:** Line chart illustrating sales by date (April, May, June).
- **Role:**
 - Provides additional details about product performance without leaving the page.
 - Helps quickly identify high-performing or problematic products.

Summary

This page highlights products categorized for intuitive navigation and utilizes interactive tooltips to enhance the available information for each product. It provides the user with a

comprehensive understanding of individual product performance while maintaining a simplified interface.

Page 3: Product View

The screenshot displays the Product View page. At the top, there is a search bar with the placeholder "Search by name or keyword...". Below the search bar are four buttons: "Overview", "Products", and "Product View" (which is highlighted with an orange border). To the left of the main content is a large image of a man wearing a white "2Go" t-shirt. The main title is "2Go Men's Solid Regular Fit T-Shirt". Below the title are several performance metrics: Sales Amount (12,3K), Units (40), Return(lost) (12,3K), Review (213), and Rating (3). A date range selector shows "31/03/2022" to "29/06/2022". A chart titled "Units By Date" shows the fluctuation of sales units over time, with peaks around May and June. Below the chart is a row of eight related products, each with an image and a link: 2Go Men's Polyester R, 2Go Men's Polyester T, 2Go Men's Printed Re, 2Go Men's Solid Regu (highlighted with an orange border), 2Go Men's Solid Slim, 2Go Men's Solid Vest, 2Go Men's Solid Vest, and 2Go Men's T-Shirt.

Components and Roles

Search Bar (at the top):

- **Component:** Interactive search bar.
- **Role:**
 - Enables users to search for a specific product by name or attributes.
 - Dynamically filters the product list based on search criteria.

Selected Product Details (center left):

- **Components:**
 - **Product Image:** Displays the main image of the selected product (e.g., "2Go Men's Solid Regular Fit T-Shirt").
 - **Product Name:** Displays the full name of the selected product.
- **Role:**
 - Provides a detailed view of the currently selected product for performance examination.

Product Performance Summary (center right):

- **Components:**
 - **Sales Amount:** Total sales amount for the product (12.3K).
 - **Units:** Total quantity sold (40).
 - **Return (Lost):** Number of returns or losses (12.3K).

- **Review:** Number of customer reviews received (213).
- **Rating:** Average rating given to the product (3).
- **Role:**
 - Presents key performance indicators (KPIs) for the selected product.
 - Allows a quick analysis of the product's strengths and weaknesses.

Sales by Date Chart (center bottom):

- **Component:** Line chart showing units sold over time.
- **Time Scale:** From March 2022 to June 2022.
- **Role:**
 - Tracks temporal sales trends for the selected product.
 - Identifies demand peaks or periods of low activity.

Time Filter (above the chart):

- **Component:** Interactive slider allowing selection of a date range.
- **Role:**
 - Refines the analysis based on a specific period.
 - Focuses on a defined time window to better understand sales patterns.

Product List (at the bottom):

- **Component:** Horizontal interactive strip displaying all available products.
- **Examples of Products:**
 - "Adventure Belt"
 - "\$15 Ties Men's Solid Necktie"
 - "@499 Women's Off Shoulder Dress".
- **Role:**
 - Displays all products regardless of the selected product.
 - Dynamic: The list interacts with the search bar and filters.
 - Facilitates navigation and exploration without leaving the page.

Navigation Bar (at the top):

- **Component:** Menu with three tabs:
 - **Overview:** Returns to the global view.
 - **Products:** Displays product analysis by categories.
 - **Product View:** Current page providing a detailed view of a selected product.
- **Role:** Ensures seamless navigation across dashboard sections.

Summary

The **Product View** page offers a detailed analysis of the performance of a selected product while enabling dynamic exploration of the entire product catalog through an interactive list. This hybrid approach allows users to easily navigate and compare products without leaving the detailed view.

5

Interactive Features

- **Dynamic Filters:**
 - Enable advanced customization of analyses.
- **Textual Search:**
 - Dynamic search bar to locate a specific product or category.
- **Intuitive Navigation:**
 - Smooth interaction between pages and components.

6

Definition of Measures, Calculated Columns, Tables, and Colors

Measures Used

Measure Name	Description	DAX Formula
ALL_Overall_Sale	Calculates total sales (without category filters applied).	CALCULATE([Filter_Sale],ALL('amazon-fashion - YT'[category]))
Filter_Sale	Returns either sales amount or units sold based on the selected option.	<pre>var _select = SELECTEDVALUE(Sales_Option[type]) RETURN IF(_select="1",[Sales_Amount], [Sales_Units])</pre>
Number_Of_Review	Calculates the total number of customer reviews.	<pre>var val=SUM('amazon-fashion - YT'[no_of_reviews]) RETURN IF(val=BLANK(),"0",val)</pre>
Rating	Calculates the average rating of products.	<pre>var val=AVERAGE('amazon-fashion - YT'[rating]) RETURN IF(val=BLANK(),"0",val)</pre>
Sales_Amount	Calculates the total sales amount.	<pre>var val = SUM(Amazon[Total_Amount]) RETURN IF(val=BLANK(),0,val)</pre>
Sales_Units	Calculates the total number of units sold.	<pre>SUM(Amazon[Qty])</pre>
SalesOn	Displays an icon to represent that the "Sales" option is selected.	<pre>var selected = SELECTEDVALUE(Sales_Option[Type]) var _url = "https://i.postimg.cc/RV3LcN3L/check- 2.png" RETURN IF(selected="1",_url)</pre>
SalesUnitsOn	Displays an icon to represent that the "Units" option is selected.	<pre>var selected = SELECTEDVALUE(Sales_Option[Type]) var _url = "https://i.postimg.cc/RV3LcN3L/check- 2.png" RETURN IF(selected="2",_url)</pre>
Seller_Counts	Counts the total number of sellers with delivered orders.	<pre>var val = CALCULATE(COUNT('amazon- fashion - YT'[Seller ID]),CONTAINSSTRING(Amazon[Status],"De livered")) RETURN IF(val=BLANK(),"0",val)</pre>

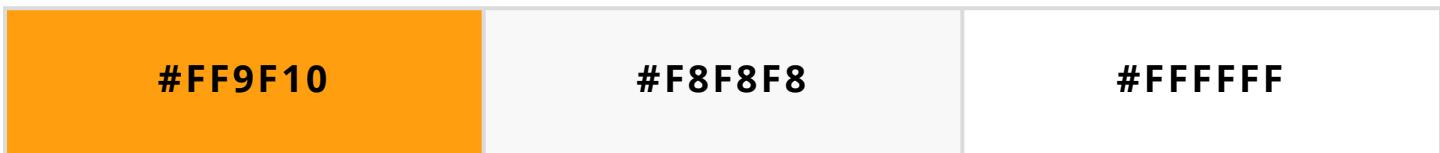
Calculated Columns

Column Name	Description	DAX Formula
Total_Amount	Calculates the total amount (quantity multiplied by unit price).	<pre>Amazon[Amount] * Amazon[Qty]</pre>

Created Table

Table Name	Description	DAX Formula
Sales_Option	Dynamic table to toggle between sales amount and units sold.	DATATABLE("Type",STRING,"Name",STRING,{ {"1","Sales"}, {"2","Units"} })

Color Palette Used



Objective of the Documentation

This document provides a comprehensive overview of the tables, columns, measures, and transformations used in the Power BI project. It serves as a guide for any future extensions or updates to the dashboard.

Conclusion and Deployment on Power BI Services

Conclusion

The Power BI dashboard developed provides a rich and interactive analysis, enabling an in-depth understanding of sales and product performance. Key highlights of this achievement include:

Comprehensive and Dynamic Analysis

- The calculated measures and columns allow data exploration from different perspectives, with interactive options such as Sales_Amount and Sales_Units.
- The integration of filters and search tools offers customization to meet users' specific needs.

Intuitive and Professional Visualization

- Charts, detailed tooltips, and harmonized color palettes make the data easy to understand and visually appealing.
- Segmenting the dashboard into sections ("Overview", "Products", "Product View") enhances organization and information clarity.

A Solid Foundation for Decision-Making

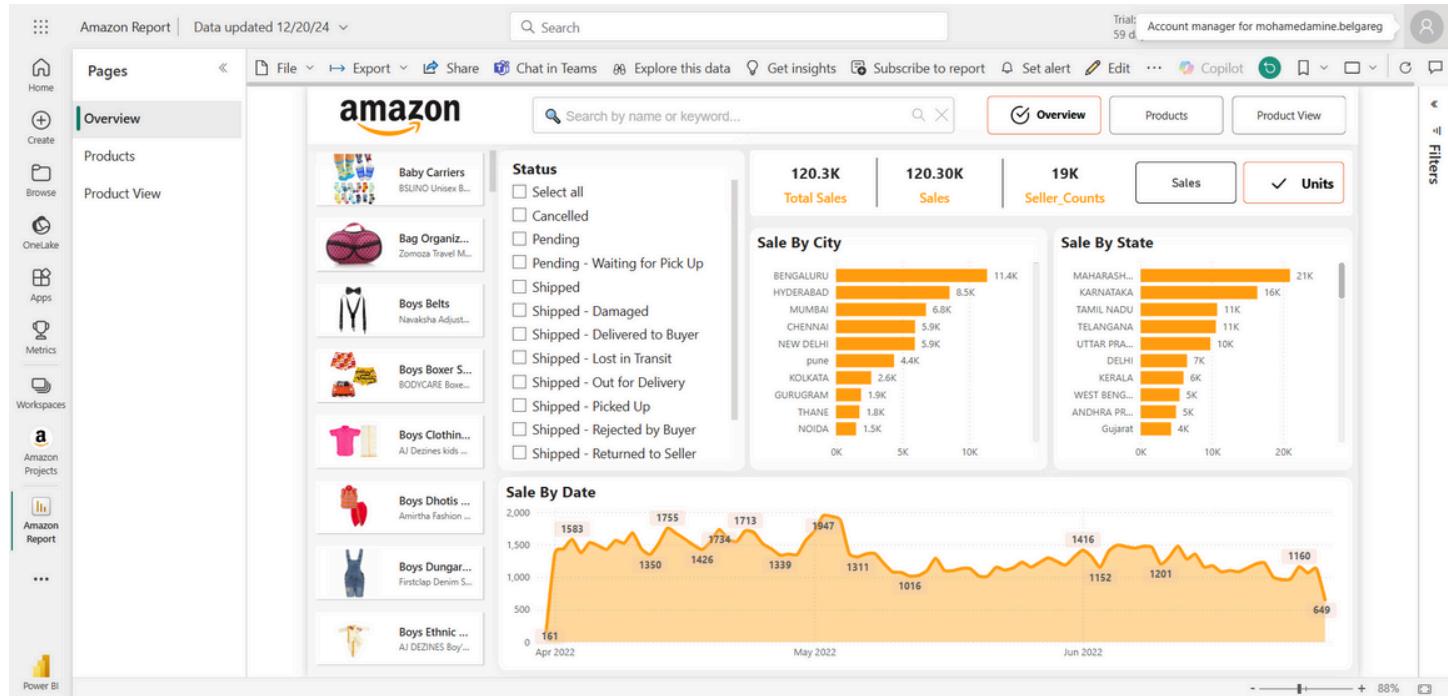
- Key Performance Indicators (KPIs) such as delivered orders, returns, and customer reviews provide an effective performance tracking system.

- The flexibility of the measures offers a personalized approach for various use cases, such as tracking sales or units sold.

Deployment on Power BI Services

To ensure optimal accessibility and usability, deployment on Power BI Services is a critical step. The steps to follow include:

https://app.powerbi.com/links/ZP7ZwUIRhv?ctid=dbd6664d-4eb9-46eb-99d8-5c43ba153c61&pbi_source=linkShare&bookmarkGuid=19e5c552-6998-4429-a65b-3c0cd4f87214



Contact Us

For questions, clarifications, or feedback, reach out to us:

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