# Interactive Online Sales Dashboard for Madhav Store

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## Project Overview

**Objective:** The owner of Madhav Store requested a dashboard to track and analyse their online sales across India. The goal is to provide actionable insights into sales performance, customer behaviour, and regional trends, enabling better decision-making and strategic planning.

**Audience:** This dashboard is designed for both technical and non-technical stakeholders, such as store managers, business analysts, and executives.

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## Features of the Dashboard

**Key Metrics (Cards):**

1. **Sum of Amount**: Displays the total sales revenue.
2. **Sum of Profit**: Highlights the total profit generated.
3. **Sum of Quantity**: Tracks the total quantity of products sold.
4. **Sum of AOV (Average Order Value)**: Represents the average value of each order (calculated using DAX).

**Visualizations:**

1. **Stacked Bar Chart:**
    - **Sum of Amount by State**: Visualizes total sales revenue across different states in India.
    - **Sum of Profit by Sub-Category**: Displays the profit generated by various product sub-categories.
2. **Donut Pie Charts:**
    - **Sum of Quantity by Category**: Breaks down the total quantity sold for each product category.
    - **Sum of Quantity by Payment Mode**: Shows the share of sales completed via different payment modes (e.g., credit card, cash on delivery).
3. **Stacked Column Chart:**
    - **Profit by Month**: Tracks profit trends over the months to identify seasonal patterns.
    - **Sum of Amount by Customer Name**: Highlights contributions from top customers.

**Interactive Elements:**

- **Filters and Slicers:**
    - Added slicers to explore data by state, product category, payment mode, and date range.

- Users can drill down into specific regions, months, or categories for a detailed view.

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## Technical Implementation

**Data Sources:**

- **Details.csv**: Contains transactional-level data with columns:
  - Order ID, Amount, Profit, Quantity, Category, Sub-Category, Payment Mode, and AOV (calculated as Amount/Quantity).
- **Orders.csv**: Includes order details such as:
  - Order ID, Customer Name, State, Date, and other relevant order metadata.

**Data Modeling:**

- Relationships were established between tables (e.g., Details and Orders) using Power BI's data modelling feature.
- Ensured referential integrity and used a star schema for efficient querying.

**DAX Calculations:**

- **AOV (Average Order Value):** Formula: AOV = Details[Amount] / Details[Quantity]
  - This calculation measures the average sales amount per item sold.
- Other Measures:
  - Total Profit: SUM(Details[Profit])
  - Total Amount: SUM(Details[Amount])
  - Total Quantity: SUM(Details[Quantity])

**Visual Customizations:**

- **Color Coding:**
  - Used distinct color schemes to represent metrics like profit, sales, and quantity for better readability.
- **Tooltips:**
  - Enhanced each visualization with tooltips, providing additional insights on hover.

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## Key Insights

1. **Top-Performing States:** Certain states contribute significantly to total sales, with regions like Maharashtra and Karnataka leading the chart.
2. **Profit Trends by Sub-Category:** Specific sub-categories yield higher profit margins, suggesting areas to focus on for business growth.
3. **Popular Payment Modes:** Digital payments dominate, but cash on delivery remains significant in certain regions.

4. **Customer Contributions:** A few loyal customers account for a substantial portion of sales, providing opportunities for targeted marketing.
5. **Seasonal Trends:** Monthly profit analysis reveals peak sales periods, assisting in inventory planning.

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## Challenges and Solutions

1. **Challenge:** Handling inconsistent data and null values in source files.
    - **Solution:** Performed data cleaning and transformation using Power Query to ensure consistency.
2. **Challenge:** Optimizing dashboard performance for large datasets.
    - **Solution:** Streamlined relationships and minimized the use of calculated columns by leveraging DAX measures.
3. **Challenge:** Creating intuitive and user-friendly visuals for non-technical stakeholders.
    - **Solution:** Simplified charts and added filters/slicers for easy navigation.

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## Outcomes and Benefits

- **Data-Driven Decision Making:**
    - The dashboard enables the store owner to identify high-performing products and regions, optimize inventory, and plan marketing strategies.
- **Improved Customer Insights:**
    - Understanding customer purchasing patterns allows for personalized promotions and engagement.
- **Actionable Insights:**
    - Visualizations simplify complex data, making it easier for stakeholders to interpret trends and take timely action.

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## Future Enhancements

1. Adding predictive analytics to forecast sales and profit trends.
2. Integrating real-time data for up-to-date analysis.
3. Expanding the dashboard to include offline sales data for a comprehensive view of the business.