

# Real-Time Sales Dashboard Using Google Looker Studio

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## Introduction

In today's fast-paced business environment, data-driven decision-making is not just a competitive advantage—it's a necessity. Sales data, when visualized effectively, empowers teams to understand performance trends, identify growth opportunities, and refine marketing strategies.

This project focuses on designing interactive, real-time sales dashboards using Google Looker Studio, a powerful cloud-based data visualization tool. Each dashboard is crafted to address a specific business use case related to sales performance, product demand, and promotional campaign impact. By leveraging Looker Studio's capabilities, I built visual systems that deliver clear, accessible, and actionable insights to stakeholders.

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## Background

Organizations generate vast amounts of transactional data daily. However, raw data without context or clarity is rarely useful. This project was designed to bridge the gap between data collection and business insights by building dashboards that are both informative and interactive.

Google Looker Studio was chosen for the following reasons:

- Real-time data connectivity to tools like Google Sheets, MySQL, BigQuery, and more.
- User-friendly visual editor for creating professional-grade reports.
- Support for calculated fields and filters, allowing dynamic data manipulation.
- Collaborative and shareable dashboards suited for team-based business use cases.

The source data included order details such as product category, order date, discounts applied, and quantities sold. This dataset allowed for meaningful business questions to be answered visually across time, product types, and campaign windows.

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## Learning Objectives

The goal of the project was to go beyond basic charting and create insight-driven dashboards. Specific objectives included:

1. Understand and apply business rules to sales data through filtering and transformation.
  2. Develop skills in Looker Studio, including calculated fields, aggregation, and interactive controls.
  3. Translate stakeholder requirements (like comparing weekends vs weekdays or analyzing discount strategies) into precise data visualizations.
  4. Present key performance indicators (KPIs) clearly using charts such as bar graphs, line charts, and scorecards.
  5. Practice best practices in dashboard design, including color-coding, layout organization, and visual hierarchy.
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## Activities and Tasks

To meet the learning objectives, I completed the following four tasks:

### ♦ Task 1: Weekend vs Weekday Sales Comparison (Q4 2022)

**Scenario:** The Campaign Team wanted to evaluate the success of weekend promotions from October to December 2022.

#### **Activities:**

- Filtered orders by month, day of the week, and date.
- Segregated sales into weekends (Saturday & Sunday) and weekdays (Monday–Friday).
- Calculated average daily sales (based on before\_discount) for each month and for the full quarter.
- Used bar charts and tables to visualize and compare performance.  
Insight: Enabled the team to assess whether weekend promotions led to higher average sales.

### ♦ Task 2: Top 5 Products in 'Mobiles & Tablets' (2022)

**Scenario:** The Marketing Team needed to identify high-performing products to promote during the Year-End Festival.

#### **Activities:**

- Filtered data for 2022, for only valid orders (is\_valid = 1) in the "Mobiles & Tablets" category.
- Aggregated quantity sold (qty\_ordered) and grouped by product name.
- Ranked products by total sales volume in descending order.
- Created a horizontal bar chart to display the top 5 products.  
Insight: Helped prioritize inventory and marketing focus for top-selling products.

### ♦ Task 3: Revenue vs Discount Impact by Category

**Scenario:** Management sought to analyze how discounts were affecting revenue across different product categories.

#### **Activities:**

- Calculated and compared SUM(before\_discount) vs SUM(after\_discount) for each category.
- Created a custom field to compute discount impact (difference between the two).
- Used a stacked bar chart to visualize all three values side by side for each category.  
Insight: Enabled data-backed evaluation of which product categories were most affected by discounting.

### ♦ Task 4: Sales Distribution by Discount Range

**Scenario:** The Marketing Team wanted to segment sales by how much discount was offered.

#### **Activities:**

- Created a calculated field to classify discounts into:
    - No Discount (0)
    - Low (< 10)
    - Medium (10–20)
    - High (> 20)
  - Aggregated sales (SUM(before\_discount)) per discount category.
  - Built a column chart to compare sales across ranges.  
Insight: Provided clarity on how discount intensity influenced total sales volumes.
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## **Skills and Competencies**

### **Technical Skills:**

- Google Looker Studio: dashboard creation, connectors, visual design, filter controls.
- Data Aggregation: using functions like SUM(), COUNT(), and custom calculations.
- Calculated Fields: built logic to classify date ranges and discount levels.
- Ranking & Sorting: for highlighting top-performing products.

### **Analytical Skills:**

- Applied segmentation (e.g., weekends vs weekdays) for comparative analysis.
- Identified high-performing product categories using sales trends.
- Analyzed revenue impact from discounts through difference calculations.

### **Design & Visualization:**

- Created clean, readable dashboards with consistent themes and labels.
  - Used color coding to enhance interpretability.
  - Implemented filter panels and date range selectors for dynamic analysis.
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## **Feedback and Evidence**

The success of the dashboards was measured by their ability to meet stakeholder needs. Specific feedback and supporting evidence include:

- Clarity of Insight: Dashboards answered the business questions with clear visual storytelling.
- Interactivity: Users could filter by date, category, and discount range, enabling custom exploration.
- Stakeholder Usability: The dashboards were easy to understand, even for non-technical team members.
- Real-time Connectivity: Dashboards updated automatically based on live data inputs (Google Sheets).

Visual samples were shared with peers and mentors, who highlighted the user-friendly layouts and data accuracy.

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## Challenges and Solutions

Challenge	Solution
Handling time-based comparisons across months	Used month_id, day_name, and year fields for granular filtering
Creating ranked lists (e.g., Top 5 products)	Used descending sort and limit controls in bar chart configuration
Designing discount-based segmentation	Built a calculated field to classify numeric ranges
Balancing dashboard readability and depth	Used tabs/sections and minimalistic chart styles for clarity
Validating data for accuracy (e.g., filter out test orders)	Applied a WHERE is_valid = 1 filter at the data source level

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## Outcomes and Impact

The project resulted in the creation of four dynamic and interactive dashboards, each focused on solving a real-world sales or marketing problem.

### Key Outcomes:

- Delivered real-time visibility into product performance and promotional effectiveness.
- Provided a reusable dashboard template for future sales campaigns.
- Demonstrated the value of data segmentation and business filtering.
- Built a strong case study to showcase skills in BI, analytics, and visualization.

### Impact on Stakeholders:

- Empowered marketing teams to optimize promotions based on time-based insights.

- Enabled product teams to focus on best-selling SKUs.
  - Helped leadership understand revenue leakage from discounting strategies.
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## **Conclusion**

This project was a hands-on application of business intelligence and real-time data storytelling using Google Looker Studio. From understanding business requirements to designing intuitive visual dashboards, it sharpened my skills in analytics, logic, and presentation.

The experience not only strengthened my technical proficiency in tools like Looker Studio, but also deepened my appreciation for clear, actionable visual communication. Each dashboard was a step forward in mastering the art of converting raw data into strategic insights.

Looking ahead, I plan to apply this learning to more complex domains like customer retention analysis, supply chain optimization, and omnichannel sales performance, making analytics an integral part of decision-making.