

Analytical Sql Business Cases

Use Case:

- Determine the most popular products in each category to ensure they are always in stock and prioritize their promotion

Recommendations:

1. Focus inventory management efforts on products with the highest reorder rates (`reordered`).
 2. Use the product popularity to develop targeted marketing campaigns for high-demand products in each department.
 3. Highlight these products in promotions or create premium shelf space
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Use Case:

- Understand how purchasing behavior changes over different times of the day, days of the week

Recommendations:

1. Schedule promotions during peak buying times to maximize impact.
 2. Use data to optimize staff scheduling and ensure high-traffic periods are well-covered.
 3. Offer loyalty rewards to re-engage customers with longer gaps in purchase
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Use Case:

- Identify product combinations that are frequently bought together to optimize store layouts and develop bundled promotions.

Recommendations:

1. Place frequently paired items closer together in-store or highlight them in online recommendations.

2. Create bundle deals for the most common combinations to increase basket size.
 3. Analyze categories with high cross-selling potential
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Use Case:

- Segment customers based on their purchase habits to provide tailored marketing campaigns.

Recommendations:

1. Identify high-frequency shoppers and offer exclusive loyalty rewards.
 2. Develop time-sensitive offers for customers based on their typical shopping times (e.g., early morning, late night).
 3. Target low-frequency customers with promotions encouraging them to return.
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Use Case:

- Analyze sales performance across aisles and departments to identify trends and underperforming categories.

Recommendations:

1. Invest more in marketing for aisles and departments with high sales volume.
 2. Identify underperforming aisles and evaluate product offerings or placement strategies.
 3. Reallocate shelf space based on sales performance to improve efficiency.
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Customer Behavior Analysis

What are the most valuable customers and how can we engage them?

- Identify top customers by analyzing `order_number` and `days_since_prior_order` for frequent shoppers.
 - Spot at-risk customers by detecting increased gaps in `days_since_prior_order` and re-engage them with personalized offers or loyalty points.
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Product Demand Analysis

Which products have the highest and lowest demand?

- Analyze products with high reorder rates (`reordered`) to find consistent bestsellers in each `department_id` .
- Track products with low reorder rates or `add_to_cart_order` rank to identify slow-moving inventory.

What are the most seasonal products, and when do they sell?

- Use `order_dow` and `order_hour_of_day` to identify products with spikes during specific seasons or times, such as summer snacks or holiday items.
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Promotions and Discounts

Which types of promotions result in the highest sales?

- Correlate spikes in `order_number` during promotional periods to measure success and focus efforts on similar campaigns.
- Highlight products in high-demand categories (`department_id`) that respond best to discounts.

How can we increase customer participation in promotions?

- Target price-sensitive shoppers by analyzing discount-driven purchase habits through reorder and cart ranking data.
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Basket Analysis

What are the most frequently bought product pairs?

- Identify pairs of products that appear most often in orders (`add_to_cart_order`), excluding minor variations (e.g., different milk brands).
- Highlight cross-department relationships to group complementary items, like chips and soda or bread and deli meats.

How can we increase the size of the average shopping basket?

- Use insights from frequently bought-together products to create combo promotions or bundles.

- Target customers with personalized recommendations at checkout for products they might have forgotten.
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Customer Segmentation

How do purchasing patterns change based on time or demographics?

- Segment customers by shopping time (`order_hour_of_day`) and day (`order_dow`) to create time-specific marketing campaigns.
- Identify customers by spending behavior (e.g., budget vs. premium products) to target them with relevant deals.