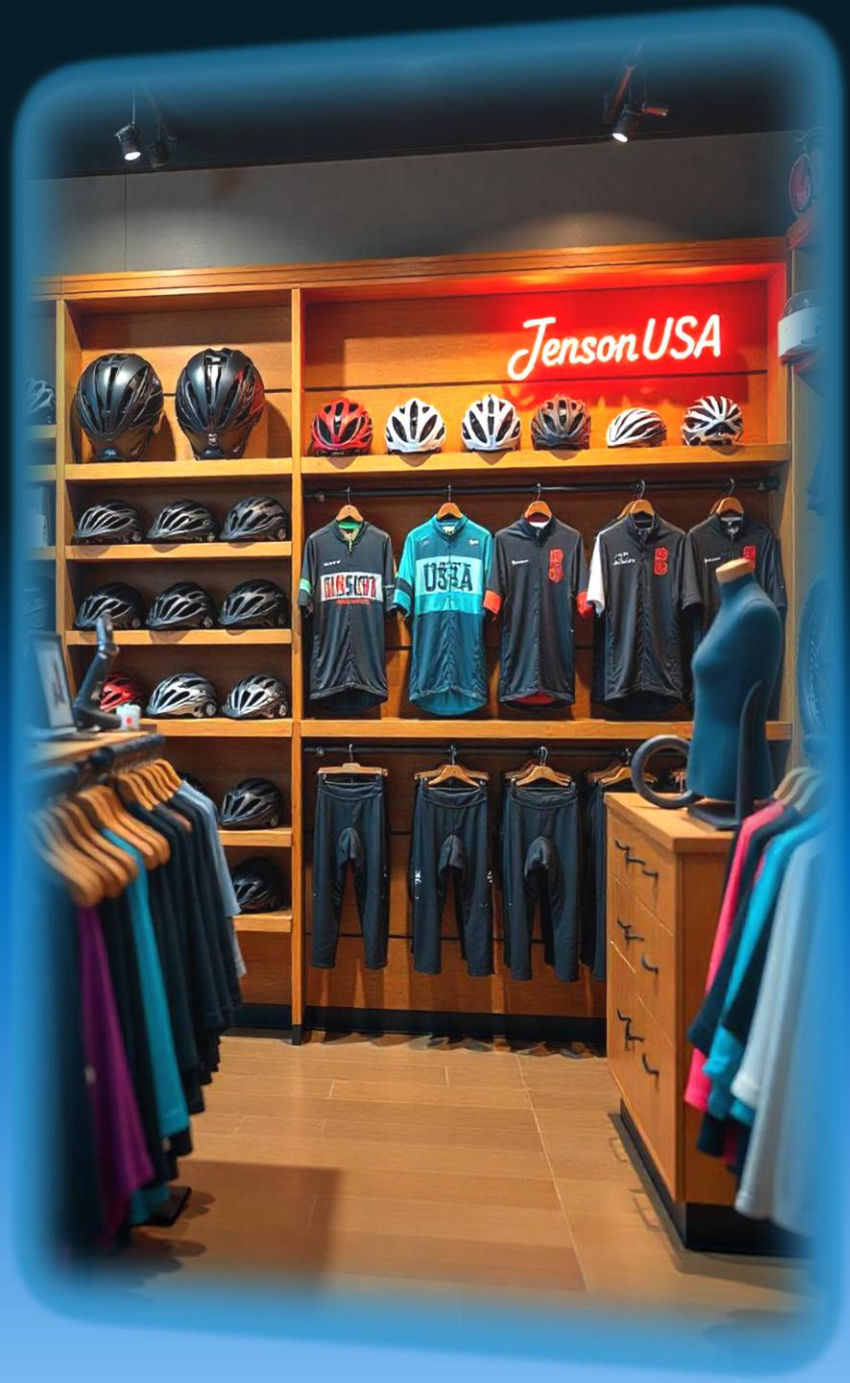
Jenson USA

SQL-based Data Analysis

By Kanishka Maheshwari

Understanding Jenson USA

- **Established:** 1994.
- **Headquarters:** Riverside, California.
- **Specialization:** Online and brick-and-mortar retailer of bicycles, components, apparel, and accessories.
- **Product Range:** Over 30,000 products catering to road, mountain, triathlon, BMX, gravel, and commuter cycling.
- **Core Values:** Exceptional service, a strong cycling community, and data-driven decision-making for better sales, inventory, and customer experience.



Objective

To uncover actionable business insights from Jenson USA's retail data using SQL.

The KEY OBJECTIVES of this analysis are to:

- Evaluate store-level performance through sales data.
- Identify best-selling and underperforming products.
- Analyze customer spending behavior and loyalty.
- Assess staff productivity and highlight top/low performers.
- Support inventory planning and pricing strategies.

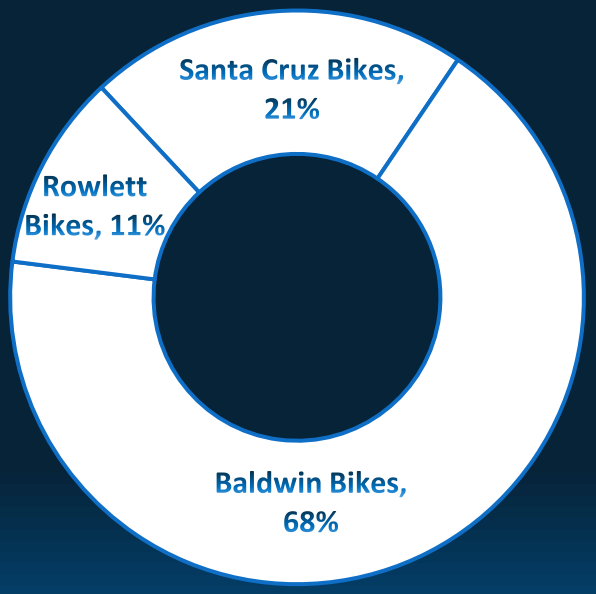
Analysis Coverage – 12 Problem Statements

- Total Products Sold Per Store.
- Cumulative Product Sales Over Time.
- Best-Selling Product in Each Category.
- Highest Spending Customer On Orders.
- Highest-Priced Product Per Category.
- Total Orders Per Customer Per Store.
- Staff with No Sales.
- Top 3 Best-Selling Products in Terms of Quantity.
- Finding the Median Price.
- Unordered Products.
- Staff Members with Above-Average Sales.
- Customers Who Ordered from Every Category.

Total Products Sold Per Store

```sql
SELECT
    stores.store_name,
    SUM(order_items.quantity) AS Number_of_products_sold
FROM
    orders
        JOIN
    stores ON orders.store_id = stores.store_id
        JOIN
    order_items ON order_items.order_id = orders.order_id
GROUP BY stores.store_name;
```

store_name	Number_of_products_sold
Santa Cruz Bikes	1516
Baldwin Bikes	4779
Rowlett Bikes	783



Insights:

- Useful for store-level performance comparison.
- Stores with low product sales might need better marketing or restocking strategies.

Cumulative Product Sales Over Time

```sql
SELECT
    products.product_name,
    orders.order_date,
    order_items.quantity,
    SUM(order_items.quantity) OVER (
        PARTITION BY products.product_name
        ORDER BY orders.order_date
    ) AS Running_sum_of_quantities
FROM
    products
JOIN
    order_items
    ON products.product_id = order_items.product_id
JOIN
    orders
    ON orders.order_id = order_items.order_id;
```

product_name	order_date	quantity	Running_sum_of_quantities
Electra Amsterdam Fashion 3i Ladies' - 2017/2018	2018-01-01	1	1
Electra Amsterdam Fashion 3i Ladies' - 2017/2018	2018-01-21	2	3
Electra Amsterdam Fashion 3i Ladies' - 2017/2018	2018-04-30	2	5
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-01-29	2	2
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-02-28	1	3
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-03-03	1	4
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-03-09	2	6
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-04-06	1	7
Electra Amsterdam Fashion 7i Ladies' - 2017	2017-04-15	2	9

Insights:

- Helps in forecasting demand and optimizing inventory management.
- Products with rising sales get priority for promotions.

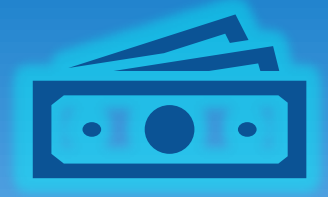
Best-Selling Product in Each Category

```sql
WITH k AS (
    SELECT categories.category_name, products.product_id, products.product_name,
           SUM(order_items.quantity * order_items.list_price) AS total_sales
    FROM products
    JOIN categories ON products.category_id = categories.category_id
    JOIN order_items ON order_items.product_id = products.product_id
    GROUP BY 1, 2, 3
),
P AS (
    SELECT *, DENSE_RANK() OVER(PARTITION BY category_name ORDER BY total_sales DESC)
    AS RNK FROM k
)
SELECT * FROM P WHERE RNK = 1;
```

category_name	product_id	product_name	total_sales	RNK
Children Bicycles	23	Electra Girl's Hawaii 1 (20-inch) - 2015/2016	4619846.00	1
Comfort Bicycles	26	Electra Townie Original 7D EQ - 2016	8039866.00	1
Cruisers Bicycles	16	Electra Townie Original 7D EQ - 2016	9359844.00	1
Cyclocross Bicycles	11	Surly Straggler 650b - 2016	25382949.00	1
Electric Bikes	9	Trek Conduit+ - 2016	43499855.00	1
Mountain Bikes	7	Trek Slash 8 275 - 2016	61599846.00	1
Road Bikes	56	Trek Domane SLR 6 Disc - 2017	23649957.00	1

Insights:

- Identifies the most popular products per category.
- Businesses can bundle best-sellers with other products to boost revenue.



Highest Spending Customer On Orders

```sql
SELECT
    customers.customer_id,
    CONCAT(customers.first_name,
            ' ',
            customers.last_name) Full_Name,
    SUM(order_items.quantity * order_items.list_price) Money_spent
FROM
    orders
        JOIN
    customers ON orders.customer_id = customers.customer_id
        JOIN
    order_items ON order_items.order_id = orders.order_id
GROUP BY 1 , 2
ORDER BY Money_spent DESC
LIMIT 1;
```

	customer_id	Full_Name	Money_spent
▶	10	Pamelia Newman	3780184.00

Insights:

- Helps in customer loyalty analysis.
- Pamelia Newman can be targeted for VIP programs or exclusive discounts.
- Encourages personalized marketing for high-value customers.

Highest-Priced Product Per Category

```sql
WITH k AS (
    SELECT categories.category_name, products.product_id, products.product_name,
           products.list_price,
           DENSE_RANK() OVER(PARTITION BY categories.category_name ORDER BY products.list_price DESC)
           AS RNK FROM categories
    JOIN products ON categories.category_id = products.category_id
)
SELECT *
FROM k
WHERE RNK = 1;
```

category_name	product_id	product_name	list_price	RNK
Children Bicycles	98	Electra Straight 8 3i (20-inch) - Boy's - 2017	48999.00	1
Children Bicycles	100	Electra Townie 3i EQ (20-inch) - Boys' - 2017	48999.00	1
Children Bicycles	280	Trek Superfly 24 - 2017/2018	48999.00	1
Comfort Bicycles	303	Electra Townie Go! 8i - 2017/2018	259999.00	1
Cruisers Bicycles	251	Electra Townie Commute Go! - 2018	299999.00	1
Cruisers Bicycles	252	Electra Townie Commute Go! Ladies' - 2018	299999.00	1
Cyclocross Bicycles	207	Trek Boone 7 Disc - 2018	399999.00	1

Insights:

- Aids high-end targeting and pricing strategy.
- High-priced items need strong marketing.

Total Orders Per Customer Per Store

```sql
SELECT
    customers.customer_id,
    CONCAT(customers.first_name,
            ' ',
            customers.last_name) AS Full_Name,
    stores.store_id,
    stores.store_name,
    COUNT(orders.order_id) AS Total_Number_of_Orders
FROM
    customers
        LEFT JOIN
    orders ON customers.customer_id = orders.customer_id
        JOIN
    stores ON stores.store_id = orders.store_id
GROUP BY 1 , 2 , 3 , 4;
```

customer_id	Full_Name	store_id	store_name	Total_Number_of_Orders
259	Johnathan Velazquez	1	Santa Cruz Bikes	1
175	Nova Hess	1	Santa Cruz Bikes	2
60	Neil Mccall	1	Santa Cruz Bikes	2
91	Marvin Mullins	1	Santa Cruz Bikes	2
258	Maribel William	1	Santa Cruz Bikes	1
552	Lea Key	1	Santa Cruz Bikes	1
1175	Sindy Anderson	1	Santa Cruz Bikes	1

Insights:

- Identifies repeat customers per store.
- Low retention stores need customer retention strategies.

Staff with No Sales

```
SELECT
    staff_id, CONCAT(first_Name, ' ', last_name) AS Full_Name
FROM
    Staffs
WHERE
    staff_id NOT IN (SELECT DISTINCT
            staff_id
        FROM
            orders);
```

staff_id	Full_Name
1	Fabiola Jackson
4	Virgie Wiggins
5	Jannette David
10	Bernardine Houston

Insights:

- Helps management track inactive sales employees.
- Non-performing staff may need additional training or motivation.
- Aids HR in performance evaluations.

Top 3 Best-Selling Products in Terms of Quantity

```
SELECT
    products.product_id,
    products.product_name,
    SUM(order_items.quantity) AS Quantities_Sold
FROM
    products
        JOIN
    order_items ON products.product_id = order_items.product_id
GROUP BY 1 , 2
ORDER BY Quantities_Sold DESC
LIMIT 3;
```

product_id	product_name	Quantities_Sold
6	Surly Ice Cream Truck Frameset - 2016	167
13	Electra Cruiser 1 (24-Inch) - 2016	157
16	Electra Townie Original 7D EQ - 2016	156

Insights:

- Useful for stock planning & replenishment.
- Helps determine which products should be advertised more.
- Reveals customer preferences.

Finding the Median Price

```sql
WITH k AS (
    SELECT list_price, ROW_NUMBER() OVER(ORDER BY list_price) AS rnk,
    COUNT(*) OVER() AS n FROM products
)

SELECT
CASE
    WHEN n % 2 = 0 THEN (SELECT AVG(list_price) FROM k WHERE rnk IN (n/2, (n/2) + 1))
    ELSE (SELECT list_price FROM k WHERE rnk = (n + 1) / 2)
END AS MEDIAN
FROM k
LIMIT 1;
```

MEDIAN
74999.00

Insights:

- Gives a better sense of pricing distribution.
- Useful for benchmarking product prices.
- Helps firms set competitive pricing strategies.

Unordered Products

```sql
SELECT
    products.product_id, products.product_name
FROM
    products
WHERE
    NOT EXISTS( SELECT
            *
        FROM
            order_items
        WHERE
            order_items.product_id = products.product_id);
```

product_id	product_name
1	Trek 820 - 2016
121	Surly Krampus Frameset - 2018
125	Trek Kids' Dual Sport - 2018
154	Trek Domane SLR 6 Disc Women's - 2018
195	Electra Townie Go! 8i Ladies' - 2018
267	Trek Precaliber 12 Girl's - 2018
284	Electra Savannah 1 (20-inch) - Girl's - 2018

Insights:

- Identifies obsolete products.
- Aids in stock clearance.
- Use discounts or bundles to boost sales.

Staff Members with Above-Average Sales

```sql
WITH k AS (
    SELECT
        staffs.staff_id,
        CONCAT(staffs.first_name, " ", staffs.last_name) AS Full_Name,
        COALESCE(SUM(order_items.quantity * order_items.list_price), 0) AS SALES
    FROM staffs LEFT JOIN orders
    ON orders.staff_id = staffs.staff_id
    LEFT JOIN order_items
    ON order_items.order_id = orders.order_id
    GROUP BY 1, 2
)
SELECT * FROM k WHERE SALES > (SELECT AVG(SALES) FROM k);
```

staff_id	Full_Name	SALES
3	Genna Serrano	95272226.00
6	Marcelene Boyer	293888873.00
7	Venita Daniel	288735348.00

Insights:

- Recognize & reward top performers.
- Provide mentorship & leadership opportunities.
- Set benchmarks for improving overall staff performance.

Customers Who Ordered from Every Category

```sql
WITH k AS (
    SELECT customers.customer_id, CONCAT(customers.first_name, " ", customers.last_name)
    AS Full_Name, COUNT(DISTINCT products.category_id)
    AS Category_count
    FROM customers JOIN orders
    ON customers.customer_id = orders.customer_id
    JOIN order_items
    ON order_items.order_id = orders.order_id
    JOIN products
    ON products.product_id = order_items.product_id
    GROUP BY 1, 2
)
SELECT * FROM k
HAVING Category_count = (SELECT COUNT(*) FROM categories);
```

customer_id	Full_Name	Category_count
9	Genoveva Baldwin	7

Insights:

- Identifies loyal & high-value customers.
- Encourages diverse purchases via recommendations, bundles, and loyalty rewards.

LinkedIn: Stay updated and network with me!

GitHub: Explore my projects & collaborations!

Your feedback is valuable—feel free to like, comment, or share my work!