# JENSON USA DATA ANALYSIS USING SQL

## PRESENTED BY

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# OBJECTIVE

The objective of this project is to use SQL queries to gain insights into key aspects of Jensen's operations, including customer behavior, staff performance, inventory management, and store operations. By analyzing purchasing patterns, identifying high-value customers, and assessing seasonal trends, we aim to improve marketing strategies. For staff performance, we will evaluate sales metrics and customer satisfaction to highlight top performers and areas for development. In inventory management, the goal is to optimize stock levels and reduce inefficiencies by tracking turnover rates and supplier performance. Finally, by analyzing store operations, we will optimize staffing and store hours to boost efficiency and sales across locations.

# Project Questions

❑ Find the total number of products sold by each store along with the store name.

❑ Calculate the cumulative sum of quantities sold for each product over time.

❑ Find the product with the highest total sales (quantity * price) for each category.

❑ Find the customer who spent the most money on orders.

❑ Find the highest-priced product for each category name.

❑ Find the total number of orders placed by each customer per store.

❑ Find the names of staff members who have not made any sales.

❑ Find the top 3 most sold products in terms of quantity.

❑ Find the median value of the price list.

❑ List all products that have never been ordered.(use Exists)

❑ List the names of staff members who have made more sales than the average number of sales by all staff members.

❑ Identify the customers who have ordered all types of products (i.e., from every category).

# Q Find the total number of products sold by each store along with the store name?

```sql
1    # Find the total number of products sold by each store along with the store name.
2
3    # Important Tables
4    # stores - name
5    # orders - order_id
6    # order_items - quantity
7
8    Select stores.store_name,
9    sum(order_items.quantity) products_sold
10   from stores join orders
11   on stores.store_id = orders.store_id
12   join order_items
13   on order_items.order_id = orders.order_id
14   group by stores.store_name;
15
```

Limit to 1000 rows

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| store_name | products_sold |
| --- | --- |
| Santa Cruz Bikes | 1516 |
| Baldwin Bikes | 4779 |
| Rowlett Bikes | 783 |

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

# Q Calculate the cumulative sum of quantities sold for each product over time?

```sql
1    # Calculate the cumulative sum of quantities sold for each product over time.
2
3    # Imporatnt Tables
4    # Products - product name
5    # Orders - order date
6    # Order Items - Quantity
7
8 •  Select products.product_name,
9    orders.order_date,
10   order_items.quantity,
11   sum(order_items.quantity) over(partition by products.product_name order by orders.order_date) cumulative_sum
12   from products join order_items
13   on products.product_id = order_items.product_id
14   join orders
15   on orders.order_id = order_items.order_id;
```

| | product_name | order_date | quantity | cumulative_sum |
|---|---|---|---|---|
| ▶ | 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 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-04-16 | 1 | 10 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-06-27 | 2 | 14 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-06-27 | 2 | 14 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-07-15 | 2 | 16 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-07-19 | 2 | 18 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-08-18 | 1 | 19 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-08-21 | 2 | 21 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-09-14 | 2 | 23 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-10-04 | 2 | 27 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-10-04 | 2 | 27 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-10-31 | 2 | 29 |
| | Electra Amsterdam Fashion 7i Ladies' - 2017 | 2017-11-04 | 1 | 30 |

# Find the product with the highest total sales (quantity * price) for each category?

```sql
1       # Find the product with the highest total sales (quantity * price) for each category.
2
3       # Imporatnt Tables
4       # Products - product name
5       # Orders Items - Saled (Quantity * Price)
6       # Categories - category name
7
8   •   with a as
9       (select categories.category_name, products.product_name,
10      sum(order_items.quantity*order_items.list_price) as sales
11      from categories join products
12      on categories.category_id = products.category_id
13      join order_items
14      on products.product_id = order_items.product_id
15      group by categories.category_name, products.product_name)
16
17      Select category_name, product_name from
18      (Select *, rank() over(partition by category_name order by sales desc) rnk
19      from a) b
20      where rnk = 1;
```

| | category_name | product_name |
|---|---|---|
| ▶ | Children Bicycles | Electra Girl's Hawaii 1 (20-inch) - 2015/2016 |
| | Comfort Bicycles | Electra Townie Original 7D EQ - 2016 |
| | Cruisers Bicycles | Electra Townie Original 7D EQ - 2016 |
| | Cyclocross Bicycles | Surly Straggler 650b - 2016 |
| | Electric Bikes | Trek Conduit+ - 2016 |
| | Mountain Bikes | Trek Slash 8 275 - 2016 |
| | Road Bikes | Trek Domane SLR 6 Disc - 2017 |

Result Grid | Filter Rows: | Export: | Wrap Cell Content: ĪA

```
1      # Find the customers who spent most money on orders
2
3      # Important Tables
4      # Customers- First name and Last Name
5      # Order items - Quantity and Price
6      # Orders - Bridge Table
7
8
9 •    Select concat(customers.first_name," ", customers.last_name) as fullname,
10     sum(order_items.quantity*order_items.list_price) most_money
11     from customers join orders
12     on customers.customer_id = orders.customer_id
13     join order_items
14     on orders.order_id = order_items.order_id
15     group by fullname
16     order by most_money desc
17     limit 1;
```

| fullname | most_money |
|---|---|
| Pamelia Newman | 3780184.00 |

# Q Find the highest-priced product for each category name?

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```
1       # Find the highest priced product for each category name
2
3       # Imporatnt Tables
4       # Products - product name
5       # Order Items - List price
6       # Categories - category name
7
8   •   with a as
9       (select categories.category_name, products.product_name,
10      sum(order_items.list_price) as price
11      from categories join products
12      on categories.category_id = products.category_id
13      join order_items
14      on products.product_id = order_items.product_id
15      group by categories.category_name, products.product_name)
16
17      Select category_name, product_name from
18      (Select *, rank() over(partition by category_name order by price desc) rnk
19      from a) b
20      where rnk = 1;
21
```

| category_name | product_name |
| --- | --- |
| Children Bicycles | Electra Girl's Hawaii 1 (20-inch) - 2015/2016 |
| Comfort Bicycles | Electra Townie Original 7D EQ - 2016 |
| Cruisers Bicycles | Electra Townie Original 21D - 2016 |
| Cyclocross Bicycles | Surly Straggler 650b - 2016 |
| Electric Bikes | Trek Conduit+ - 2016 |
| Mountain Bikes | Trek Slash 8 275 - 2016 |
| Road Bikes | Trek Domane SLR 6 Disc - 2017 |

# Find the total number of orders placed by each customer per store?

```
1    # Find the total number of order placed by each customer per store
2
3    # Important Table
4    # Customers - Customer name
5    # Stores - Store name
6    # Orders - Total orders
7
8 •  Select concat(customers.first_name," ", customers.last_name) as fullname,
9    orders.store_id, count(orders.order_id)
10   from customers join orders
11   on customers.customer_id = orders.customer_id
12   group by fullname,
13   orders.store_id
14   order by fullname;
```

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| fullname | store_id | count(orders.order_id) |
|---|---|---|
| Aaron Knapp | 2 | 1 |
| Abbey Pugh | 2 | 1 |
| Abby Gamble | 2 | 2 |
| Abram Copeland | 3 | 1 |
| Adam Henderson | 1 | 1 |
| Adam Thornton | 2 | 1 |
| Addie Hahn | 2 | 1 |
| Adelaida Hancock | 1 | 1 |
| Adelle Larsen | 2 | 2 |
| Adena Blake | 2 | 1 |
| Adrien Hunter | 2 | 1 |
| Adriene Rivera | 1 | 1 |
| Adriene Rollins | 2 | 1 |
| Afton Juarez | 2 | 1 |
| Agatha Daniels | 1 | 1 |
| Agatha Melton | 2 | 1 |
| Agnes Sims | 2 | 1 |
| Agustina Lawrence | 2 | 1 |
| Ai Forbes | 2 | 1 |
| Aida Koch | 2 | 1 |
| Aide Franco | 1 | 1 |

**Q** Find the names of staff members who have not made any sales?

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```
1   # Find the names of staff members who have not made any sales.
2
3   # Important Tables
4   # Staffs - Staff_id, Staff First Name, Staff Last Name
5   # Orders - To check the condition
6
7·  Select staffs.staff_id,
8   concat(staffs.first_name," ",staffs.last_name) fullname
9   from staffs
10  where staff_id not in (Select staff_id from orders);
```

| staff_id | fullname |
| --- | --- |
| 1 | Fabiola Jackson |
| 4 | Virgie Wiggins |
| 5 | Jannette David |
| 10 | Bernardine Houston |

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

# Find the top 3 most sold products in terms of quantity?

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```
1    # Find the top 3 most sold products in terms of quantity.
2
3    # Important Table
4    # Products - Product Id, Product Name
5    # Order Items - Quantity
6
7 •  Select products.product_id, products.product_name,
8    sum(order_items.quantity) quantity_sold
9    from products join order_items
10   on products.product_id = order_items.product_id
11   group by products.product_id, products.product_name
12   order by quantity_sold desc
13   limit 3;
```

| product_id | product_name | quantity_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 |

# Q Find the median value of the price list?

```
1    # Find the median value of the price list.
2
3    # Important Table
4    # Order Items - Row Numbers
5    # Important Function - row number and case
6
7  ⊖ with a as(Select list_price,
8    row_number() over(order by list_price) pos,
9    count(*) over() n
10   from order_items)
11
12 ⊖ Select case
13   when n % 2 = 0 then (select avg(list_price) from a where pos in ((n/2) , (n/2)+1))
14   else (Select list_price from a where pos = (n+1)/2 )
15   end as median from a
16   limit 1;
```

| | median |
|---|---|
| ▶ | 59999.000000 |

**Q** List all products that have never been ordered?(use Exists)

```
1   # List all products that have never been ordered.(use Exists)
2
3•  Select product_name from products
4   where not exists( select product_id from order_items
5   where products.product_id = order_items.product_id)
```

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| Result Grid | | Filter Rows: | Export: | Wrap Cell Content: $\underline{I}A$ |

| product_name |
| --- |
| Trek 820 - 2016 |
| Surly Krampus Frameset - 2018 |
| Trek Kids' Dual Sport - 2018 |
| Trek Domane SLR 6 Disc Women's - 2018 |
| Electra Townie Go! 8i Ladies' - 2018 |
| Trek Precaliber 12 Girl's - 2018 |
| Electra Savannah 1 (20-inch) - Girl's - 2018 |
| Electra Sweet Ride 1 (20-inch) - Girl's - 2018 |
| Trek Checkpoint ALR 4 Women's - 2019 |
| Trek Checkpoint ALR 5 - 2019 |
| Trek Checkpoint ALR 5 Women's - 2019 |
| Trek Checkpoint SL 5 Women's - 2019 |
| Trek Checkpoint SL 6 - 2019 |
| Trek Checkpoint ALR Frameset - 2019 |

**Q** List the names of staff members who have made more sales than the average number of sales by all staff members?

```
1       # List the names of staff members who have made more sales than the average number of sales by all staff members.
2
3       # Important Table
4       # Staffs - Satff First name, Staff Last name
5       # Order Items - Quantity , Price
6       # Orders - Bridge Table
7
8   • ⊖ with a as (Select concat(staffs.first_name," ",staffs.last_name) as fullname,
9       coalesce(sum(order_items.quantity*order_items.list_price),0) sales
10      from staffs left join orders
11      on staffs.staff_id = orders.staff_id
12      left join order_items
13      on orders.order_id = order_items.order_id
14      group by fullname)
15
16      Select fullname from a
17      where sales > (Select avg(sales) from a);
```

| | fullname |
|---|---|
| ▶ | Genna Serrano |
| | Marcelene Boyer |
| | Venita Daniel |

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

# Identify the customers who have ordered all types of products (i.e., from every category)?

```
1    # Identify the customers who have ordered all types of products (i.e., from every category).
2
3    # Important Tables
4    # Customers - Customer Id , Customer first name, Customer last name
5    # Products - Category Id
6    # Orders and Order Items - Bridge Tables
7
8 •  Select customers.customer_id, concat(customers.first_name," ",customers.last_name) as fullname,
9    count(distinct products.category_id) all_type_of_products
10   from customers join orders
11   using(customer_id)
12   join order_items
13   using(order_id)
14   join products
15   using(product_id)
16   group by customers.customer_id, fullname
17   having count(distinct products.category_id) = (Select count(category_id) from categories);
```

| customer_id | fullname | all_type_of_products |
|---|---|---|
| 9 | Genoveva Baldwin | 7 |

# KEY INSIGHTS

➢ Among all the stores **Baldwin Bikes** have sold the most product (4779 units).

➢ **Pamelia Newman** have spent most money on orders of **$3780184.00.**

➢ Staff members who have not made any sales are

**Fabiola Jackson**

**Virgie Wiggins**

**Jannette David**

**Bernardine Houston**

# KEY INSIGHTS

➤ The median value of list price is **$59999.00.**

➤ Staff member who have made sales above average are

**Genna Serrano**

**Marcelene Boyer**

**Venita Daniel**

➤ Top 3 most sold products in terms of quantity are

**Surly Ice Cream Truck Frameset-2016 (167)**

**Electra Cruiser 1(24-Inch)-2016 (157)**

**Electra Townie original 7D EQ -2016 (156)**

# KEY INSIGHTS

➤ Customer who have ordered all type of product (i.e. from every category) is **Genoveva Baldwin.**

THANK YOU