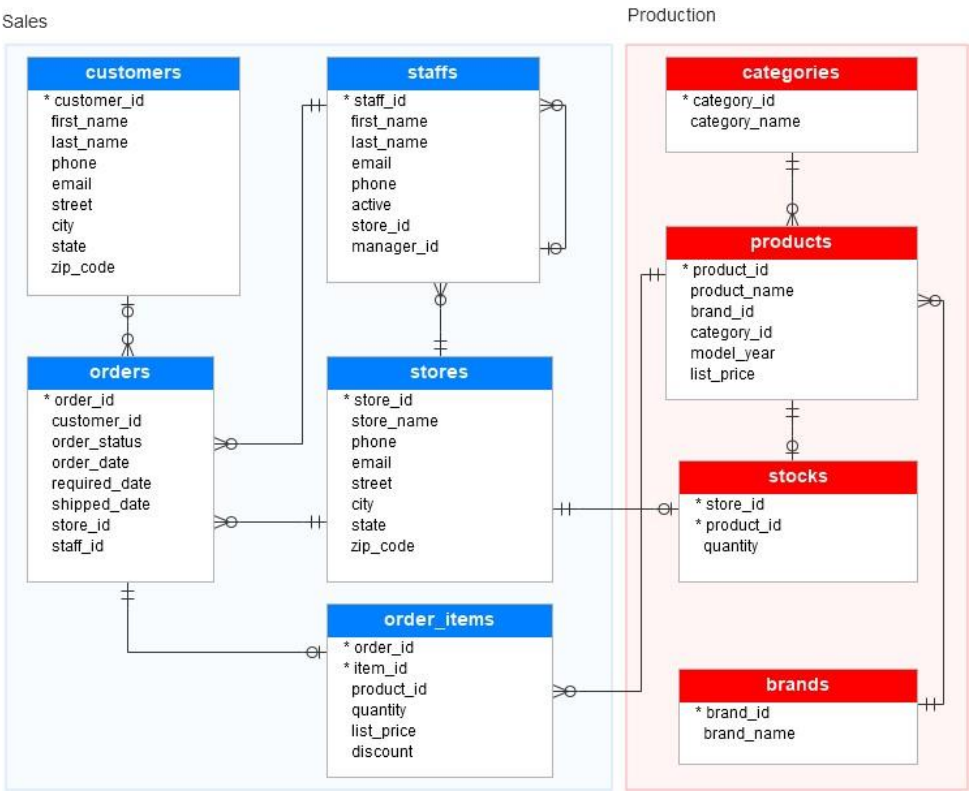
Customer Sales and Analysis

Business problem: A bike store management aims to maximize its product inventory and promotions in order to improve their sales performance. The management team also wants to examine previous sales data in order to find ways to enhance inventory control, advertise products that are well-liked, increase sales, and improve business strategy.

Approach: To enhance sales performance, I will conduct various analyses using SQL queries to gain a better insight into sales based on store, product, staff, and brand performance.



Find the top 5 best-selling products based its total revenue

```
SELECT
p.product_id,
   p.product_name,     oi.list_price,
```

```
    SUM(oi.quantity) AS total_units_sold,
    SUM(oi.quantity * (oi.list_price * (1 - oi.discount))) AS total_revenue FROM
    order_items oi INNER JOIN
    products p ON oi.product_id = p.product_id
GROUP BY
    p.product_id,
    p.product_name ORDER BY
    total_revenue DESC
LIMIT 5;
```

product_id	product_name	list_price	total_units_sold	total_revenue
7	Trek Slash 8 27.5 - 2016	3999.99	154	555558.6111
9	Trek Conduit+ - 2016	2999.99	145	389248.7025
4	Trek Fuel EX 8 29 - 2016	2899.99	143	368472.7294
11	Surly Straggler 650b - 2016	1680.99	151	226765.5510
56	Trek Domane SLR 6 Disc - 2017	5499.99	43	211584.6153

-Total sales based on stores

```
SELECT
    s.store_id,
    s.store_name,
    SUM(oi.quantity * oi.list_price * (1 - oi.discount)) AS total_revenue
    FROM stores s
    JOIN
    orders o ON s.store_id = o.store_id
    JOIN
    order_items oi ON o.order_id = oi.order_id
  GROUP BY
    s.store_id, s.store_name
```

store_id	store_name	total_revenue
2	Baldwin Bikes	5.215751e+06
1	Santa Cruz Bikes	1.605823e+06
3	Rowlett Bikes	8.675422e+05

- Average units sold for each month of the year, for each product category

```
SELECT
    c.category_name,
    AVG(oi.quantity) AS avg_units_sold,
    SUM(oi.quantity * oi.list_price * (1 - oi.discount)) AS total_revenue
  FROM
    order_items oi
  INNER JOIN
    orders o ON oi.order_id = o.order_id
  INNER JOIN
    products p ON oi.product_id = p.product_id
  INNER JOIN
    categories c ON p.category_id = c.category_id
  GROUP BY

    c.category_name
    order by total_revenue desc
ORDER BY
  year,
  month,
  category_name;
```

category_name	avg_units_sold	total_revenue
Mountain Bikes	1.483516	2.715080e+06
Road Bikes	1.494652	1.665098e+06
Cruisers Bicycles	1.497097	9.950326e+05
Electric Bikes	1.485849	9.166848e+05
Cyclocross Bicycles	1.539062	7.110118e+05
Comfort Bicycles	1.513966	3.940201e+05
Children Bicycles	1.507673	2.921892e+05

- What city and state have the highest customer concentration?

```
SELECT city,
state,
   COUNT (DISTINCT customer_id) AS total_customers FROM
customers GROUP BY     city, state ORDER BY
   total_customers DESC;
```

	city	state	total_customers
0	Mount Vernon	NY	20
1	Ballston Spa	NY	17
2	Scarsdale	NY	17
3	Canandaigua	NY	14
4	Floral Park	NY	13
...	...	...	...
190	Springfield Gardens	NY	2
191	Middle Village	NY	1
192	Tonawanda	NY	1
193	Westbury	NY	1
194	Yuba City	CA	1

195 rows × 3 columns

Top 5 staffs with the highest sales performance

```
SELECT
    s.staff_id,
    s.first_name || ' ' || s.last_name AS staff_name,
    COUNT(o.order_id) AS total_orders,
    SUM(oi.list_price * oi.quantity * (1 - oi.discount)) AS total_sales
FROM staffs s
    JOIN orders o ON s.staff_id = o.staff_id
    JOIN order_items oi ON o.order_id = oi.order_id
GROUP BY s.staff_id, staff_name
ORDER BY total_sales DESC;
```

staff_id	staff_name	total_orders	total_sales
6	Marcelene Boyer	1615	2.624121e+06
7	Venita Daniel	1580	2.591631e+06
3	Genna Serrano	544	8.532874e+05
2	Mireya Copeland	462	7.525357e+05
8	Kali Vargas	269	4.639183e+05
9	Layla Terrell	252	4.036239e+05

Total Units Sold based on each Brand.

```
SELECT
   b.brand_id,
   b.brand_name,
   SUM(oi.quantity) AS total_units_sold
FROM brands b
   JOIN products p ON b.brand_id = p.brand_id
   JOIN order_items oi ON p.product_id = oi.product_id
GROUP BY b.brand_id, b.brand_name
ORDER BY total_units_sold DESC;
```

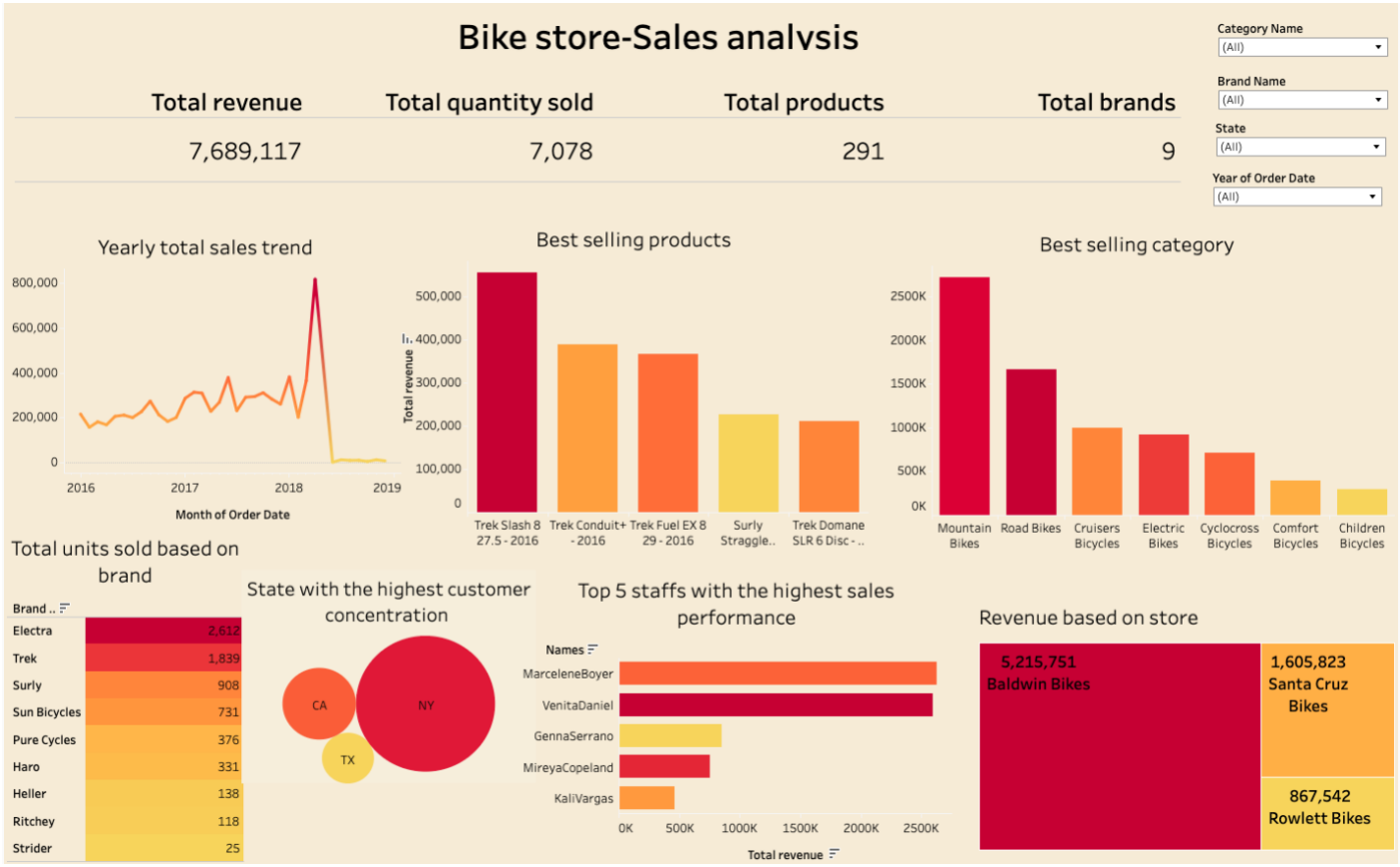
brand_id	brand_name	total_units_sold
1	Electra	2612
9	Trek	1839
8	Surly	908
7	Sun Bicycles	731
4	Pure Cycles	376
2	Haro	331
3	Heller	138
5	Ritchey	118
6	Strider	25

Yearly Total Sales trend

```
SELECT
    Extract(year from o.order_date) AS year,
    ROUND(SUM(oi.list_price * oi.quantity * (1 - oi.discount)), 2) AS yearly_revenue
FROM
    orders o
JOIN
    order_items oi ON o.order_id = oi.order_id
GROUP BY
    year
ORDER BY
    yearly_revenue desc;
```

year	yearly_revenue
2017	3447208.24
2016	2427378.53
2018	1814529.79

Visualization



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