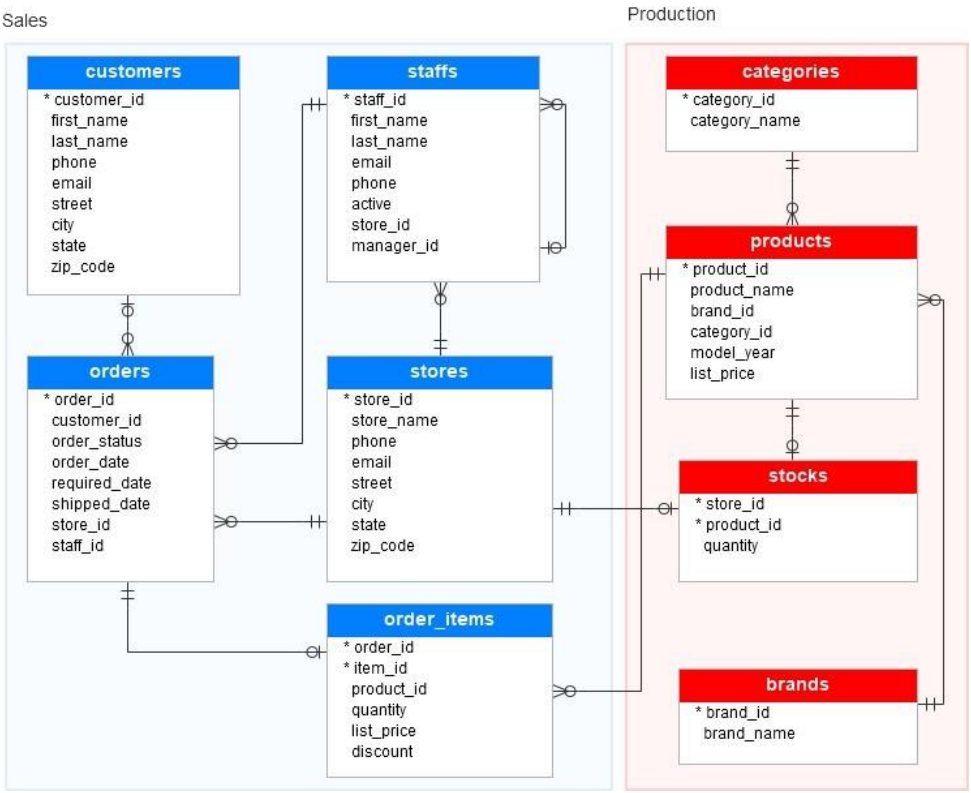
Customer Sales Analysis

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 and 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_units_sold DESC
LIMIT 5;
```

product_id	product_name	list_price	total_units_sold	total_revenue
6	Surly Ice Cream Truck Frameset - 2016	469.99	167	70371.6027
13	Electra Cruiser 1 (24-Inch) - 2016	269.99	157	37992.9928
16	Electra Townie Original 7D EQ - 2016	599.99	156	82744.6209
7	Trek Slash 8 27.5 - 2016	3999.99	154	555558.6111
23	Electra Girl's Hawaii 1 (20-inch) - 2015/2016	299.99	154	41011.6329

-Rank stores based on their total revenues

```
WITH StoreRevenue AS (
   SELECT
      s.store_name,
      Round(SUM(oi.quantity * oi.list_price * (1 - oi.discount)),2) 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_name
) SELECT    store_name,     total_revenue,
   RANK() OVER (ORDER BY total_revenue DESC) AS store_rank
FROM
   StoreRevenue;
```

store_name	total_revenue	rank
Baldwin Bikes	5215751.28	1
Santa Cruz Bikes	1605823.04	2
Rowlett Bikes	867542.24	3

- Best-selling product category

```
SELECT
    c.category_id,
    c.category_name,
    SUM(oi.list_price * oi.quantity * (1 - oi.discount)) AS category_revenue
FROM categories c
    JOIN products p ON c.category_id = p.category_id
    JOIN order_items oi ON p.product_id = oi.product_id
GROUP BY c.category_id, c.category_name
ORDER BY category_revenue DESC;
```

	category_id	category_name	category_revenue
0	6	Mountain Bikes	2.715080e+06
1	7	Road Bikes	1.665098e+06
2	3	Cruisers Bicycles	9.950326e+05
3	5	Electric Bikes	9.166848e+05
4	4	Cyclocross Bicycles	7.110118e+05
5	2	Comfort Bicycles	3.940201e+05
6	1	Children Bicycles	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,
   CONCAT(s.first_name, ' ', s.last_name) AS staff_name,
   ROUND(SUM(oi.list_price * oi.quantity * (1 - oi.discount)),2) 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, CONCAT(s.first_name, ' ', s.last_name)
ORDER BY
    total_sales DESC limit 5;
```

staff_id	staff_name	total_sales
6	Marcelene Boyer	2624120.65
7	Venita Daniel	2591630.62
3	Genna Serrano	853287.36
2	Mireya Copeland	752535.68
8	Kali Vargas	463918.30

-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(MONTH FROM o.order_date) AS month,
    Round(SUM(oi.list_price * oi.quantity * (1 - oi.discount)),2) AS monthly_revenue
FROM sales.orders o
    JOIN sales.order_items oi ON o.order_id = oi.order_id
GROUP BY month ORDER BY month;
```

year	yearly_revenue
2016	2427378.53
2017	3447208.24
2018	1814529.79