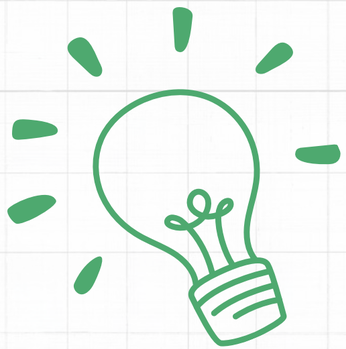
PIZZA SALES

SQL PROJECT

OVERVIEW



The Pizza Sales Analysis project aims to delve into the sales data of a pizza business to extract meaningful insights that can inform strategic decisions. By analyzing data from four primary tables - pizzas, pizza_type, orders, and order_details - the project seeks to understand customer preferences, sales trends, and key performance metrics.

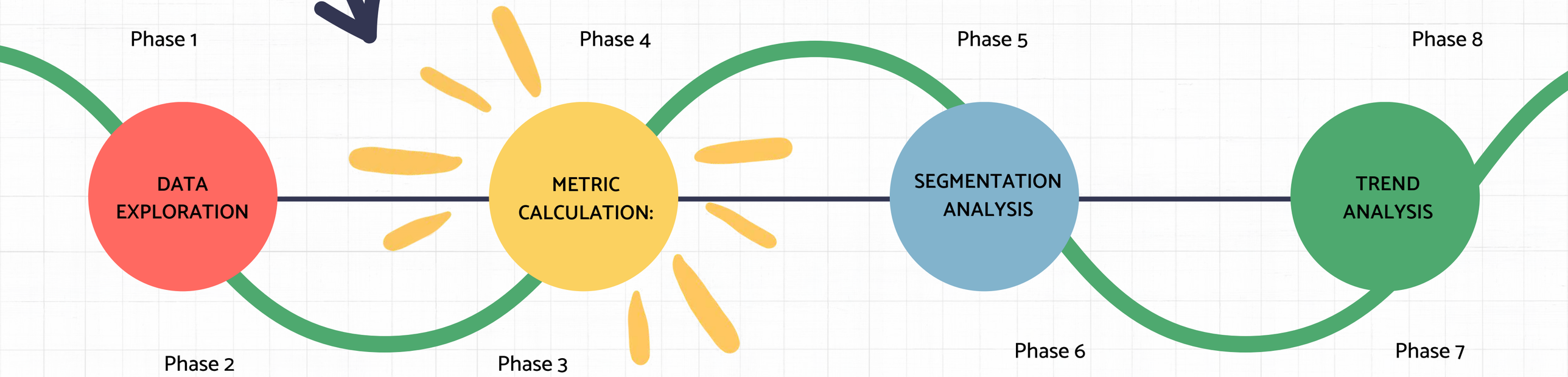
OBJECTIVES

1. Analyze sales trends over time.
2. Identify popular pizza types and best-selling items.
3. Calculate key metrics such as total revenue and average order value.
4. Segment customers based on various criteria for targeted analysis.
5. Explore customer retention rates and repeat purchase behavior.
6. Provide actionable recommendations to optimize sales and improve business performance.

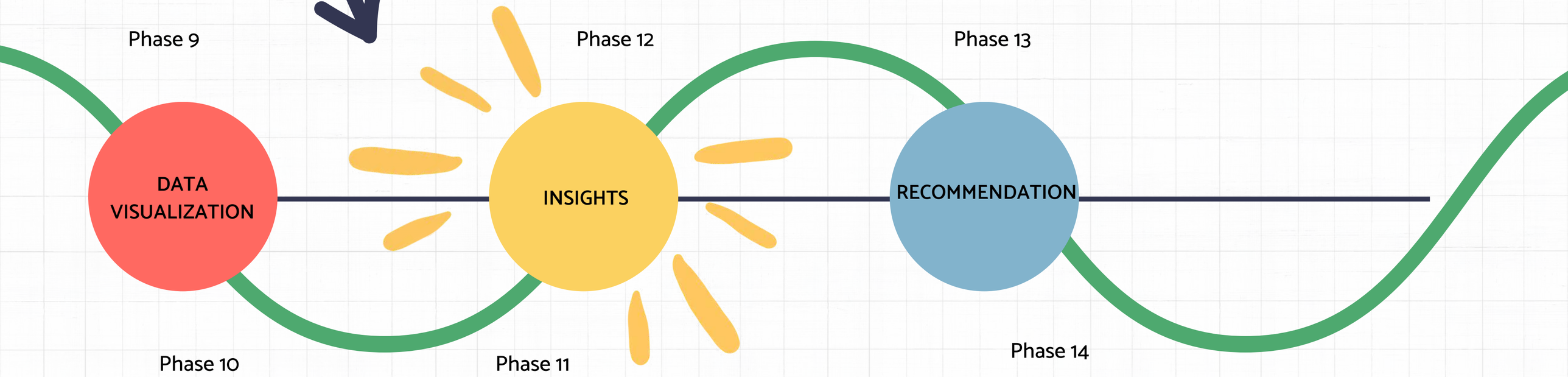
DATA DESCRIPTION:

1. pizzas: Contains detailed information about each pizza, including ID, name, price, and ingredients.
2. pizza_type: Provides additional details about pizza types, such as crust type and size.
3. orders: Stores information about each order, including order ID, customer ID, order date, and total amount.
4. order_details: Links orders to the pizzas they contain, including pizza ID, quantity, and price.

METHODOLOGY



METHODOLOGY



EXPECTED OUTCOMES

1. Comprehensive understanding of pizza sales patterns and customer behavior.
2. Identification of opportunities for revenue growth and business optimization.
3. Clear recommendations for marketing strategies, menu adjustments, and customer retention initiatives.

DELIVERABLES

SQL QUERIES USED FOR ANALYSIS.

RETRIEVE THE TOTAL NUMBER OF ORDERS PLACED.

```
3 • select count(order_id) as total_orders from orders;
```

	total_orders
▶	21350

CALCULATE THE TOTAL REVENUE GENERATED FROM PIZZA SALES.

```sql
SELECT
    ROUND(SUM(order_details.quantity * pizzas.price),
            2) AS total_sales
FROM
    order_details
        JOIN
    pizzas ON pizzas.pizza_id = order_details.pizza_id
```

	total_sales
▶	817860.05

IDENTIFY THE HIGHEST-PRICED PIZZA.

```sql
SELECT
    pizza_types.name, pizzas.price
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
ORDER BY pizzas.price DESC
LIMIT 1;
```

name	price
The Greek Pizza	35.95

IDENTIFY THE MOST COMMON PIZZA SIZE ORDERED.

```sql
SELECT
    pizzas.size,
    COUNT(order_details.order_details_id) AS order_count
FROM
    pizzas
        JOIN
    order_details ON pizzas.pizza_id = order_details.pizza_id
GROUP BY pizzas.size
ORDER BY order_count DESC;
```

size	order_count
L	18526
M	15385
S	14137
XL	544
XXL	28

LIST THE TOP 5 MOST ORDERED PIZZA TYPES ALONG WITH THEIR QUANTITIES.

```sql
SELECT
    pizza_types.name, SUM(order_details.quantity) AS quantity
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.name
ORDER BY quantity DESC
LIMIT 5;
```

name	quantity
The Classic Deluxe Pizza	2453
The Barbecue Chicken Pizza	2432
The Hawaiian Pizza	2422
The Pepperoni Pizza	2418
The Thai Chicken Pizza	2371

JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.

```sql
SELECT
    pizza_types.category,
    SUM(order_details.quantity) AS quantity
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.category
ORDER BY quantity DESC;
```

category	quantity
Classic	14888
Supreme	11987
Veggie	11649
Chicken	11050

JOIN THE NECESSARY TABLES TO FIND THE TOTAL QUANTITY OF EACH PIZZA CATEGORY ORDERED.

```sql
SELECT
    HOUR(order_time) AS hour, COUNT(order_id) AS order_count
FROM
    orders
GROUP BY HOUR(order_time);
```

hour	order_count
11	1231
12	2520
13	2455
14	1472
15	1468
16	1920
17	2336
18	2399

JOIN RELEVANT TABLES TO FIND THE CATEGORY-WISE DISTRIBUTION OF PIZZAS.

```
4· select category , count(name) from pizza_types
5  group by category;
```

category	count(name)
Chicken	6
Classic	8
Supreme	9
Veggie	9

GROUP THE ORDERS BY DATE AND CALCULATE THE AVERAGE NUMBER OF PIZZAS ORDERED PER DAY.

```sql
SELECT
    round(avg(quantity),0) as average_number_of_pizzas_ordered_per_day
FROM
    (SELECT
        DATE(orders.order_date),
            SUM(order_details.quantity) AS quantity
    FROM
        orders
    JOIN order_details ON orders.order_id = order_details.order_id
    GROUP BY orders.order_date) AS order_quantity;
```

	average_number_of_pizzas_ordered_per_day
▶	138

DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE.

```sql
SELECT
    pizza_types.name,
    SUM(order_details.quantity * pizzas.price) AS revenue
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.name
ORDER BY revenue DESC
LIMIT 3
```

	name	revenue
▶	The Thai Chicken Pizza	43434.25
	The Barbecue Chicken Pizza	42768
	The California Chicken Pizza	41409.5

CALCULATE THE PERCENTAGE CONTRIBUTION OF EACH PIZZA TYPE TO TOTAL REVENUE.

```sql
SELECT
    pizza_types.category,
    round(sum(order_details.quantity * pizzas.price) / (select round(sum(order_details.quantity*pizzas.price),2) as total_sales
from
    order_details join pizzas
    on pizzas.pizza_id = order_details.pizza_id) * 100 , 2) as revenue
FROM
    pizza_types
        JOIN
    pizzas ON pizza_types.pizza_type_id = pizzas.pizza_type_id
        JOIN
    order_details ON order_details.pizza_id = pizzas.pizza_id
GROUP BY pizza_types.category
ORDER BY revenue DESC;
```

	category	revenue
▶	Classic	26.91
	Supreme	25.46
	Chicken	23.96
	Veggie	23.68

ANALYZE THE CUMULATIVE REVENUE GENERATED OVER TIME.

```
3   select order_date,
4   sum(revenue)
5   over (order by order_date) as comm_revenue
6   from
7   (select orders.order_date,
8   sum(order_details.quantity * pizzas.price) as revenue
9   from order_details join pizzas
10  on order_details.pizza_id = pizzas.pizza_id
11  join orders on orders.order_id = order_details.order_id
12  group by orders.order_date) as sales
```

order_date	comm_revenue
2015-01-01	2713.850000000
2015-01-02	5445.75
2015-01-03	8108.15
2015-01-04	9863.6
2015-01-05	11929.55
2015-01-06	14358.5
2015-01-07	16560.7

DETERMINE THE TOP 3 MOST ORDERED PIZZA TYPES BASED ON REVENUE FOR EACH PIZZA CATEGORY.

```
4  (select category, name, revenue,
5  rank() over(partition by category order by revenue desc) as rn
6  from
7  (select pizza_types.category, pizza_types.name,
8  sum((order_details.quantity) * pizzas.price) as revenue
9  from pizza_types join pizzas
10 on pizza_types.pizza_type_id = pizzas.pizza_type_id
11 join order_details
12 on order_details.pizza_id = pizzas.pizza_id
13 group by pizza_types.category, pizza_types.name) as a) as b
14 where rn <= 3;
```

name	revenue
The Thai Chicken Pizza	43434.25
The Barbecue Chicken Pizza	42768
The California Chicken Pizza	41409.5
The Classic Deluxe Pizza	38180.5
The Hawaiian Pizza	32273.25
The Pepperoni Pizza	30161.75

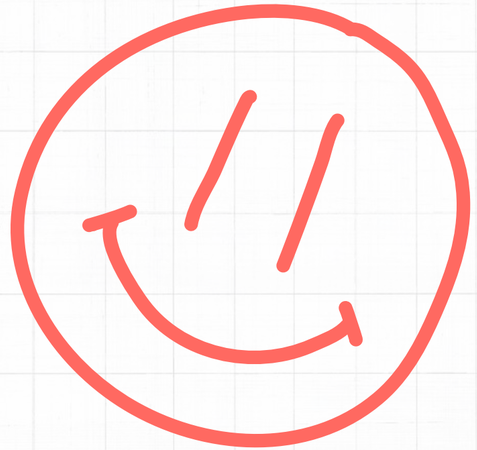
INSIGHTS

1. **Seasonal Variation:**
    - The summer months drive a significant increase in sales, suggesting potential opportunities for targeted marketing campaigns during this period.
    - Winter months exhibit a slight decline in sales, indicating the need for promotional strategies to boost winter sales.
2. **Customer Preferences:**
    - Understanding the popularity of specific pizza types can inform menu optimization efforts, such as introducing new variations of popular pizzas or promoting underperforming items.
3. **Retention Strategies:**
    - Implementing loyalty programs or targeted promotions for repeat customers can enhance customer retention rates and foster long-term customer relationships.
    - Personalized recommendations based on past orders can incentivize repeat purchases and increase customer satisfaction.

RECOMMENDATIONS

1. **Marketing Strategies:**
    1. Launch seasonal promotions or discounts during peak sales periods to capitalize on increased demand.
    2. Leverage social media platforms and email marketing to engage customers and promote special offers.
2. **Menu Optimization:**
    1. Introduce new pizza variations or limited-time offerings to attract customers and encourage experimentation.
    2. Consider expanding the menu to include additional options for crust types, toppings, and sizes to cater to diverse customer preferences.
3. **Customer Retention Initiatives**
    1. Develop a loyalty program offering rewards or discounts for repeat purchases.
    2. Send personalized offers and recommendations based on past orders to enhance customer engagement and loyalty.

THANK YOU



SUBIR SINGH