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RETAIL SALES ANALYSIS USING SQL

Presented By

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INTRODUCTION

In the competitive world of retail, data-driven decisions are key to staying ahead. This project explores retail sales data using SQL to uncover trends, enhance customer satisfaction, and drive profitability. By analyzing transaction records and customer interactions, this project aims to deliver actionable insights that improve business operations and inform strategic planning.

The project focuses on analyzing key metrics such as sales performance, customer behavior, and inventory management. Using SQL's robust querying capabilities, we transform raw data into meaningful insights to optimize retail operations.

Question No. 1

WRITE A SQL QUERY TO RETRIVE ALL COLUMNS FOR SALES MADE ON '2022-11-05'.

Solution :

```
select *
    from retail_sales
where
    sale_date = '2022-11-05';
```

Question No. 2

WRITE A SQL QUERY TO RETRIVE ALL TRANSACTION WHERE THE CATEGORY IS 'CLOTHING' AND THE QUANTITY SOLD IS MORE THAN 4 IN THE MONTH OF NOV-2022.

Solution :

```
select * from retail_sales
where
 category = 'Cloathing'
 and
 quantiy >= 4
 and
 to_char(sale_date, 'YYYY-MM') = '2022-11';
```

Question No. 3

WRITE A SQL QUERY TO CALCULATE THE TOTAL SALES (TOTAL_SALE) FOR EACH CATEGORY.

Solution :

```
select
  category,
  sum(total_sale) as net_sale,
  count(*) as total_orders
from retail_sales
group by 1;
```

Question No. 4

WRITE A SQL QUERY TO FIND THE AVERAGE AGE OF CUSTOMERS WHO PURCHASED ITEMS FROM THE 'BEAUTY' CATEGORY.

Solution :

```
select
 round(avg(age), 2) as avg_age
from retail_sales
where
 category = 'Beauty';
```

Question No. 5

WRITE A SQL QUERY TO FIND ALL TRANSACTIONS WHERE THE TOTAL_SALE IS GREATER THAN 1000.

Solution :

```
select *
  from retail_sales
where
   total_sale > 1000;
```

Question No. 6

WRITE A SQL QUERY TO FIND THE TOTAL NUMBER AS TRANSACTIONS (TRANSACTION_ID) MADE BY EACH GENDER IN EACH CATEGORY.

Solution :

```
select category, gender,
    count(*) as total_trans
from retail_sales
group by
  category,
  gender
order by 1;
```

Question No. 7

WRITE A SQL QUERY TO CALCULATE THE AVERAGE SALE FOR EACH MONTH. FIND OUT BEST SELLING MONTH IN EACH YEAR.

Solution :

```
select year, month, avg_sale from
(select
 extract(year from sale_date) as year,
 extract(month from sale_date) as month,
 avg(total_sale) as avg_sale
from retail_sales
group by 1, 2) as t1
where rank = 1;
```

Question No. 8

WRITE A SQL QUERY TO FIND THE TOP 5 CUSTOMERS BASED ON THE HIGHEST TOTAL SALES.

Solution :

```
select
 customer_id,
 sum(total_sale) as total_sales
from retail_sales
group by 1
order by 2 desc
limit 5;
```

Question No. 9

WRITE A SQL QUERY TO FIND THE NUMBER OF UNIQUE CUSTOMERS WHO PURCHASED ITEMS FROM EACH CATEGORY.

Solution :

```
select
 category,
 count(distinct customer_id) as
cnt_unique_cs
from retail_sales
group by category;
```

Question No. 10

WRITE A SQL QUERY TO CREATE EACH SHIFT AND NUMBER OF ORDERS (EXAMPLE MORNING <=12, AFTERNOON BETWEEN !2 & 17, EVENING >17)

Solution :

```
with hourly_sale
as
(
select *,
 case
  when extract(hour from sale_time) < 12 then 'Morning'
  when extract(hour from sale_time) between 12 and 17 then 'Afternon'
  else 'Evening'
 end as shift
from retail_sales
)
select
 shift,
 count(*) as total_orders
from hourly_sale
group by shift;
```

THANK YOU

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