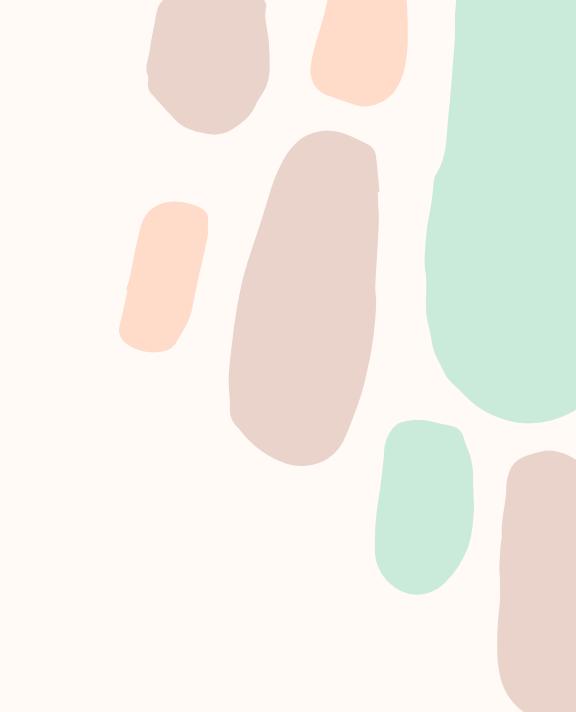


Challenge 5 – Pub pricing analysis





Steel Data Sql Challenge-5

Pub pricing analysis

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Solutions are Coded in - Microsoft Sql Server



Introduction

You are a Pricing Analyst working for a pub chain called 'Pubs "R" Us'

You have been tasked with analysing the drinks prices and sales to gain a greater insight into how the pubs in your chain are performing.

<https://www.steeldata.org.uk/SQL5.html>

Tables

pubs

pub_id	pub_name	city	state	country
1	The Red Lion	London	England	United Kingdom
2	The Dubliner	Dublin	Dublin	Ireland
3	The Cheers Bar	Boston	Massachusetts	United States
4	La Cerveceria	Barcelona	Catalonia	Spain

beverages

beverage_id	beverage_name	category	alcohol_content	price_per_unit
1	Guiness	Beer	4.2	5.99
2	Jameson	Whiskey	40	29.99
3	Mojito	Cocktail	12	8.99
4	Chardonnay	Wine	13.5	12.99
5	IPA	Beer	6.8	4.99
6	Tequila	Spirit	38	24.99

ratings

rating_id	pub_id	customer_name	rating	review
1	1	John Smith	4.5	Great pub with a wide selection of beers
2	1	Emma Johnson	4.8	Excellent service and cozy atmosphere
3	2	Michael Brown	4.2	Authentic atmosphere and great beers
4	3	Sophia Davis	4.6	The cocktails were amazing! Will definitely come back.
5	4	Oliver Wilson	4.9	The wine selection here is outstanding
6	4	Isabella Moore	4.3	Had a great time trying different spirits
7	1	Sophia Davis	4.7	Loved the pub food! Great ambience
8	2	Ethan Johnson	4.5	A good place to hang out with friends
9	2	Olivia Taylor	4.1	The whiskey tasting experience was fantastic
10	3	William Miller	4.4	Friendly staff and live music on weekends

sales

sale_id	pub_id	beverage_id	quantity	transaction_date
1	1	1	10	1/5/23
2	1	2	5	1/5/23
3	2	1	8	1/5/23
4	3	3	12	2/5/23
5	4	4	3	2/5/23
6	4	6	6	3/5/23
7	2	3	6	3/5/23
8	3	1	15	3/5/23
9	3	4	7	3/5/23
10	4	1	10	4/5/23
11	1	3	5	6/5/23
12	2	2	3	9/5/23
13	2	5	9	9/5/23
14	3	6	4	9/5/23
15	4	3	7	9/5/23
16	4	4	2	9/5/23
17	1	4	6	11/5/23
18	1	6	8	11/5/23
19	2	1	12	12/5/23
20	3	5	5	13/5/23

#2 What is the total sales amount for each pub, including the beverage price and quantity sold?

```
- select p.pub_name, sum(s.quantity * b.price_per_unit) as Total_SalesAmt  
from pubs p  
inner join sales s on p.pub_id=s.pub_id  
inner join beverages b on b.beverage_id=s.beverage_id  
group by p.pub_name;
```

120 %

Results Messages

	pub_name	Total_SalesAmt
1	La Cerveceria	337.72
2	The Cheers Bar	413.57
3	The Dubliner	308.62
4	The Red Lion	532.66

#1 How many pubs are located in each country??

1. How many pubs are located in each country??

```
- select country ,count(*) as Total_pubs  
from pubs  
group by country;
```

120 %

Results Messages

	country	Total_pubs
1	Ireland	1
2	Spain	1
3	United Kingdom	1
4	United States	1

#3. Which pub has the highest average rating?

```
--  
select top 1 p.pub_id , round(avg(r.rating),2) as Highest_avg_rating  
from ratings r  
inner join pubs p on r.pub_id=p.pub_id  
group by p.pub_id  
order by 2 desc; -- The Red Lion pub has highest rating of 4.67
```

19 %

Results Messages

	pub_id	Highest_avg_rating
1	1	4.67

#4. What are the top 5 beverages by sales quantity across all pubs?

```
-- I used Row_number Window function, we can use below window functions as well ;  
-- Rank Functions skips the rank if there are duplicate row values.  
-- Dense_rank Functions will never skip the rank.  
  
with cte_rank as (  
    select beverage_id,  
           sum(quantity) as total_quantity,  
           row_number()over(order by sum(quantity) desc) as rnum  
    from sales  
    group by beverage_id  
)  
select b.beverage_name as [Top 5 beverages]  
from cte_rank as c  
inner join beverages as b on c.beverage_id = b.beverage_id  
where rnum <=5;
```

19 %

Results Messages

	Top 5 beverages
1	Guinness
2	Mojito
3	Chardonnay
4	Tequila
5	IPA

#5. How many sales transactions occurred on each date?

```
select transaction_date, count(*) as Sales_Frequency -- count the total sales transactions  
from sales  
group by transaction_date    -- to create a unique record of each value  
order by 1;
```

19 %

Results Messages

	transaction_date	Sales_Frequency
1	2023-05-01	3
2	2023-05-02	2
3	2023-05-03	4
4	2023-05-04	1
5	2023-05-06	1
6	2023-05-09	5
7	2023-05-11	2
8	2023-05-12	1
9	2023-05-13	1

#6. Find the name of someone that had cocktails and which pub they had it in.

Approach - 1

```
select p.pub_name ,k.customer_name
from pubs as p
join ( select customer_name ,pub_id
      from ratings
     where pub_id in (
           select distinct pub_id
             from sales
            where beverage_id = (
                  select beverage_id
                    from beverages
                   where category = 'Cocktail')
                )
      ) as k
    on k.pub_id = p.pub_id
   order by 1 ;
```

Approach - 2

```
-- or (Using Inner join)
select p.pub_name ,r.customer_name
      from pubs as p
      inner join ratings as r
      on p.pub_id = r.pub_id
      inner join sales as s
      on s.pub_id = r.pub_id
      inner join beverages as b
      on b.beverage_id = s.beverage_id
     where b.category = 'Cocktail' --
      order by 1;
```

	pub_name	customer_name
1	La Cerveceria	Oliver Wilson
2	La Cerveceria	Isabella Moore
3	The Cheers Bar	Sophia Davis
4	The Cheers Bar	William Miller
5	The Dubliner	Michael Brown
6	The Dubliner	Ethan Johnson
7	The Dubliner	Olivia Taylor
8	The Red Lion	John Smith
9	The Red Lion	Emma Johnson
10	The Red Lion	Sophia Davis

	pub_name	customer_name
1	La Cerveceria	Oliver Wilson
2	La Cerveceria	Isabella Moore
3	The Cheers Bar	Sophia Davis
4	The Cheers Bar	William Miller
5	The Dubliner	Michael Brown
6	The Dubliner	Ethan Johnson
7	The Dubliner	Olivia Taylor
8	The Red Lion	John Smith
9	The Red Lion	Emma Johnson
10	The Red Lion	Sophia Davis

#7. What is the average price per unit for each category of beverages, excluding the category 'Spirit'?

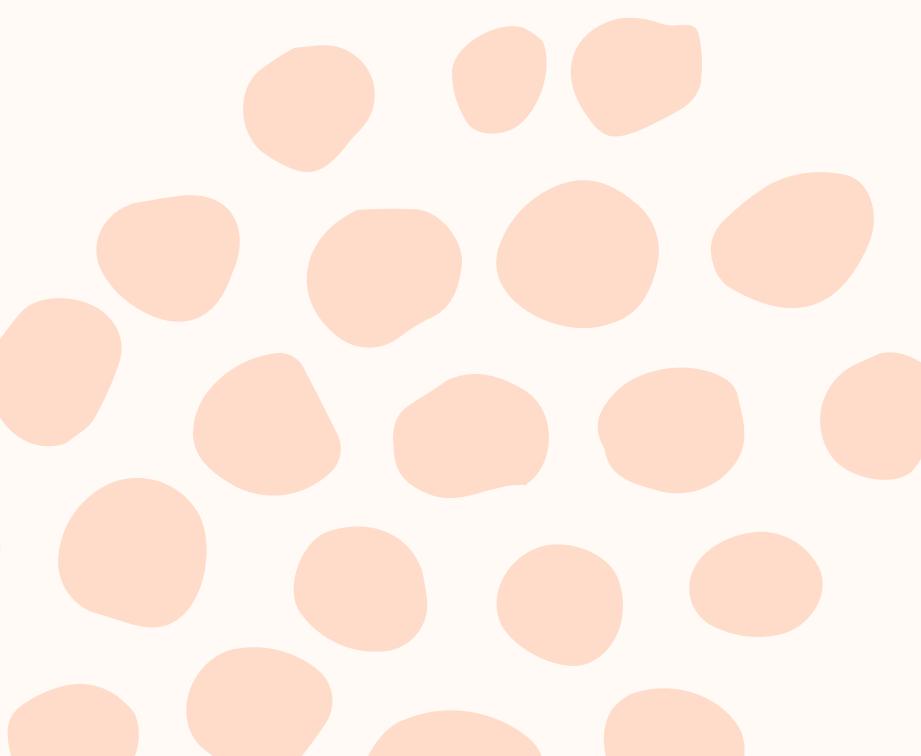
```
select category as Beverage_category, avg(price_per_unit) as average_price_per_unit  
from beverages  
where category <> 'Spirit' -- to not include in the filter criteria  
group by category;
```

31 %

Results Messages

	Beverage_category	average_price_per_unit
1	Beer	5.490000
2	Cocktail	8.990000
3	Whiskey	29.990000
4	Wine	12.990000

#8. Which pubs have a rating higher than the average rating of all pubs?



```
with cte_ratings as(  
select Pub_id  
      ,rating  
      ,dense_rank() over(partition by Pub_id Order by rating desc) as dRank  
      -- used partition by to find any duplicate records  
from ratings  
where rating > (select avg(rating) from ratings)  
      -- avg rating of all pubs has value of 4.5  
      )  
select      p.* ,c.rating  
from        cte_ratings as c  
inner join  pubs as p  
on          c.pub_id = p.pub_id  
where       dRank = 1; -- filter by only rank 1 (to filter duplicate records)
```

31 %

Results Messages

	pub_id	pub_name	city	state	country	rating
1	1	The Red Lion	London	England	United Kingdom	4.8
2	3	The Cheers Bar	Boston	Massachusetts	United States	4.6
3	4	La Cerveceria	Barcelona	Catalonia	Spain	4.9

#9. What is the running total of sales amount for each pub, ordered by the transaction date?

```
with Cte_SalesAmt as (
    select s.pub_id,(s.quantity * b.price_per_unit) as SalesAmt,s.transaction_date
    from sales s
    inner join beverages as b
    on s.beverage_id = b.beverage_id
)
select *,Sum(SalesAmt)
    over(partition by pub_id order by transaction_date) as Running_Total_SalesAmt
from Cte_SalesAmt;
```

Results

	pub_id	SalesAmt	transaction_date	Running_Total_SalesAmt
1	1	59.90	2023-05-01	209.85
2	1	149.95	2023-05-01	209.85
3	1	44.95	2023-05-06	254.80
4	1	77.94	2023-05-11	532.66
5	1	199.92	2023-05-11	532.66
6	2	47.92	2023-05-01	47.92
7	2	53.94	2023-05-03	101.86
8	2	89.97	2023-05-09	236.74
9	2	44.91	2023-05-09	236.74
10	2	71.88	2023-05-12	308.62
11	3	107.88	2023-05-02	107.88
12	3	89.85	2023-05-03	288.66
13	3	90.93	2023-05-03	288.66
14	3	99.96	2023-05-09	388.62
15	3	24.95	2023-05-13	413.57
16	4	38.97	2023-05-02	38.97
17	4	149.94	2023-05-03	188.91
18	4	59.90	2023-05-04	248.81
19	4	62.93	2023-05-09	337.72
20	4	25.98	2023-05-09	337.72

#10. For each country, what is the average price per unit of beverages in each category, and what is the overall average price per unit of beverages across all categories?

```
with cte_avg_price as (
    select p.country, b.category, AVG(b.price_per_unit) as [Average_price]
    from   pubs p
    inner join sales s on s.pub_id = p.pub_id
    inner join beverages b on b.beverage_id = s.beverage_id
    group by p.country, b.category
),
cte_total_avg_price as (
    select p.country, AVG(b.price_per_unit) as [Total_Average_price]
    from   pubs p
    inner join sales s on s.pub_id = p.pub_id
    inner join beverages b on b.beverage_id = s.beverage_id
    group by p.country
)
select a.country as Country , a.category as category
      ,a.Average_price as [Avg_price_per_unit] , b.Total_Average_price as [Total_Average_price_unit]
from   cte_avg_price a
inner join cte_total_avg_price b
on     a.country = b.country;
```

	Country	category	Avg_price_per_unit	Total_Average_price_unit
1	Ireland	Beer	5.656666	11.190000
2	Spain	Beer	5.990000	13.190000
3	United Kingdom	Beer	5.990000	16.590000
4	United States	Beer	5.490000	11.590000
5	Ireland	Cocktail	8.990000	11.190000
6	Spain	Cocktail	8.990000	13.190000
7	United Kingdom	Cocktail	8.990000	16.590000
8	United States	Cocktail	8.990000	11.590000
9	Spain	Spirit	24.990000	13.190000
10	United Kingdom	Spirit	24.990000	16.590000
11	United States	Spirit	24.990000	11.590000
12	Ireland	Whiskey	29.990000	11.190000
13	United Kingdom	Whiskey	29.990000	16.590000
14	Spain	Wine	12.990000	13.190000
15	United Kingdom	Wine	12.990000	16.590000
16	United States	Wine	12.990000	11.590000



Thank
you