CHALLENGE 5 PUB PRICING ANALYSIS

INTRODUCTION

1. The provided data needs to be analyzed by a Pricing Analyst working for a pub chain called 'Pubs "R" Us'.

2. The task is to analyze the drinks prices and sales to gain a greater insight into how the pubs in the chain are performing.

3. The following four tables will be used for the analysis :
   - Pubs
   - Beverages
   - Sales
   - Ratings

TABLES USED FOR THE ANALYSIS

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

Q1. How many pubs are located in each country?

Solution

```
3 •  SELECT country, COUNT(DISTINCT pub_name) AS pubs_count
4    FROM pubs
5    GROUP BY country;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

country	pubs_count
Ireland	1
Spain	1
United Kingdom	1
United States	1

Q2. What is the total sales amount for each pub, including the beverage price and quantity sold?

Solution

```
9  SELECT p.pub_name,
10     SUM(b.price_per_unit * s.quantity) AS total_sales
11 FROM sales s
12     INNER JOIN pubs p USING(pub_id)
13     INNER JOIN beverages b USING(beverage_id)
14 GROUP BY p.pub_name;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pub_name	total_sales
The Red Lion	532.66
The Dubliner	308.62
The Cheers Bar	413.57
La Cerveceria	337.72

Q3. Which pub has the highest average rating?

Solution

```
18 •  SELECT p.pub_name,
19        ROUND(AVG(r.rating),2) AS highest_average_rating
20    FROM ratings r
21        INNER JOIN pubs p USING(pub_id)
22    GROUP BY p.pub_name
23    ORDER BY AVG(r.rating) DESC
24    LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetc

pub_name	highest_average_rating
The Red Lion	4.67

Q4. What are the top 5 beverages by sales quantity across all pubs?

Solution

```
28 •  SELECT b.beverage_name,
29        SUM(s.quantity) AS total_quantity
30    FROM sales s
31        INNER JOIN beverages b USING(beverage_id)
32    GROUP BY b.beverage_name
33    ORDER BY SUM(s.quantity) DESC
34    LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

beverage_name	total_quantity
Guinness	55
Mojito	30
Chardonnay	18
Tequila	18
IPA	14

Q5. How many sales transactions occurred on each date?

Solution

```
38 •  SELECT transaction_date,
39        COUNT(*) AS Number_of_sales
40    FROM sales
41    GROUP BY transaction_date;
```

Result Grid | Filter Rows: | Export:

transaction_date	Number_of_sales
2023-05-01	3
2023-05-02	2
2023-05-03	4
2023-05-04	1
2023-05-06	1
2023-05-09	5
2023-05-11	2
2023-05-12	1
2023-05-13	1

Q6. Find the name of someone that had cocktails and which pub they had it in.

Solution

```
45 •  SELECT r.customer_name, p.pub_name
46    FROM sales s
47        JOIN ratings r USING(pub_id)
48        JOIN pubs p USING(pub_id)
49        JOIN beverages b USING(beverage_id)
50    WHERE b.category = "Cocktail";
```

Result Grid | Filter Rows: | Export: | Wrap Ce

customer_name	pub_name
Sophia Davis	The Cheers Bar
William Miller	The Cheers Bar
Michael Brown	The Dubliner
Ethan Johnson	The Dubliner
Olivia Taylor	The Dubliner
John Smith	The Red Lion
Emma Johnson	The Red Lion
Sophia Davis	The Red Lion
Oliver Wilson	La Cerveceria
Isabella Moore	La Cerveceria

Q7. What is the average price per unit for each category of beverages, excluding the category 'Spirit'?

Solution

```
54 •  SELECT category,
55        ROUND(AVG(price_per_unit),2) AS average_price
56    FROM beverages
57    WHERE NOT category = 'Spirit'
58    GROUP BY category
59    ORDER BY ROUND(AVG(price_per_unit),2) DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

category	average_price
Whiskey	29.99
Wine	12.99
Cocktail	8.99
Beer	5.49

Q8. Which pubs have a rating higher than the average rating of all pubs?

Solution

```sql
WITH CTE AS (
    SELECT pub_id, rating,
    ROUND(AVG(rating) OVER (PARTITION BY pub_id),1) AS avg_rating
    FROM ratings
    GROUP BY pub_id, rating)
SELECT c.pub_id AS Pub_id,
    p.pub_name AS Pub_name,
    c.rating AS Rating,
    c.avg_rating AS Avg_rating
FROM CTE c
    INNER JOIN pubs p USING(pub_id)
WHERE c.rating > c.avg_rating;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

Pub_id	Pub_name	Rating	Avg_rating
1	The Red Lion	4.8	4.7
2	The Dubliner	4.5	4.3
3	The Cheers Bar	4.6	4.5
4	La Cerveceria	4.9	4.6

Q9. What is the running total of sales amount for each pub, ordered by the transaction date?

Solution

```
79 •  SELECT s.transaction_date, p.pub_name,
80        SUM(b.price_per_unit*s.quantity) OVER (PARTITION BY p.pub_id ORDER BY s.transaction_date) AS running_total
81    FROM sales s
82        JOIN pubs p USING(pub_id)
83        JOIN beverages b USING(beverage_id)
84    ORDER BY s.transaction_date;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

transaction_date	pub_name	running_total
2023-05-01	The Red Lion	209.85
2023-05-01	The Red Lion	209.85
2023-05-01	The Dubliner	47.92
2023-05-02	The Cheers Bar	107.88
2023-05-02	La Cerveceria	38.97
2023-05-03	The Dubliner	101.86
2023-05-03	The Cheers Bar	288.66
2023-05-03	The Cheers Bar	288.66
2023-05-03	La Cerveceria	188.91
2023-05-04	La Cerveceria	248.81
2023-05-06	The Red Lion	254.80
2023-05-09	The Dubliner	236.74
2023-05-09	The Dubliner	236.74
2023-05-09	The Cheers Bar	388.62
2023-05-09	La Cerveceria	337.72
2023-05-09	La Cerveceria	337.72
2023-05-11	The Red Lion	532.66
2023-05-11	The Red Lion	532.66
2023-05-12	The Dubliner	308.62
2023-05-13	The Cheers Bar	413.57

Q10. 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?

Solution

```sql
WITH ap AS (
    SELECT p.country, b.category,
        ROUND(AVG(b.price_per_unit),2) AS average_price
    FROM sales s
        JOIN pubs p USING(pub_id)
        JOIN beverages b USING(beverage_id)
    GROUP BY p.country, b.category),
    oap AS (
    SELECT p.country,
        ROUND(AVG(b.price_per_unit),2) AS Overall_average_price
    FROM sales s
        JOIN pubs p USING(pub_id)
        JOIN beverages b USING(beverage_id)
    GROUP BY p.country)
SELECT  a.country AS country, a.category AS category,
    a.average_price AS Per_unit_avg_price, b.overall_average_price AS overall_average_price
FROM ap a
    JOIN oap b USING(country);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

country	category	Per_unit_avg_price	overall_average_price
United Kingdom	Beer	5.99	16.59
United Kingdom	Whiskey	29.99	16.59
United Kingdom	Cocktail	8.99	16.59
United Kingdom	Wine	12.99	16.59
United Kingdom	Spirit	24.99	16.59
Ireland	Beer	5.66	11.19
Ireland	Cocktail	8.99	11.19
Ireland	Whiskey	29.99	11.19
United States	Cocktail	8.99	11.59
United States	Beer	5.49	11.59
United States	Wine	12.99	11.59
United States	Spirit	24.99	11.59
Spain	Wine	12.99	13.19
Spain	Spirit	24.99	13.19
Spain	Beer	5.99	13.19
Spain	Cocktail	8.99	13.19

Q11. For each pub, what is the percentage contribution of each category of beverages to the total sales amount, and what is the pub's overall sales amount?

Solution

```sql
WITH A AS (
    SELECT p.pub_id, p.pub_name, b.category,
        SUM(b.price_per_unit*s.quantity) AS TS
    FROM sales s
        JOIN pubs p USING(pub_id)
        JOIN beverages b USING(beverage_id)
    GROUP BY p.pub_id, p.pub_name, b.category),
    B AS (
    SELECT *,
        SUM(TS) OVER (PARTITION BY pub_name) AS TSO
    FROM A)
SELECT pub_id, pub_name, category, TS,
    ROUND(((TS/TSO)*100),2) AS Cotribution_percentage
FROM B
ORDER BY pub_id;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

pub_id	pub_name	category	TS	Cotribution_percentage
1	The Red Lion	Beer	59.90	11.25
1	The Red Lion	Whiskey	149.95	28.15
1	The Red Lion	Cocktail	44.95	8.44
1	The Red Lion	Wine	77.94	14.63
1	The Red Lion	Spirit	199.92	37.53
2	The Dubliner	Beer	164.71	53.37
2	The Dubliner	Cocktail	53.94	17.48
2	The Dubliner	Whiskey	89.97	29.15
3	The Cheers Bar	Cocktail	107.88	26.09
3	The Cheers Bar	Beer	114.80	27.76
3	The Cheers Bar	Wine	90.93	21.99
3	The Cheers Bar	Spirit	99.96	24.17
4	La Cerveceria	Wine	64.95	19.23
4	La Cerveceria	Spirit	149.94	44.40
4	La Cerveceria	Beer	59.90	17.74
4	La Cerveceria	Cocktail	62.93	18.63