Retail Sales Analysis Project

Question -1

Q.1 Write a Query to retrive all columns for sales made on "2022-11-05"

SQL Query

```
SELECT * FROM SALES
WHERE SALE_DATE='2022-11-05';
```

Output

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

transactions_id	sale_date	sale_time	customer_id	gender	age	category	quantiy	price_per_unit	cogs	total_sal
180	2022-11-05	10:47:00	117	Male	41	Clothing	3	300	129	900
240	2022-11-05	11:49:00	95	Female	23	Beauty	1	300	123	300
1256	2022-11-05	09:58:00	29	Male	23	Clothing	2	500	190	1000
1587	2022-11-05	20:06:00	140	Female	40	Beauty	4	300	105	1200
1819	2022-11-05	20:44:00	83	Female	35	Beauty	2	50	14	100
943	2022-11-05	19:29:00	90	Female	57	Clothing	4	300	318	1200
1896	2022-11-05	20:19:00	87	Female	30	Electronics	2	25	31	50
1137	2022-11-05	22:34:00	104	Male	46	Beauty	2	500	145	1000
856	2022-11-05	17:43:00	102	Male	54	Electronics	4	30	9	120
214	2022-11-05	16:31:00	53	Male	20	Beauty	2	30	8	60
1265	2022-11-05	14:35:00	86	Male	55	Clothing	3	300	111	900

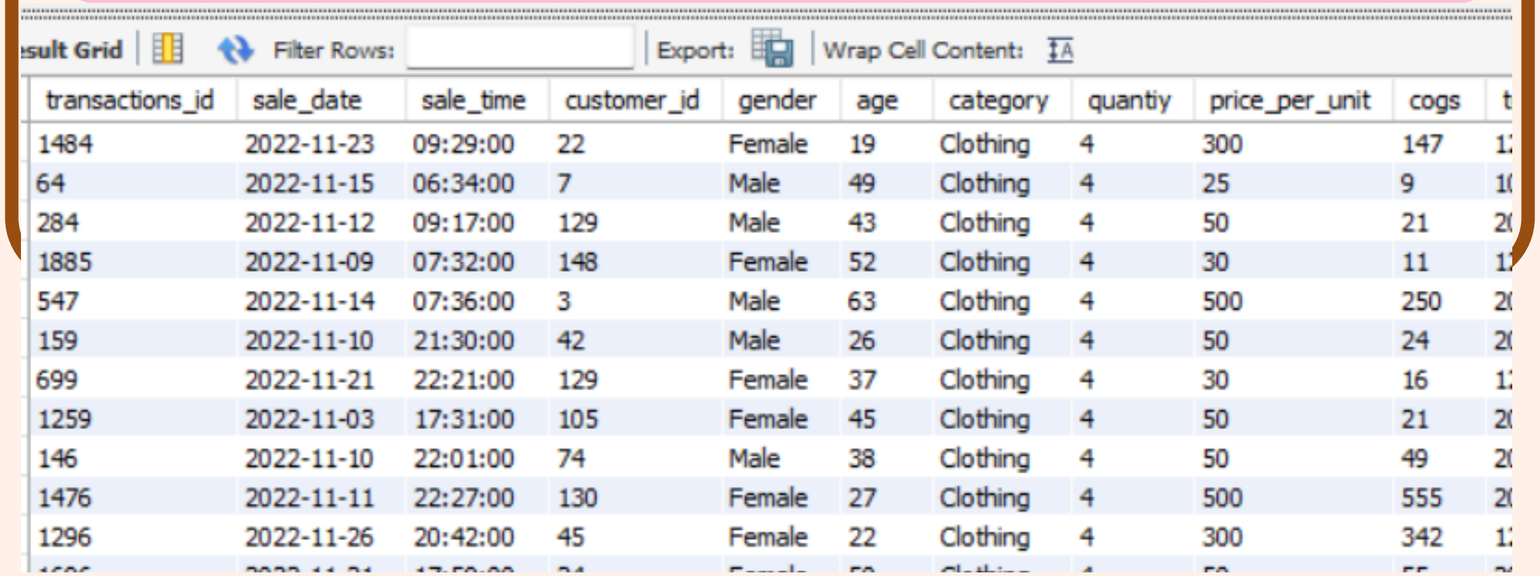
Question -2

Write a Query to retrive all transections where the category is "clothing" and the quantity sold is more than 10 in the month of nov-22

SQL Query

```
SELECT * FROM SALES
WHERE CATEGORY = 'CLOTHING'
  AND QUANTIY >= 4
  AND DATE_FORMAT(SALE_DATE, '%Y-%M') = '2022-11';
```

Output



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

transactions_id	sale_date	sale_time	customer_id	gender	age	category	quantiy	price_per_unit	cogs	t
1484	2022-11-23	09:29:00	22	Female	19	Clothing	4	300	147	1
64	2022-11-15	06:34:00	7	Male	49	Clothing	4	25	9	1(
284	2022-11-12	09:17:00	129	Male	43	Clothing	4	50	21	2(
1885	2022-11-09	07:32:00	148	Female	52	Clothing	4	30	11	1
547	2022-11-14	07:36:00	3	Male	63	Clothing	4	500	250	2(
159	2022-11-10	21:30:00	42	Male	26	Clothing	4	50	24	2(
699	2022-11-21	22:21:00	129	Female	37	Clothing	4	30	16	1
1259	2022-11-03	17:31:00	105	Female	45	Clothing	4	50	21	2(
146	2022-11-10	22:01:00	74	Male	38	Clothing	4	50	49	2(
1476	2022-11-11	22:27:00	130	Female	27	Clothing	4	500	555	2(
1296	2022-11-26	20:42:00	45	Female	22	Clothing	4	300	342	1

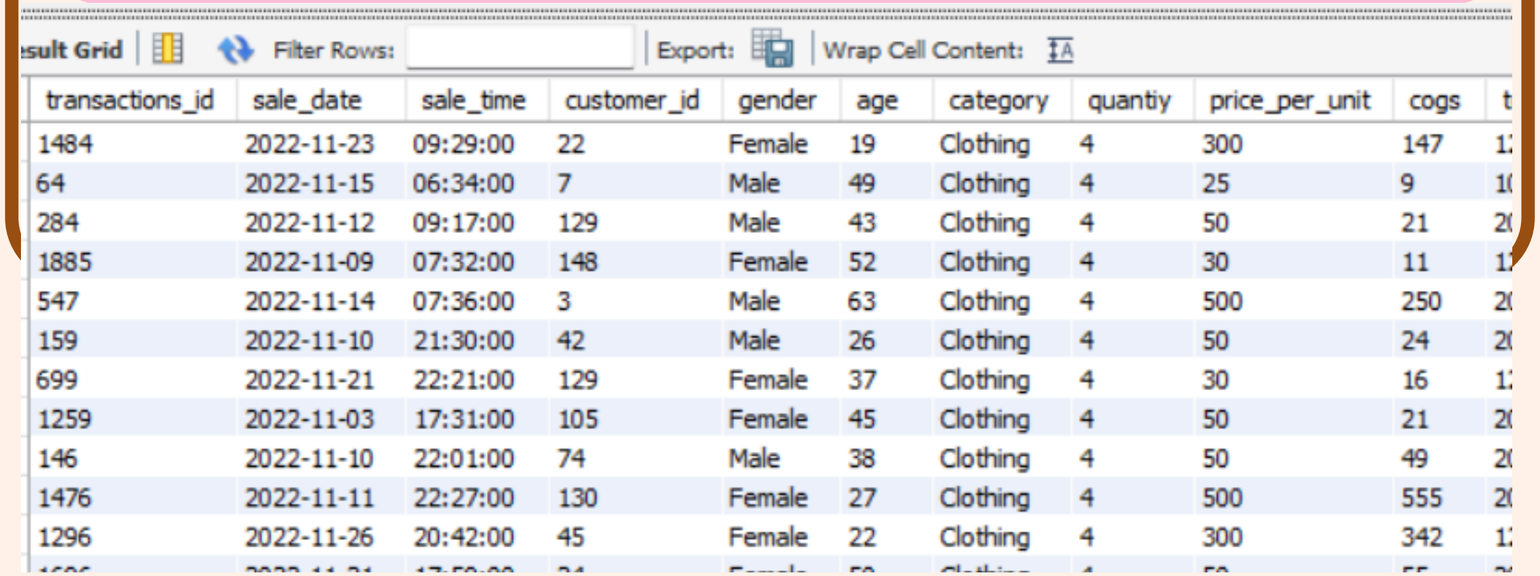
Question -3

Write a SQL Query to calculate total sales in each catergory

SQL Query

```
SELECT  CATEGORY,
SUM(TOTAL_SALE) AS NET_SALE,
COUNT(*) AS TOTAL_ORDERS FROM SALES
GROUP BY 1;;
```

Output



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

transactions_id	sale_date	sale_time	customer_id	gender	age	category	quantiy	price_per_unit	cogs	t
1484	2022-11-23	09:29:00	22	Female	19	Clothing	4	300	147	1
64	2022-11-15	06:34:00	7	Male	49	Clothing	4	25	9	1
284	2022-11-12	09:17:00	129	Male	43	Clothing	4	50	21	2
1885	2022-11-09	07:32:00	148	Female	52	Clothing	4	30	11	1
547	2022-11-14	07:36:00	3	Male	63	Clothing	4	500	250	2
159	2022-11-10	21:30:00	42	Male	26	Clothing	4	50	24	2
699	2022-11-21	22:21:00	129	Female	37	Clothing	4	30	16	1
1259	2022-11-03	17:31:00	105	Female	45	Clothing	4	50	21	2
146	2022-11-10	22:01:00	74	Male	38	Clothing	4	50	49	2
1476	2022-11-11	22:27:00	130	Female	27	Clothing	4	500	555	2
1296	2022-11-26	20:42:00	45	Female	22	Clothing	4	300	342	1

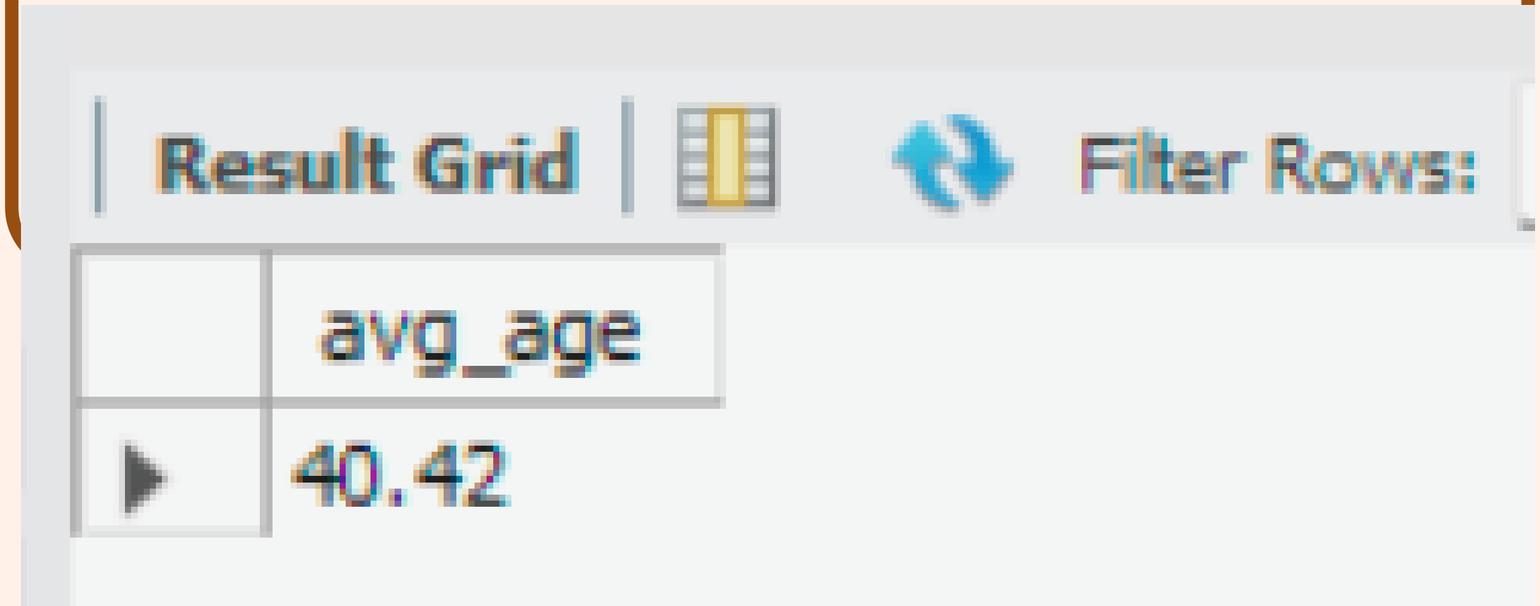
Question -4

Write a SQL Query to find the Average age of customers who purchased items from the "Beauty" Category.

SQL Query

```
SELECT ROUND(AVG(AGE),2) AS AVG_AGE
FROM SALES
WHERE CATEGORY ='BEAUTY';
```

Output



Question -5

Write a SQL query to find all transections where the total_sale > 1000

SQL Query

```
SELECT * FROM SALES
WHERE TOTAL_SALE > 1000;
```

Output

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

transactions_id	sale_date	sale_time	customer_id	gender	age	category	quantiy	price_per_unit	cogs
522	2022-07-09	11:00:00	52	Male	46	Beauty	3	500	145
559	2022-12-12	10:48:00	5	Female	40	Clothing	4	300	84
1522	2022-11-14	08:35:00	48	Male	46	Beauty	3	500	235
1559	2022-08-20	07:40:00	49	Female	40	Clothing	4	300	144
421	2022-04-08	08:43:00	66	Female	37	Clothing	3	500	235
1421	2022-01-17	07:07:00	59	Female	37	Clothing	3	500	185
484	2022-03-13	07:52:00	135	Female	19	Clothing	4	300	75
1484	2022-11-23	09:29:00	22	Female	19	Clothing	4	300	147
15	2022-07-01	11:50:00	75	Female	42	Electronics	4	500	210
743	2022-08-07	07:54:00	55	Female	34	Beauty	4	500	260
1015	2022-03-09	11:53:00	94	Female	42	Electronics	4	500	200
1743	2022-10-26	09:37:00	47	Female	34	Beauty	4	500	250
742	2022-03-19	06:08:00	37	Female	38	Electronics	4	500	195
1742	2022-11-22	08:25:00	18	Female	38	Electronics	4	500	220

Question -6

Write a SQL Query to find the total number of transections (transection_ID) made by each gender in each category.

SQL Query

```
SELECT CATEGORY,GENDER,COUNT(*) AS TOTAL_TRANS
FROM SALES
GROUP BY CATEGORY, GENDER
ORDER BY 1;
```

Output

category	gender	total_trans
Beauty	Female	330
Beauty	Male	281
Clothing	Female	347
Clothing	Male	351

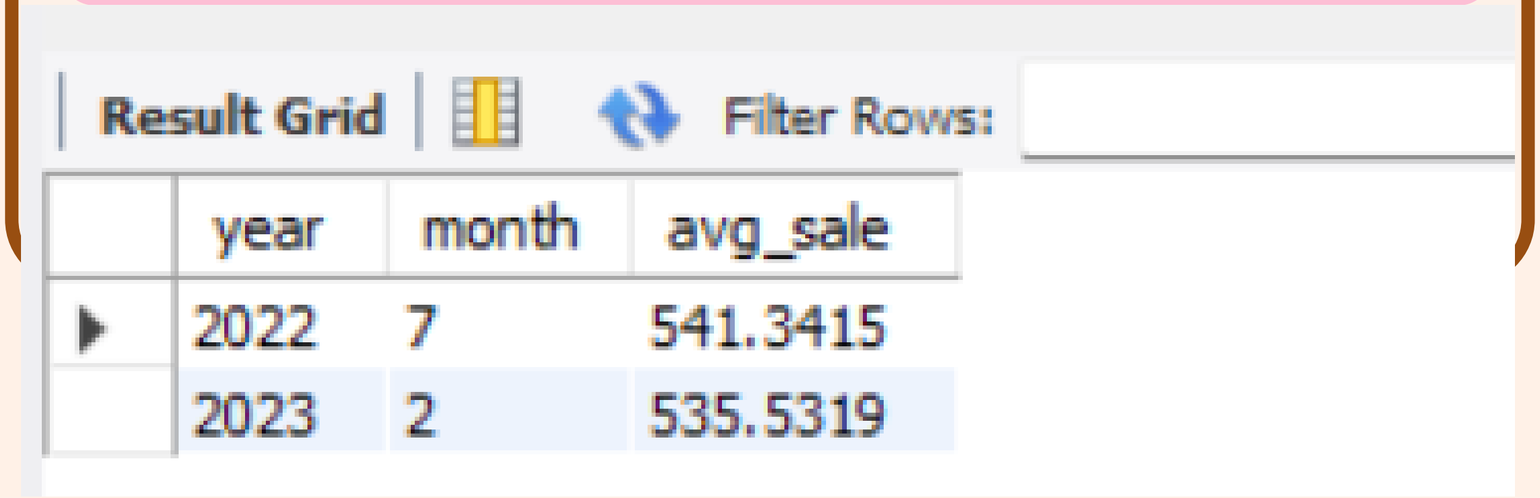
Question -7

Write a SQL query to calculate the average sale for each month . find out best selling month in each year.

SQL Query

```
SELECT year,month,avg_sale
FROM(SELECT  YEAR(sale_date) AS year,
      MONTH(sale_date) AS month,
      AVG(total_sale) AS avg_sale,
      RANK() OVER (PARTITION BY YEAR(sale_date) ORDER BY AVG(total_sale) DESC) AS r FROM sales
   GROUP BY
      YEAR(sale_date), MONTH(sale_date)
) AS t1
WHERE r=1;
```

Output



year	month	avg_sale
2022	7	541.3415
2023	2	535.5319

Question -8

Write a SQL Query to find the top 5 customers based on the highest total sales

SQL Query

```
SELECT
customer_id,
SUM(total_sale) as total_sales
FROM sales
GROUP BY customer_id
ORDER BY total_sales DESC
LIMIT 5;
```

Output

Result Grid | Filter Rows:

customer_id	total_sales
3	38440
1	30750
5	30405
2	25295

Question -9

Write a SQL Query to find the number of unique customers who purchased items from each category

SQL Query

```
SELECT
category,
COUNT(DISTINCT customer_id) AS Uniques_customers
FROM sales
GROUP BY category;
```

Output

Result Grid | Filter Rows:

category	Uniques_customers
Beauty	141
Clothing	149
Electronics	144

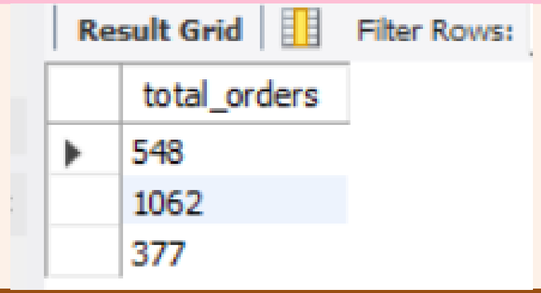
Question -10

Write a SQL query to create each shift and number of orders (Example Morning <=12 & 17, Evening>17

SQL Query

```
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 "Afternoon"
ELSE "Everything" END as shift
FROM sales
)
SELECT
COUNT(*) As total_orders
FROM Hourly_Sale
GROUP BY shift;
```

Output



Thank you!