Submission by: Stuti Sanghavi
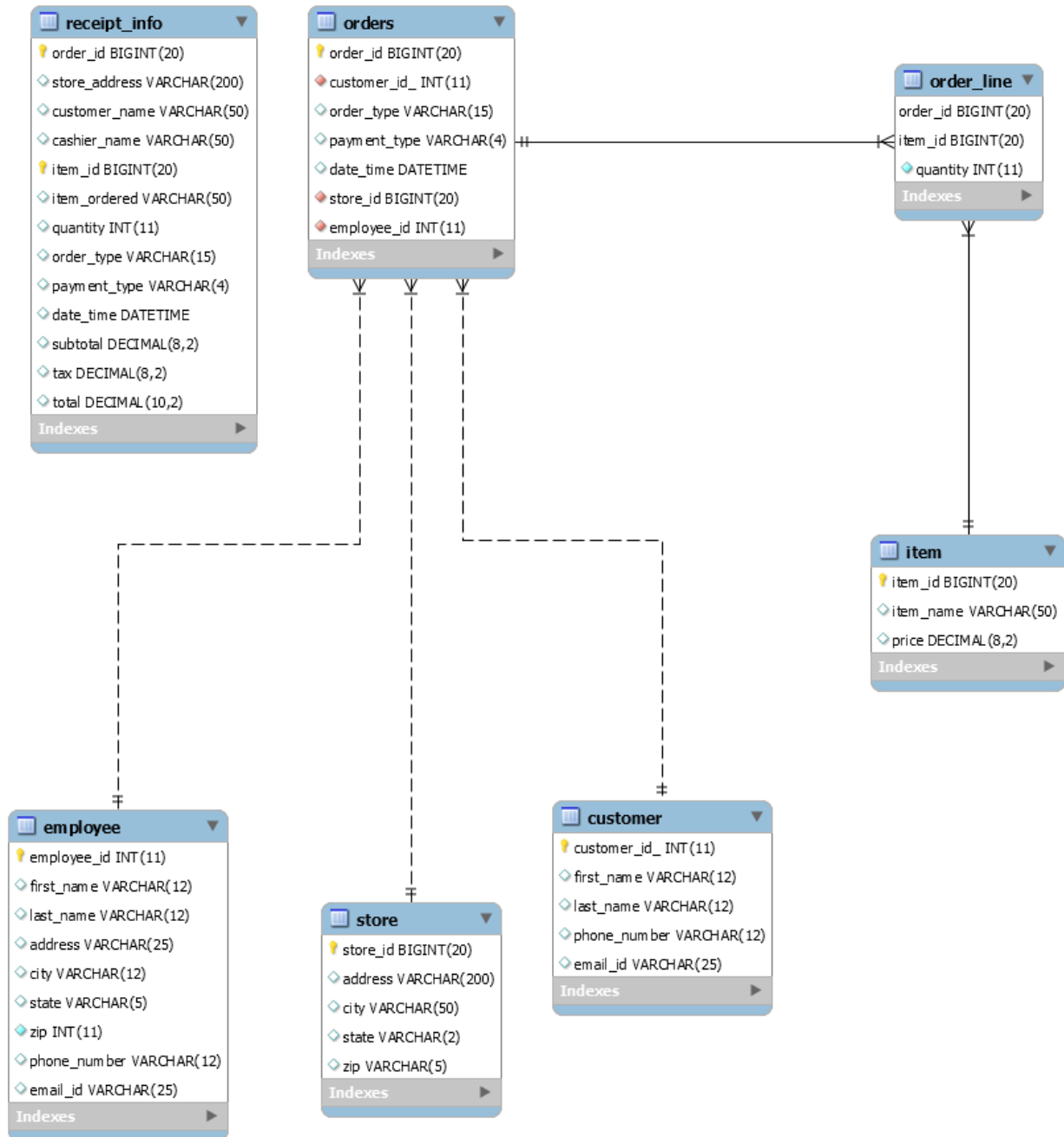
Student ID: 00001587699

SQL JOINS AND SUBQUERIES ASSIGNMENT FOR CHIPOTLE DATA

_Please Note: Attaching a copy of the EER diagram to help understand the model better. Receipt_info is the denormalized table, and the remaining tables are all normalized tables._

receipt_info
- order_id BIGINT(20)
- store_address VARCHAR(200)
- customer_name VARCHAR(50)
- cashier_name VARCHAR(50)
- item_id BIGINT(20)
- item_ordered VARCHAR(50)
- quantity INT(11)
- order_type VARCHAR(15)
- payment_type VARCHAR(4)
- date_time DATETIME
- subtotal DECIMAL(8,2)
- tax DECIMAL(8,2)
- total DECIMAL(10,2)
- Indexes

orders
- order_id BIGINT(20)
- customer_id_ INT(11)
- order_type VARCHAR(15)
- payment_type VARCHAR(4)
- date_time DATETIME
- store_id BIGINT(20)
- employee_id INT(11)
- Indexes

order_line
- order_id BIGINT(20)
- item_id BIGINT(20)
- quantity INT(11)
- Indexes

item
- item_id BIGINT(20)
- item_name VARCHAR(50)
- price DECIMAL(8,2)
- Indexes

employee
- employee_id INT(11)
- first_name VARCHAR(12)
- last_name VARCHAR(12)
- address VARCHAR(25)
- city VARCHAR(12)
- state VARCHAR(5)
- zip INT(11)
- phone_number VARCHAR(12)
- email_id VARCHAR(25)
- Indexes

store
- store_id BIGINT(20)
- address VARCHAR(200)
- city VARCHAR(50)
- state VARCHAR(2)
- zip VARCHAR(5)
- Indexes

customer
- customer_id_ INT(11)
- first_name VARCHAR(12)
- last_name VARCHAR(12)
- phone_number VARCHAR(12)
- email_id VARCHAR(25)
- Indexes

A total of 14 business questions were answered as follows:

*The following business questions are answered using Joins and Subqueries (from this assignment):*

1. *What is the average order size per order? (Subquery)*

2. *Least priced item in the menu?*

3. *What is the total revenue generated by month?*

4. *What is the average revenue generated per order?*

5. *What is the average number of orders in a day?*

6. *Top 5 customers by revenue*

7. *Number of customers by each store?*

8. *What is business hour of the day by number of transactions? (Without joins and subqueries, as a part of the previous assignment)*

The following business questions are answered without using Joins and Subqueries (from previous assignment):

9. *How many customers did each Kristina and Mike serve? (Employee who served more customers)*

10. *What percentage of orders out of the total orders are dine-in?*

11. *Payments made by cash vs card?*

12. *Which item sells the most?*

13. *Find the total number of customers served*

14. *The number of orders by day*

Q1: What is the average order size per order? (Subquery)

```sql
1  -- Q1: What is the average order size per order? (Subquery)
2
3  SELECT ROUND(AVG(order_size),2) AS Order_Average
4    FROM
5    (SELECT order_id, SUM(quantity) AS Order_Size
6    FROM order_line
7    GROUP BY order_id);
```

Query Result | Script Output | DBMS Output | Explain Plan | Autotrace | SQL H

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	order_average
1	1.55

Q2: Least priced item in the menu?

```sql
9   -- Q2: Least priced item in the menu? (Subqueries)
10  SELECT Item_Name, Price
11  FROM Item
12  WHERE price IN (select min(price) FROM item);
```

Query Result | Script Output | DBMS Output | Explain Plan | A

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	item_name	price
1	Chips	2.95

Q3: What is the total revenue generated by month?

```
13
14  -- Q3: What is the total revenue generated by month?
15  SELECT to_char(o.date_time,'Month') Month, SUM(ol.quantity * i.price) AS Total_revenue
16  FROM orders o INNER JOIN order_line ol
17  ON o.order_id = ol.order_id
18  INNER JOIN item i ON ol.item_id = i.item_id
19  GROUP BY to_char(o.date_time,'Month')
20  ORDER BY 2 DESC;
```

Query Result   Script Output   DBMS Output   Explain Plan   Autotrace   SQL History

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	month	total_revenue
1	January	135.15

Q4: What is the average revenue generated per order?

```
21
22  -- Q4: What is the average revenue generated per order?
23  SELECT ROUND(AVG(Sum_Revenue),2) AS Average_Revenue FROM
24  (SELECT ol.order_id , (SUM(ol.quantity * i.price)) AS Sum_Revenue
25  FROM order_line ol INNER JOIN item i
26  ON ol.item_id = i.item_id
27  GROUP BY ol.order_id
28  ORDER BY 1 DESC);
```

Query Result   Script Output   DBMS Output   Explain Plan   Autotrace   SQL

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	average_revenue
1	12.29

Q5: What is the average number of orders in a day?

```
30  -- Q5: What is the average number of orders in a day?
31
32  SELECT ROUND(AVG(daily_orders),2) AS Average_number_of_orders
33  FROM
34  (SELECT to_char(date_time, 'MM.DD.YY') order_date, COUNT(*) AS daily_orders
35  FROM orders
36  GROUP BY to_char(date_time, 'MM.DD.YY')
37  ORDER BY 1 ASC);
```

Query Result | Script Output | DBMS Output | Explain Plan | Autotrace | SQL History

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	average_number_of_o
1	2.75

Q6: Top 5 customers by revenue

```
-- Q6: Top 5 customers by revenue

SELECT CONCAT(CONCAT(first_name, ''), last_name) AS Customer_Name, SUM(quantity * price) AS Revenue
FROM customer c
LEFT JOIN orders o ON c.customer_id_ = o.customer_id_
LEFT JOIN order_line ol ON o.order_id = ol.order_id
LEFT JOIN  item i ON ol.item_id = i.item_id
GROUP BY CONCAT(CONCAT(first_name, ''), last_name)
ORDER BY 2 DESC
FETCH FIRST 5 ROWS ONLY;
```

	customer_name	revenue
1	OliverMontoya	23.85
2	JenetteShort	15.9
3	FlynnMcneil	15.9
4	RiaRoy	15.9
5	AnthonyBennett	15.9

Q7: Number of customers by each store?

```
50
51  -- Q7: Number of customers by each store?
52  SELECT Address, City, COUNT(o.customer_id_) AS Number_of_customers
53  FROM store s
54  LEFT JOIN orders o ON s.store_id = o.store_id
55  GROUP BY Address,City
56  ORDER BY 3 DESC;
57
```

Query Result   Script Output   DBMS Output   Explain Plan   Autotrace   SQL History

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	address	city	number_of_customers
1	2760 Mowry Avenue	Fremont	11
2	5565 Auto Mall Pkwy	Newark	0

Q8: What is business hour of the day by number of transactions? (for determining busy hours) – Not used Joins or Subquery, but answering a business question

```
58  -- Q8: What is business hour of the day by number of transactions? (for determining busy hours)
59
60  SELECT extract(HOUR from cast(date_time as timestamp)) Hours_in_24_hour_format,
61         Count(order_id) Number_of_transactions
62  FROM orders o
63  GROUP BY extract(HOUR from cast(date_time as timestamp))
64  ORDER BY 2 DESC;
```

Query Result   Script Output   DBMS Output   Explain Plan   Autotrace   SQL History

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	hours_in_24_hour_format	number_of_transactions
1	17	3
2	19	3
3	16	2
4	18	1