COS20015 – Fundamentals of Data Management

Distinction Report

Syed Muhammad Hassaan bin Ghayas 101231186

Introduction

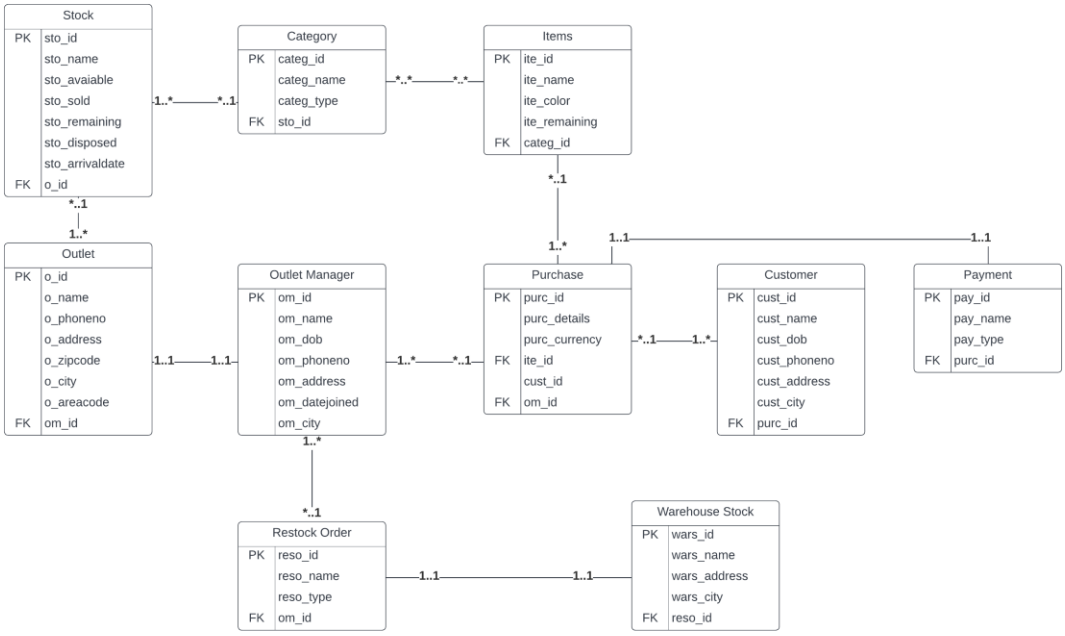
J. is a rich, elegant, and stylish fashion retail brand that deals exclusively in traditional ensembles. It regularly adds seasonal clothing, machine prints, intricate embroidery, and modern cuts to its already extensive collection. J. has quickly expanded its reach throughout Pakistan and internationally. Its 50+ outlets in Pakistan alone are proof of the company's efforts to become the country's largest fashion retail brand. Best of all, each location has a fresh and inspiring atmosphere in which customers can shop in comfort. J. also sells a wide variety of perfumes that can be worn by anyone. They range from light fresh flowery fragrances to heavy musk fragrances, all of which are extremely delectable and pleasant.

Overview of the System and its Business rules.

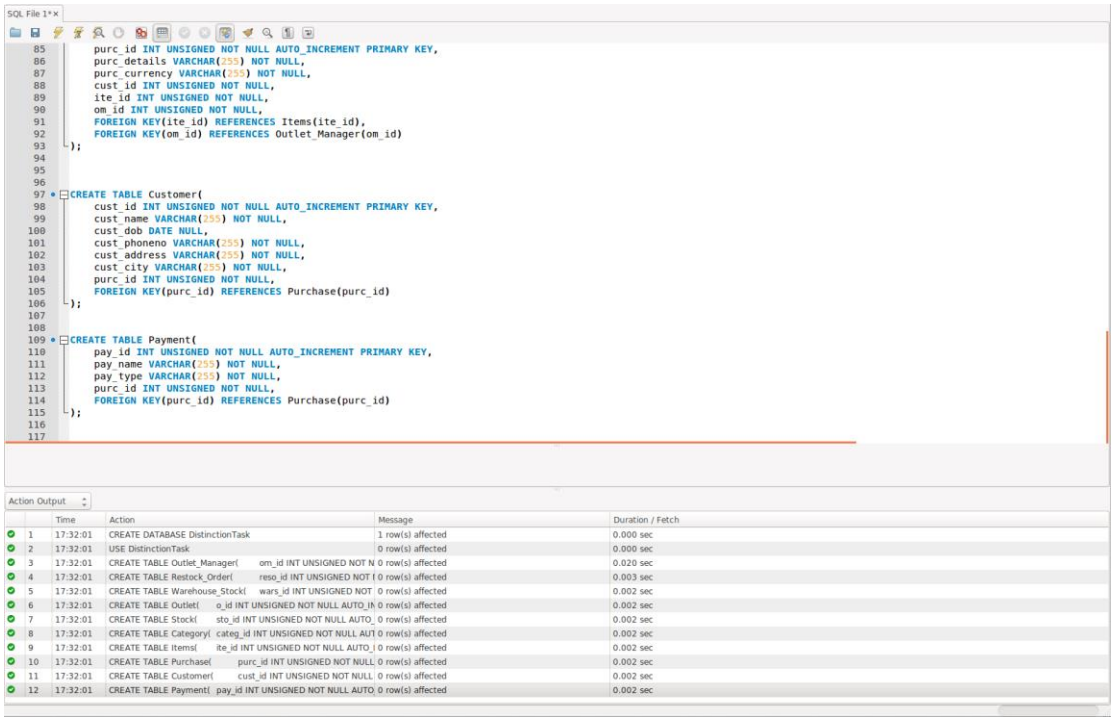
Without an effective IT infrastructure, no business can survive. One of the secrets to our success is our effective IT network. It is critical in providing us with information about what is going on both inside and outside the organisation. The Marketing and Sales Team is made up of experienced professionals who are well-versed in the market in which they operate. They are also well-informed about their surroundings and are constantly striving to keep the brand's market leadership position by collaborating with other departments. Finance The Finance Team makes all financial decisions, and their responsibility is to ensure that the company's financial statements are accurate and transparent.

J. brand has various outlets throughout Pakistan, with an Outlet Manager overseeing all purchases and stock records. When a customer makes a purchase, the database is divided into ten entities, each of which represents a purpose. The business model can be easily understood by looking at the ERD. When a purchase is made, the Outlet Manager and payment retrieve data and look for the item's category stock to see if it is available. If it is not available, the Outlet Manager sends a restock order to the Warehouse stocks so that all items can be delivered to the desired Outlet and business can run smoothly.

Entity Relationship diagram



Create Database:

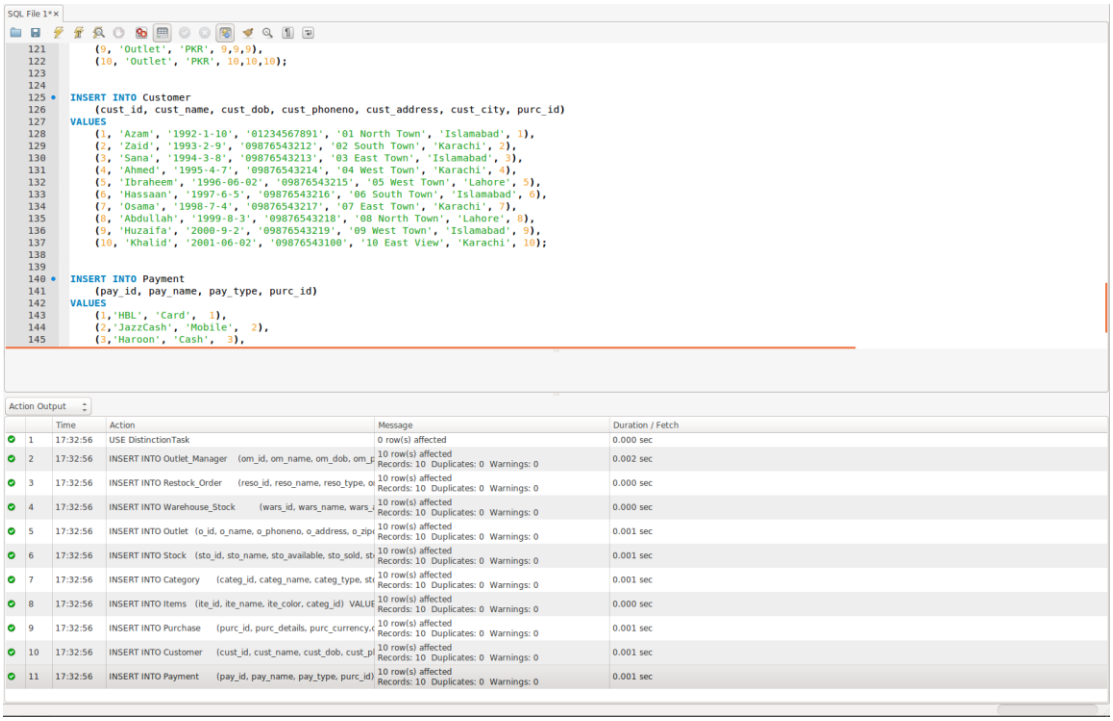


```
    purc_id INT UNSIGNED NOT NULL AUTO_INCREMENT PRIMARY KEY,
    purc_details VARCHAR(255) NOT NULL,
    purc_currency VARCHAR(255) NOT NULL,
    cust_id INT UNSIGNED NOT NULL,
    ite_id INT UNSIGNED NOT NULL,
    om_id INT UNSIGNED NOT NULL,
    FOREIGN KEY(ite_id) REFERENCES Items(ite_id),
    FOREIGN KEY(om_id) REFERENCES Outlet_Manager(om_id)
);


CREATE TABLE Customer(
    cust_id INT UNSIGNED NOT NULL AUTO_INCREMENT PRIMARY KEY,
    cust_name VARCHAR(255) NOT NULL,
    cust_dob DATE NULL,
    cust_phoneno VARCHAR(255) NOT NULL,
    cust_address VARCHAR(255) NOT NULL,
    cust_city VARCHAR(255) NOT NULL,
    purc_id INT UNSIGNED NOT NULL,
    FOREIGN KEY(purc_id) REFERENCES Purchase(purc_id)
);

CREATE TABLE Payment(
    pay_id INT UNSIGNED NOT NULL AUTO_INCREMENT PRIMARY KEY,
    pay_name VARCHAR(255) NOT NULL,
    pay_type VARCHAR(255) NOT NULL,
    purc_id INT UNSIGNED NOT NULL,
    FOREIGN KEY(purc_id) REFERENCES Purchase(purc_id)
);
```

Action Output

	Time	Action	Message	Duration / Fetch
1	17:32:01	CREATE DATABASE DistinctionTask	1 row(s) affected	0.000 sec
2	17:32:01	USE DistinctionTask	0 row(s) affected	0.000 sec
3	17:32:01	CREATE TABLE Outlet_Manager(om_id INT UNSIGNED NOT N	0 row(s) affected	0.020 sec
4	17:32:01	CREATE TABLE Restock_Order(reso_id INT UNSIGNED NOT I	0 row(s) affected	0.003 sec
5	17:32:01	CREATE TABLE Warehouse_Stock(wars_id INT UNSIGNED NOT	0 row(s) affected	0.002 sec
6	17:32:01	CREATE TABLE Outlet(o_id INT UNSIGNED NOT NULL AUTO_IN	0 row(s) affected	0.002 sec
7	17:32:01	CREATE TABLE Stock(sto_id INT UNSIGNED NOT NULL AUTO_	0 row(s) affected	0.002 sec
8	17:32:01	CREATE TABLE Category(categ_id INT UNSIGNED NOT NULL AUT	0 row(s) affected	0.002 sec
9	17:32:01	CREATE TABLE Items(ite_id INT UNSIGNED NOT NULL AUTO_I	0 row(s) affected	0.002 sec
10	17:32:01	CREATE TABLE Purchase(purc_id INT UNSIGNED NOT NULL	0 row(s) affected	0.002 sec
11	17:32:01	CREATE TABLE Customer(cust_id INT UNSIGNED NOT NULL	0 row(s) affected	0.002 sec
12	17:32:01	CREATE TABLE Payment(pay_id INT UNSIGNED NOT NULL AUTO	0 row(s) affected	0.002 sec

Insert Rows:



```
SQL File 1*

    (9, 'Outlet', 'PKR', 9,9,9),
    (10, 'Outlet', 'PKR', 10,10,10);


INSERT INTO Customer
    (cust_id, cust_name, cust_dob, cust_phoneno, cust_address, cust_city, purc_id)
VALUES
    (1, 'Azam', '1992-1-10', '01234567891', '01 North Town', 'Islamabad', 1),
    (2, 'Zaid', '1993-2-9', '09876543212', '02 South Town', 'Karachi', 2),
    (3, 'Sana', '1994-3-8', '09876543213', '03 East Town', 'Islamabad', 3),
    (4, 'Ahmed', '1995-4-7', '09876543214', '04 West Town', 'Karachi', 4),
    (5, 'Ibraheem', '1996-06-02', '09876543215', '05 West Town', 'Lahore', 5),
    (6, 'Hassaan', '1997-6-5', '09876543216', '06 South Town', 'Islamabad', 6),
    (7, 'Osama', '1998-7-4', '09876543217', '07 East Town', 'Karachi', 7),
    (8, 'Abdullah', '1999-8-3', '09876543218', '08 North Town', 'Lahore', 8),
    (9, 'Huzaifa', '2000-9-2', '09876543219', '09 West Town', 'Islamabad', 9),
    (10, 'Khalid', '2001-06-02', '09876543100', '10 East View', 'Karachi', 10);


INSERT INTO Payment
    (pay_id, pay_name, pay_type, purc_id)
VALUES
    (1,'HBL', 'Card',  1),
    (2,'JazzCash', 'Mobile',  2),
    (3,'Haroon', 'Cash',  3),
```

Action Output

	Time	Action	Message	Duration / Fetch
1	17:32:56	USE DistinctionTask	0 row(s) affected	0.000 sec
2	17:32:56	INSERT INTO Outlet_Manager (om_id, om_name, om_dob, om_p	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.002 sec
3	17:32:56	INSERT INTO Restock_Order (reso_id, reso_name, reso_type, o	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
4	17:32:56	INSERT INTO Warehouse_Stock (wars_id, wars_name, wars_	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
5	17:32:56	INSERT INTO Outlet (o_id, o_name, o_phoneno, o_address, o_zip	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec
6	17:32:56	INSERT INTO Stock (sto_id, sto_name, sto_available, sto_sold, st	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec
7	17:32:56	INSERT INTO Category (categ_id, categ_name, categ_type, st	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec
8	17:32:56	INSERT INTO Items (ite_id, ite_name, ite_color, categ_id) VALUE	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.000 sec
9	17:32:56	INSERT INTO Purchase (purc_id, purc_details, purc_currency,(	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec
10	17:32:56	INSERT INTO Customer (cust_id, cust_name, cust_dob, cust_pl	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec
11	17:32:56	INSERT INTO Payment (pay_id, pay_name, pay_type, purc_id)	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.001 sec

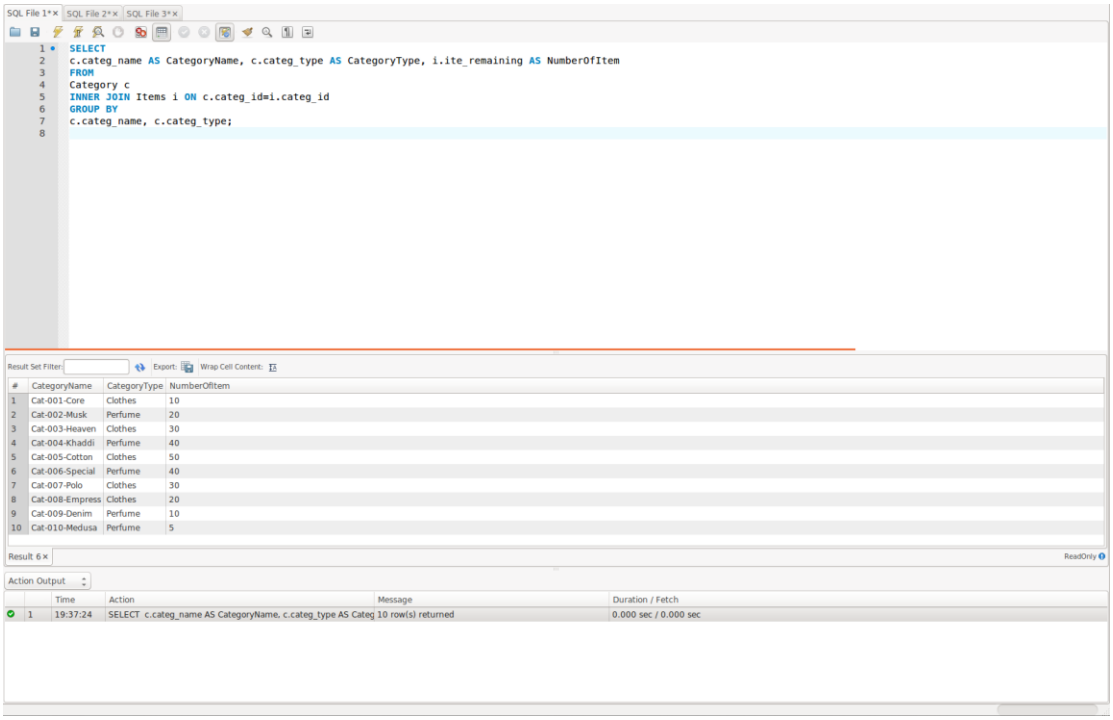
Use Cases

1. It determines how many items are available in each category or how many items are remaining.

   SCRIPT:

```
SELECT
c.categ_name AS CategoryName, c.categ_type AS CategoryType,
i.ite_remaining AS NumberOfItem
FROM
Category c
INNER JOIN Items i ON c.categ_id=i.categ_id
GROUP BY
c.categ_name, c.categ_type;
```

   SCREENSHOT:

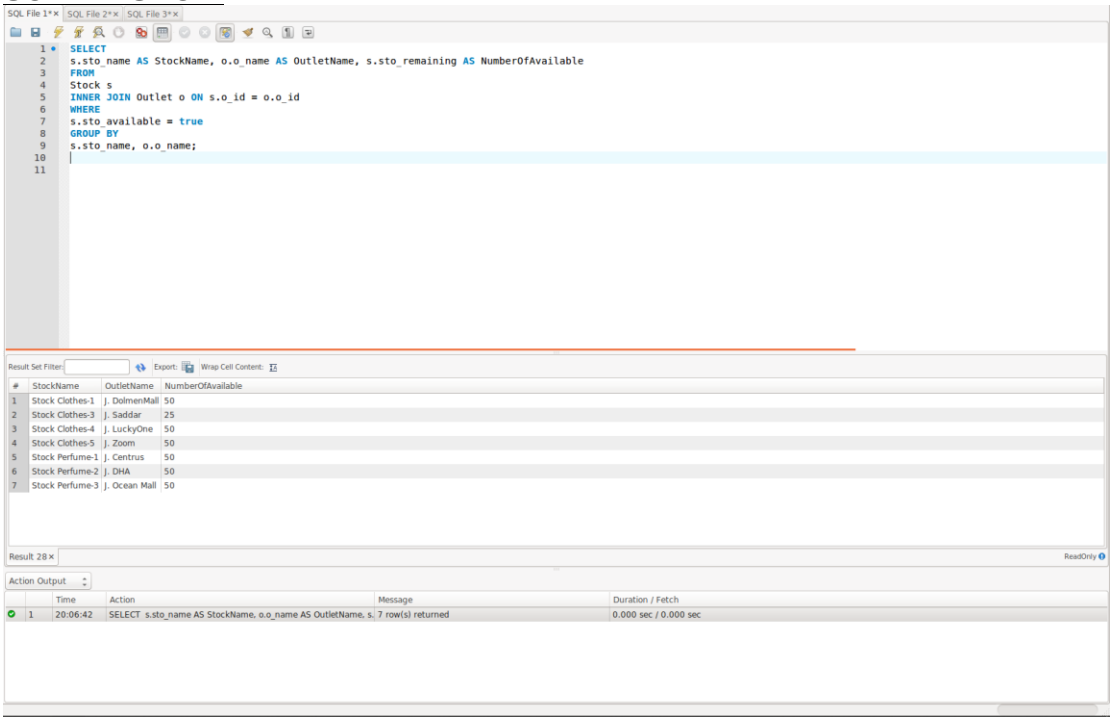


2. Get the number of available stocks according to the Outlets, with StockName and OutletName.

SCRIPT:

```
SELECT
s.sto_name AS StockName, o.o_name AS OutletName, s.sto_remaining AS
NumberOfAvailable
FROM
Stock s
INNER JOIN Outlet o ON s.o_id = o.o_id
WHERE
s.sto_available = true
GROUP BY
s.sto_name, o.o_name;
```

SCREENSHOT:

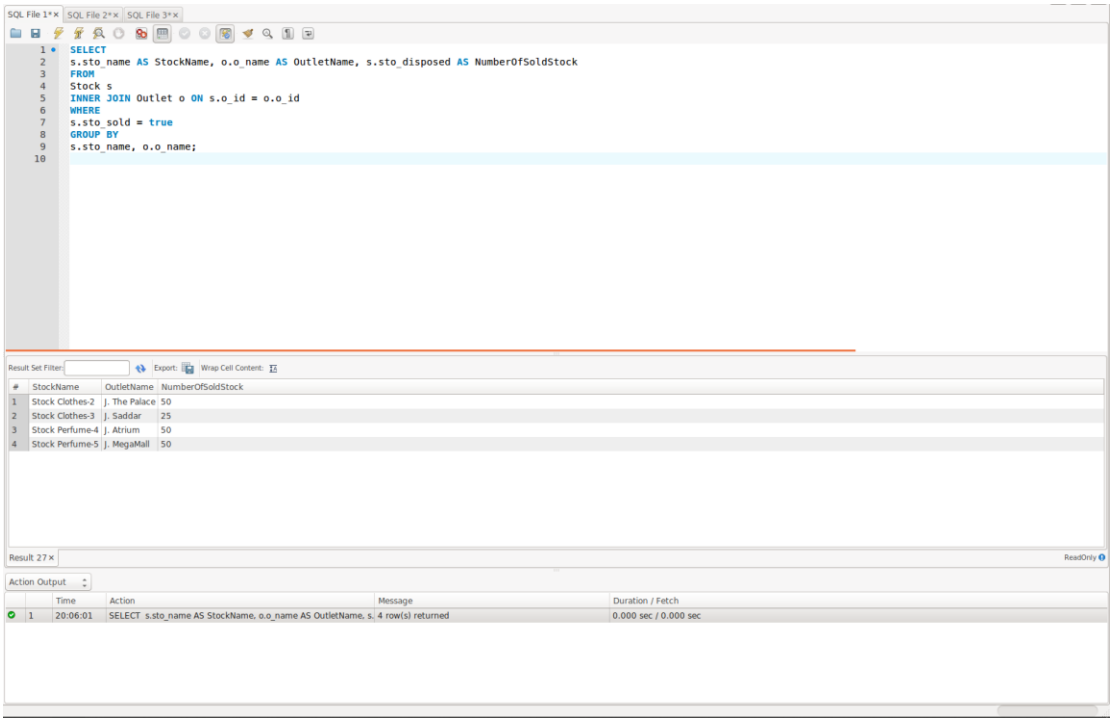


3. Get the number of the sold stock from the outlet with Outlet Name and Stock Name

SCRIPT:

```
SELECT
s.sto_name AS StockName, o.o_name AS OutletName, s.sto_disposed AS NumberOfSoldStock
FROM
Stock s
INNER JOIN Outlet o ON s.o_id = o.o_id
WHERE
s.sto_sold = true
GROUP BY
s.sto_name, o.o_name;
```

SCREENSHOT:

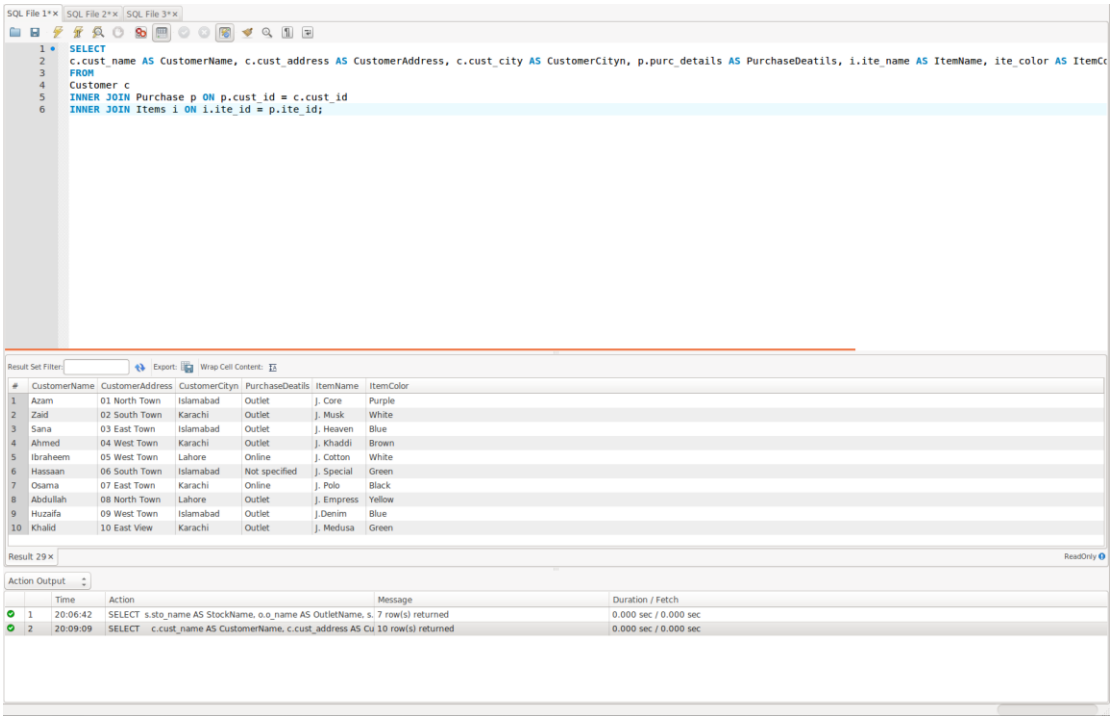


4. List of customers who have bought items with item name, city, address and item colour. To deliver the product and rider can go and deliver the item with the respective colour and to accurate address.

SCRIPT:

```
SELECT
c.cust_name AS CustomerName, c.cust_address AS CustomerAddress, c.cust_city AS CustomerCityn, p.purc_details AS PurchaseDeatils, i.ite_name AS ItemName, ite_color AS ItemColor
FROM
Customer c
INNER JOIN Purchase p ON p.cust_id = c.cust_id
INNER JOIN Items i ON i.ite_id = p.ite_id;
```

SCREENSHOT:

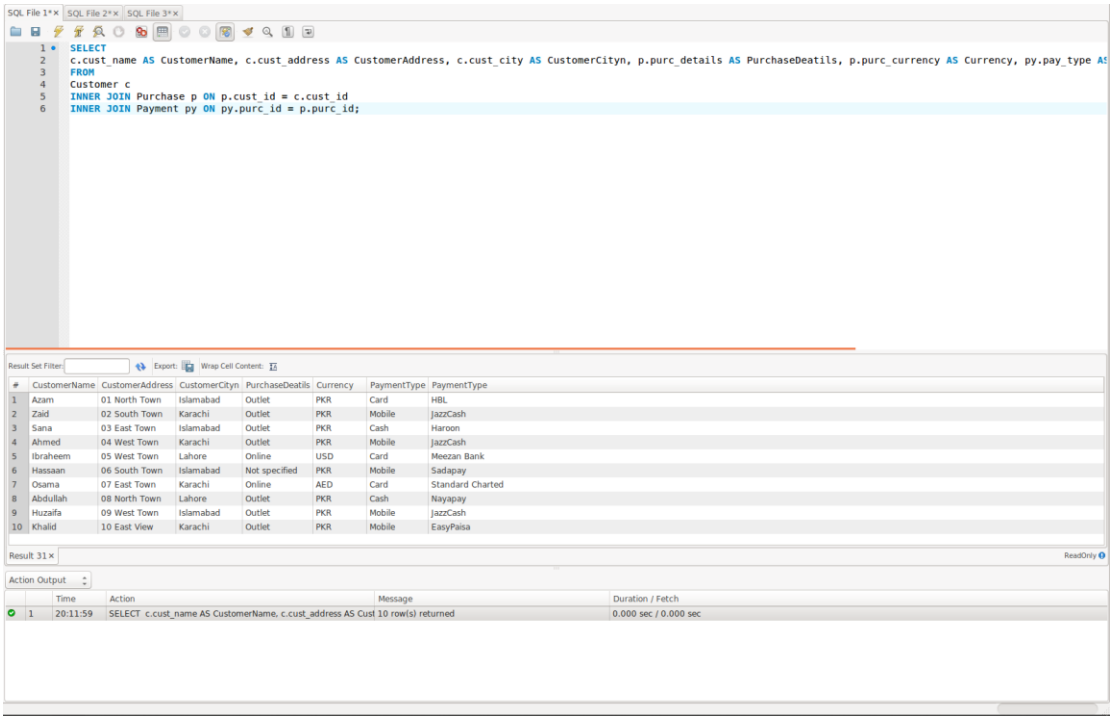


5. This case is used to track client payment data with currency payment method and payment type.

SCRIPT:

```
SELECT
c.cust_name AS CustomerName, c.cust_address AS CustomerAddress, c.cust_city AS CustomerCityn, p.purc_details AS PurchaseDeatils, p.purc_currency AS Currency, py.pay_type AS PaymentType, py.pay_name AS PaymentType
FROM
Customer c
INNER JOIN Purchase p ON p.cust_id = c.cust_id
INNER JOIN Payment py ON py.purc_id = p.purc_id;
```

SCREENSHOT:

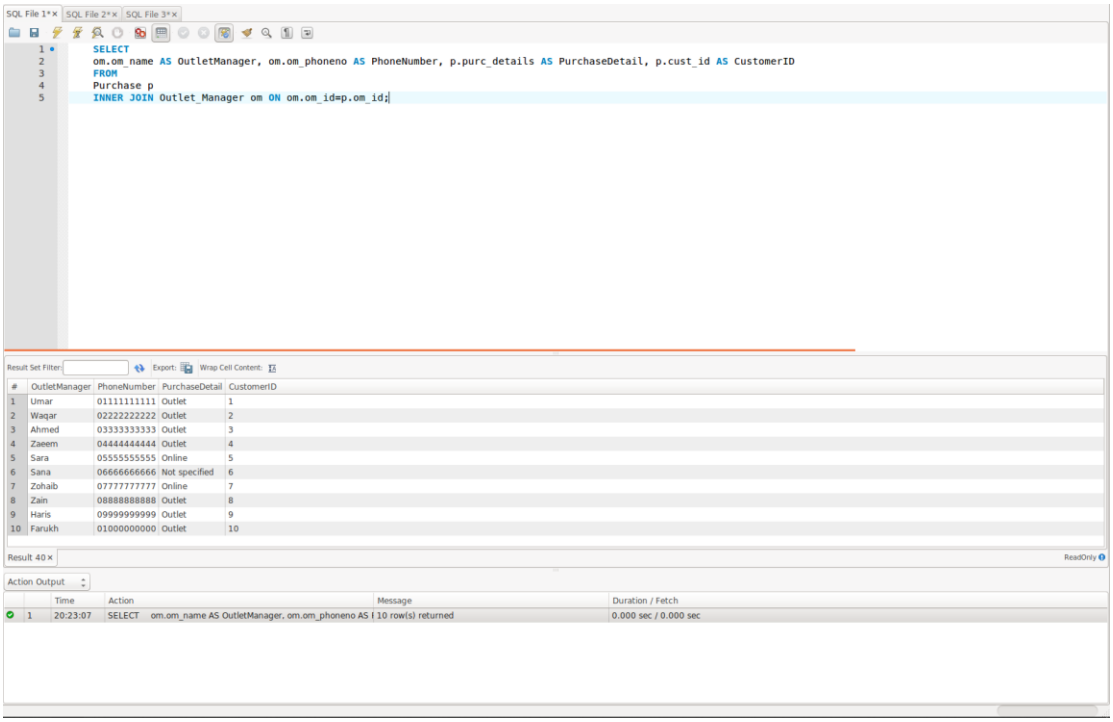


6. Get Outlet Manager name and His number who made sales to Customer with customer's PurchaseDetail and CustomerID.

SCRIPT:

```
SELECT
om.om_name AS OutletManager, om.om_phoneno AS PhoneNumber, p.purc_details AS PurchaseDetail, p.cust_id AS CustomerID
FROM
Purchase p
INNER JOIN Outlet_Manager om ON om.om_id=p.om_id;
```

SCREENSHOT:

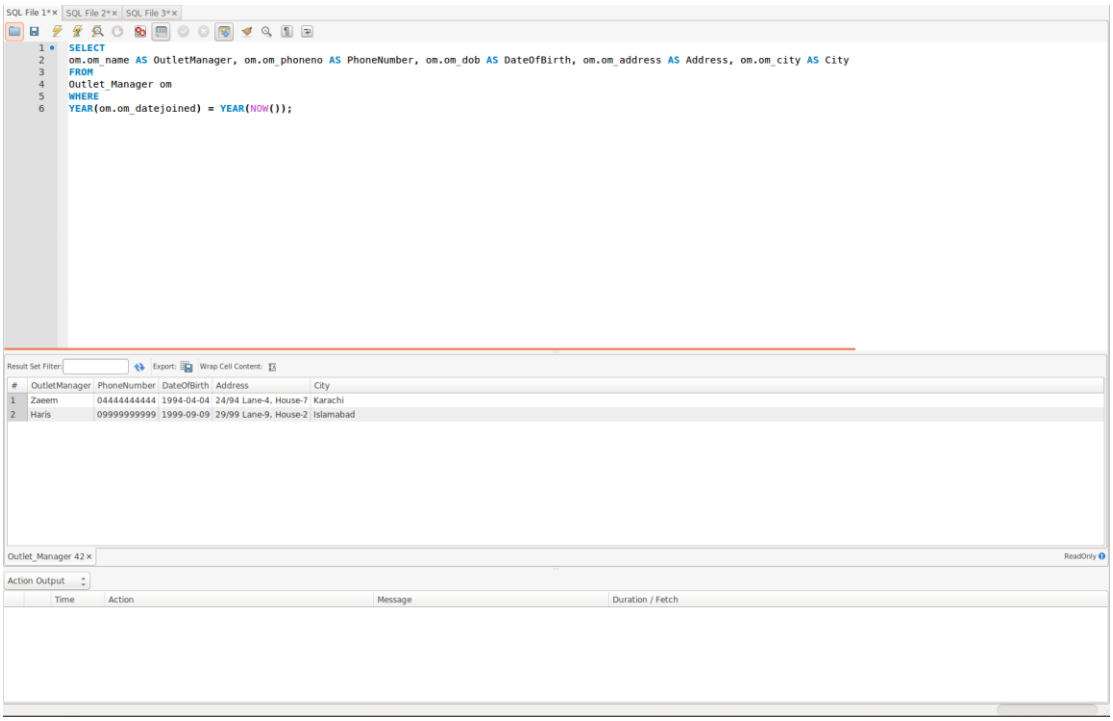


7. Get the list of Outlet Manager details who joined the Outlet that specific year with his Personal details such as PhoneNumber, DOB, Address and City.

SCRIPT:

```
SELECT
om.om_name AS OutletManager, om.om_phoneno AS PhoneNumber, om.om_dob AS DateOfBirth, om.om_address AS Address, om.om_city AS City
FROM
Outlet_Manager om
WHERE
YEAR(om.om_datejoined) = YEAR(NOW());
```

SCREENSHOT:

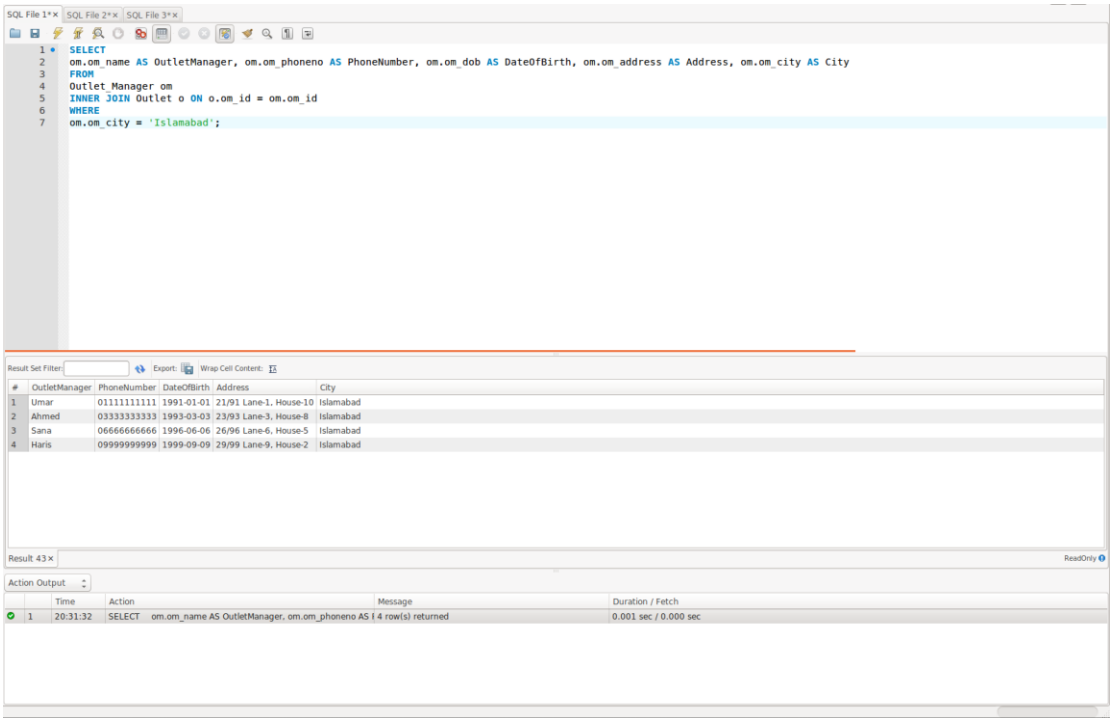


8. This report shows Outlet Managers who live in Islamabad and who operate that outlet with his details like NAME, PhoneNumer, DOB, Address and City.

SCRIPT:

```
SELECT
om.om_name AS OutletManager, om.om_phoneno AS PhoneNumber, om.om_dob AS DateOfBirth, om.om_address AS Address, om.om_city AS City
FROM
Outlet_Manager om
INNER JOIN Outlet o ON o.om_id = om.om_id
WHERE
om.om_city = 'Islamabad';
```

SCREENSHOT:

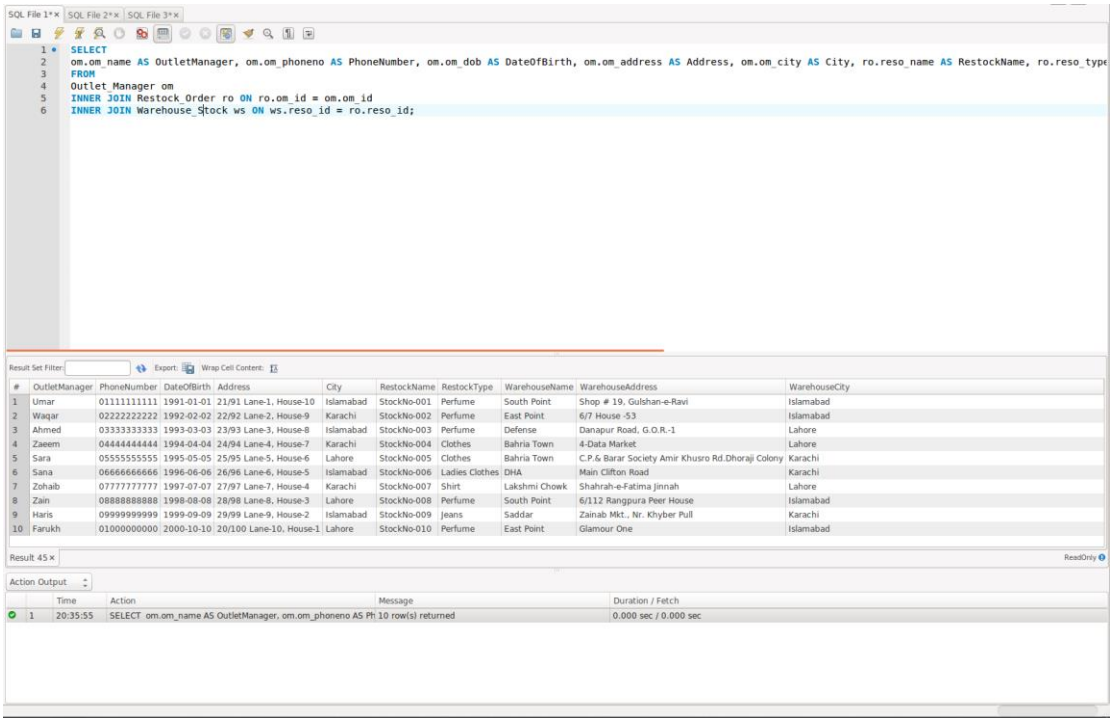


9. Get the all-outlet manager who are related with respective ReStock data and Warehouse with all the essential details.

SCRIPT:

```
SELECT
om.om_name AS OutletManager, om.om_phoneno AS PhoneNumber, om.om_dob AS DateOfBirth, om.om_address AS Address, om.om_city AS City, ro.reso_name AS RestockName, ro.reso_type AS RestockType, ws.wars_name AS WarehouseName, ws.wars_address AS WarehouseAddress, ws.wars_city WarehouseCity
FROM
Outlet_Manager om
INNER JOIN Restock_Order ro ON ro.om_id = om.om_id
INNER JOIN Warehouse_Stock ws ON ws.reso_id = ro.reso_id;
```

SCREENSHOT:



SQL File 1* | SQL File 2* | SQL File 3*

```
SELECT
om.om_name AS OutletManager, om.om_phoneno AS PhoneNumber, om.om_dob AS DateOfBirth, om.om_address AS Address, om.om_city AS City, ro.reso_name AS RestockName, ro.reso_type
FROM
Outlet_Manager om
INNER JOIN Restock_Order ro ON ro.om_id = om.om_id
INNER JOIN Warehouse_Stock ws ON ws.reso_id = ro.reso_id;
```

Result Set Filter: Export: Wrap Cell Content:

#	OutletManager	PhoneNumber	DateOfBirth	Address	City	RestockName	RestockType	WarehouseName	WarehouseAddress	WarehouseCity
1	Umar	01111111111	1991-01-01	21/91 Lane-1, House-10	Islamabad	StockNo-001	Perfume	South Point	Shop # 19, Gulshan-e-Ravi	Islamabad
2	Waqar	02222222222	1992-02-02	22/92 Lane-2, House-9	Karachi	StockNo-002	Perfume	East Point	6/7 House -53	Islamabad
3	Ahmed	03333333333	1993-03-03	23/93 Lane-3, House-8	Islamabad	StockNo-003	Perfume	Defense	Danapur Road, G.O.R.-1	Lahore
4	Zaeem	04444444444	1994-04-04	24/94 Lane-4, House-7	Karachi	StockNo-004	Clothes	Bahria Town	4-Data Market	Lahore
5	Sara	05555555555	1995-05-05	25/95 Lane-5, House-6	Lahore	StockNo-005	Clothes	Bahria Town	C.P.& Barar Society Amir Khusro Rd.Dhoraji Colony	Karachi
6	Sana	06666666666	1996-06-06	26/96 Lane-6, House-5	Islamabad	StockNo-006	Ladies Clothes	DHA	Main Clifton Road	Karachi
7	Zohaib	07777777777	1997-07-07	27/97 Lane-7, House-4	Karachi	StockNo-007	Shirt	Lakshmi Chowk	Shahrah-e-Fatima Jinnah	Lahore
8	Zain	08888888888	1998-08-08	28/98 Lane-8, House-3	Lahore	StockNo-008	Perfume	South Point	6/112 Rangpura Peer House	Islamabad
9	Haris	09999999999	1999-09-09	29/99 Lane-9, House-2	Islamabad	StockNo-009	Jeans	Saddar	Zainab Mkt., Nr. Khyber Pull	Karachi
10	Farukh	01000000000	2000-10-10	20/100 Lane-10, House-1	Lahore	StockNo-010	Perfume	East Point	Glamour One	Islamabad

Result 45 | ReadOnly

Action Output

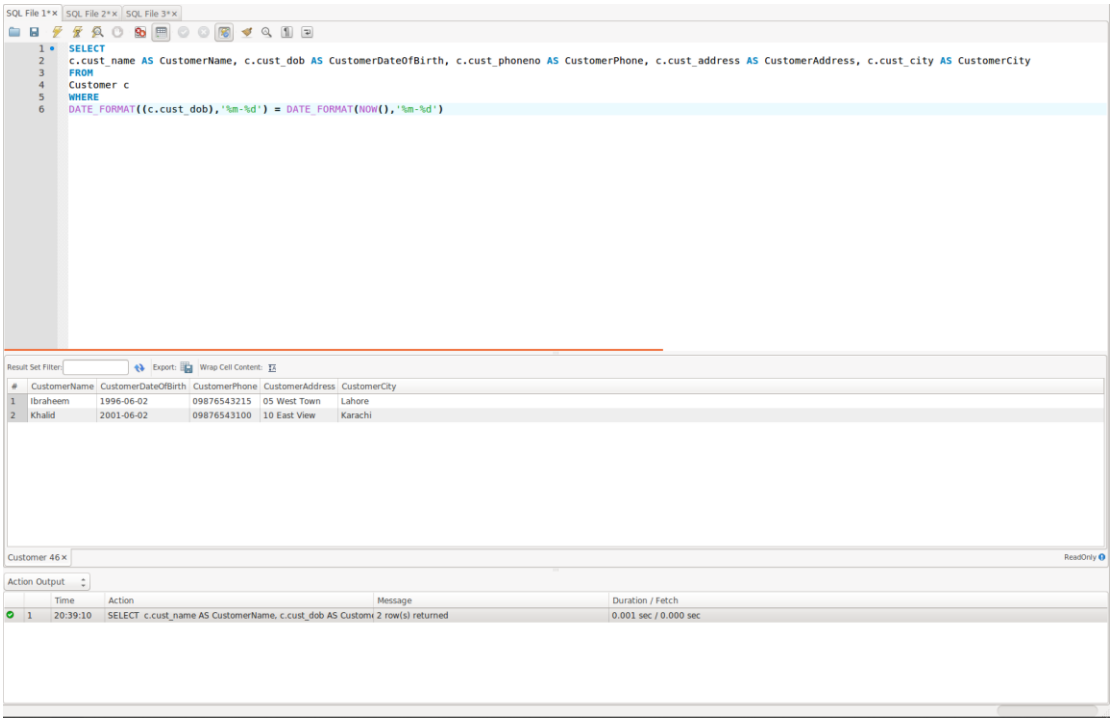
	Time	Action	Message	Duration / Fetch
1	20:35:55	SELECT om.om_name AS OutletManager, om.om_phoneno AS Ph	10 row(s) returned	0.000 sec / 0.000 sec

10. Get the list of customers who have birthday that particular date when data is retrieved (Today/Now).
    This is to offer Customer discount on their happiest day to make it even more better.

    SCRIPT:

```
SELECT
c.cust_name AS CustomerName, c.cust_dob AS CustomerDateOfBirth, c.cust_phoneno AS CustomerPhone, c.cust_address AS CustomerAddress, c.cust_city AS CustomerCity
FROM
Customer c
WHERE
DATE_FORMAT((c.cust_dob),'%m-%d') = DATE_FORMAT(NOW(),'%m-%d')
```

    SCREENSHOT:



Conclusion

This database is a prototype that the company may use. More items can be added to make it more detailed and interesting. This database best reflects the J. brand that I highlighted in my proposal. This database will assist the Company in extracting information more effectively by utilising the aforementioned scenarios.

This work gave me with all of the necessary information, and I am now able to enter and use cases to get data. This report could be improved by adding more entries to it; I met all of the requirements despite having an issue with my electricity; I could have made this report even better, but it is still meeting all of the standards for a Distinction. I wish I had more time to attempt the Higher Distinction task, But I did the great Job looking at the database and cases looking at the time period I invested in this Distinction task.