NORTH SOUTH UNIVERSITY

Department of Electrical & Computer Engineering

Project On

Course Code: *CSE311*
Course Title: *Database Management System*

Submitted by_

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Section	: 07
Project Topic	: ER Model (Inventory Management System)
Submission Date	: 29-05-2023

Submitted to_

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Introduction:

Inventory management is a critical aspect of any business that involves the tracking, organization and control of products and materials. It plays a crucial role in maintaining optimal stock levels. The Inventory Management System Database is designed to efficiently manage and track various aspects of inventory, including products, suppliers, categories, orders and order items of a company name EI Electronics. The Inventory Management System utilizes a relational database Design.

Structure:

The Database contains six main entities: Product, Stock, Supplier, Supplier Delivered, Supplier Delivered Item, Customer Order, Customer Order Item.

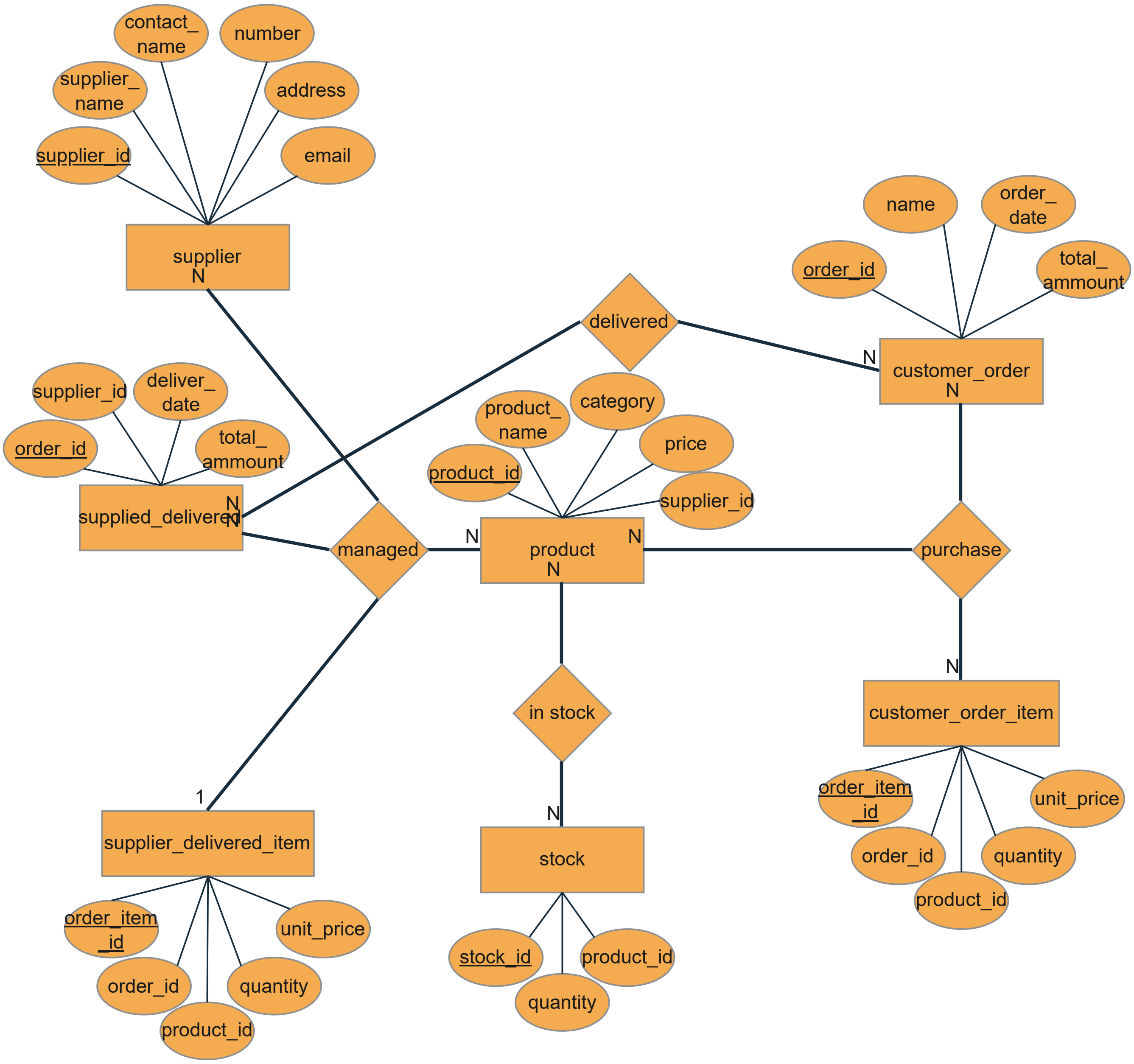
- Product: The Product entity stores individual products information's with attributes product id, product name, category, price, supplier id.
- Stock: This entity tracks the stock level of each product with stock id, product id and quantity.
- Supplier: This entity contains details about the suppliers including supplier id, supplier name, contact name, number, email, address.
- Supplier Delivered: It contains the order id, supplier id, deliver date and total amount of the order.
- Supplier Delivered Item: This entity contains the delivery item details including the order item id, order id, product id, quantity, unit price.
- Customer Order: This entity contains the customer details including customers order id, name, order date, total amount of the order.
- Customer Order Item: This entity contains the customer ordered items details which are the order item id, order id, product id, quantity, unit price.

Conclusion:

The development of an Inventory Management System crucial for effective inventory control, purchase order management and supplier information management. By implementing this information, the company will be able to improve the inventory efficiency and make informed decisions based on accurate and up-to-date information.

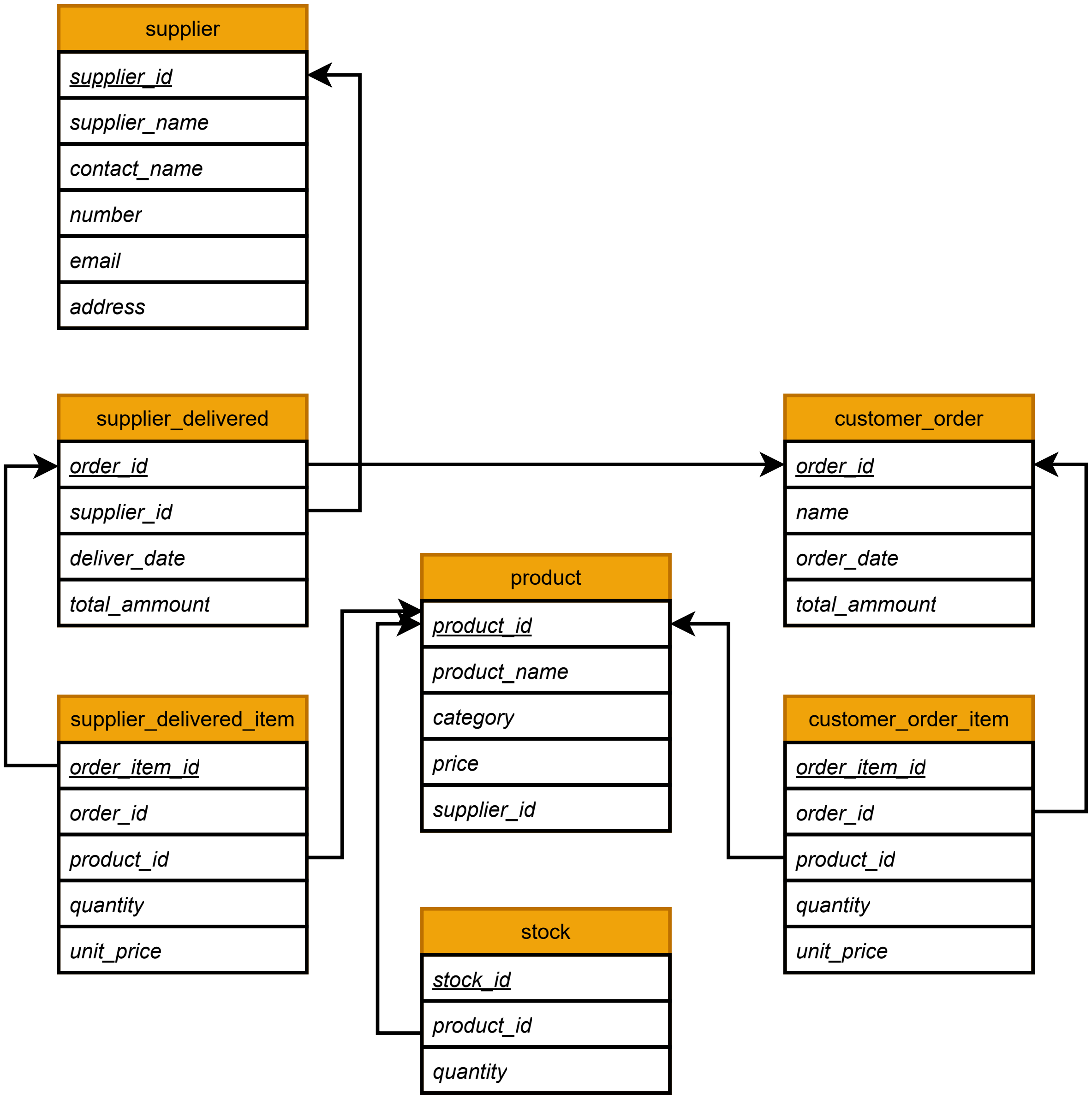
Inventory Management System

ER Diagram:



Inventory Management System

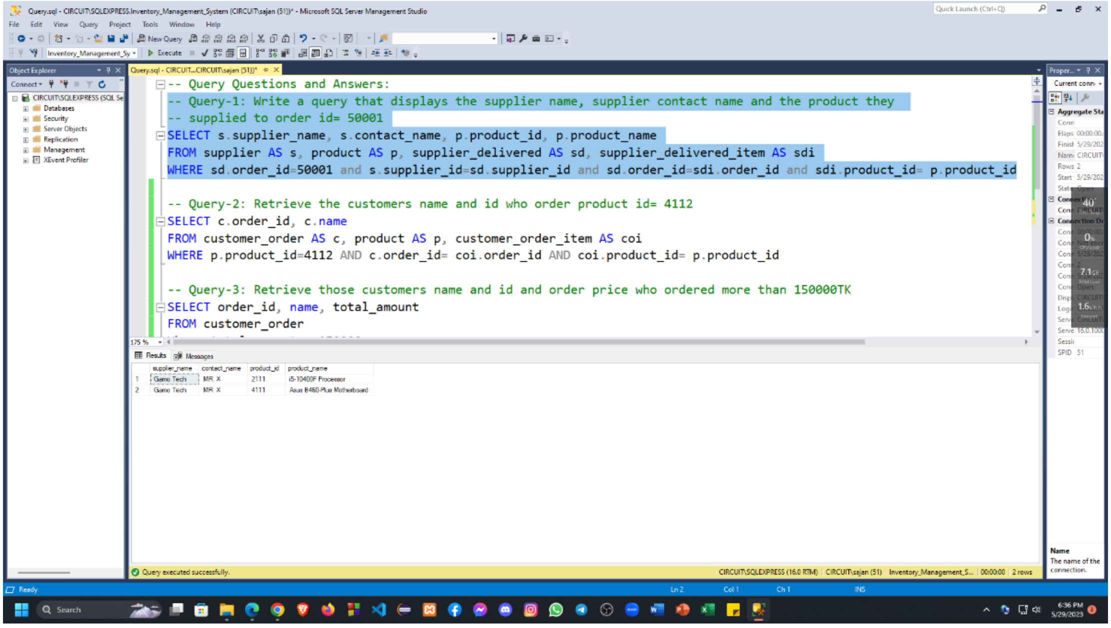
Schema Diagram:



Query Questions and Answers

```
### Query-1: Write a query that displays the supplier name, supplier contact name
and the product they supplied to order id= 50001
SELECT s.supplier_name, s.contact_name, p.product_id, p.product_name
FROM supplier AS s, product AS p, supplier_delivered AS sd,
supplier_delivered_item AS sdi
WHERE sd.order_id=50001 and s.supplier_id=sd.supplier_id and
sd.order_id=sdi.order_id and sdi.product_id= p.product_id
```

Screenshort:



```
-- Query Questions and Answers:
-- Query-1: Write a query that displays the supplier name, supplier contact name and the product they
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SELECT s.supplier_name, s.contact_name, p.product_id, p.product_name
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WHERE sd.order_id=50001 and s.supplier_id=sd.supplier_id and sd.order_id=sdi.order_id and sdi.product_id= p.product_id

-- Query-2: Retrieve the customers name and id who order product id= 4112
SELECT c.order_id, c.name
FROM customer_order AS c, product AS p, customer_order_item AS coi
WHERE p.product_id=4112 AND c.order_id= coi.order_id AND coi.product_id= p.product_id

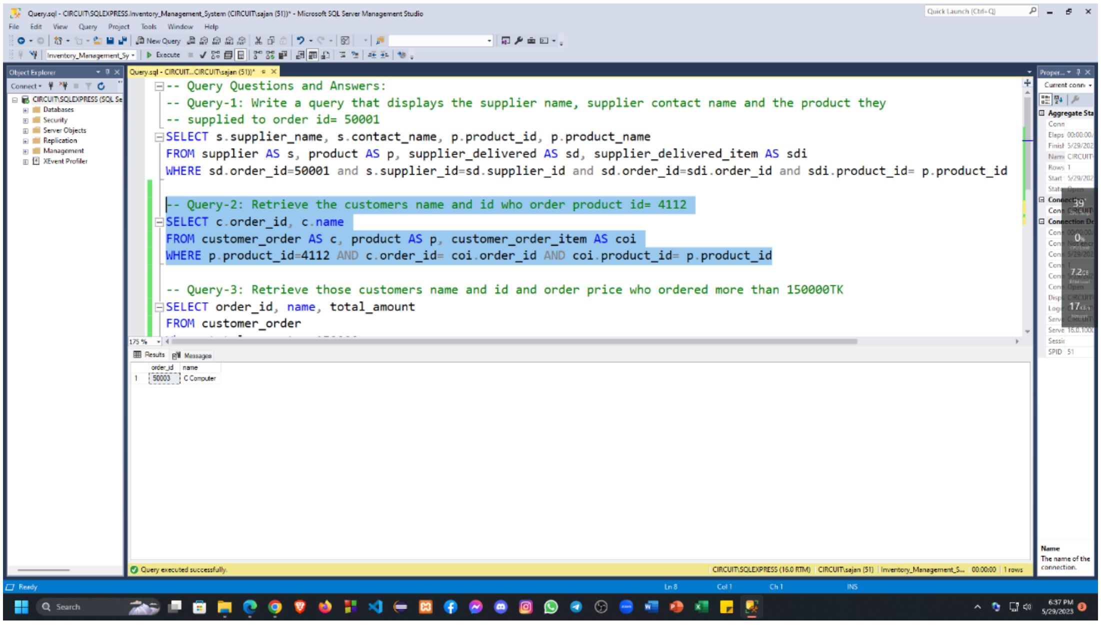
-- Query-3: Retrieve those customers name and id and order price who ordered more than 150000TK
SELECT order_id, name, total_amount
FROM customer_order
```

	supplier_name	contact_name	product_id	product_name
1	Gamo Tech	MR. X	2111	i5-10400F Processor
2	Gamo Tech	MR. X	4111	Asus B460-Plus Motherboard

Query executed successfully.

```
### Query-2: Retrieve the customers name and id who order product id= 4112
SELECT c.order_id, c.name
FROM customer_order AS c, product AS p, customer_order_item AS coi
WHERE p.product_id=4112 AND c.order_id= coi.order_id AND coi.product_id=
p.product_id
```

Screenshort:



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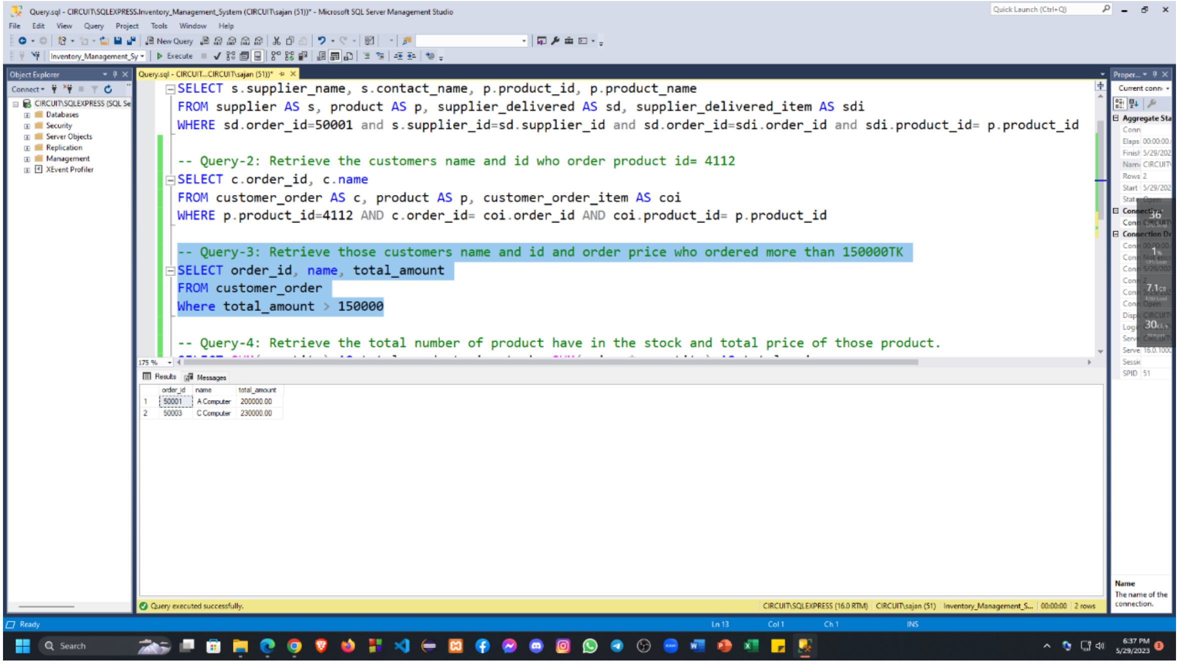
-- Query-3: Retrieve those customers name and id and order price who ordered more than 150000TK
SELECT order_id, name, total_amount
FROM customer_order
```

	order_id	name
1	50003	C Computer

Query executed successfully.

```
### Query-3: Retrieve those customers name and id and order price who ordered more than 150000TK
SELECT order_id, name, total_amount
FROM customer_order
Where total_amount > 150000
```

Screenshort:



Query.sql - CIRCUIT\SQLEXPRESS.Inventory_Management_System (CIRCUIT\sajan (51))* - Microsoft SQL Server Management Studio

```
SELECT s.supplier_name, s.contact_name, p.product_id, p.product_name
FROM supplier AS s, product AS p, supplier_delivered AS sd, supplier_delivered_item AS sdi
WHERE sd.order_id=50001 and s.supplier_id=sd.supplier_id and sd.order_id=sdi.order_id and sdi.product_id= p.product_id

-- Query-2: Retrieve the customers name and id who order product id= 4112
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-- Query-3: Retrieve those customers name and id and order price who ordered more than 150000TK
SELECT order_id, name, total_amount
FROM customer_order
Where total_amount > 150000

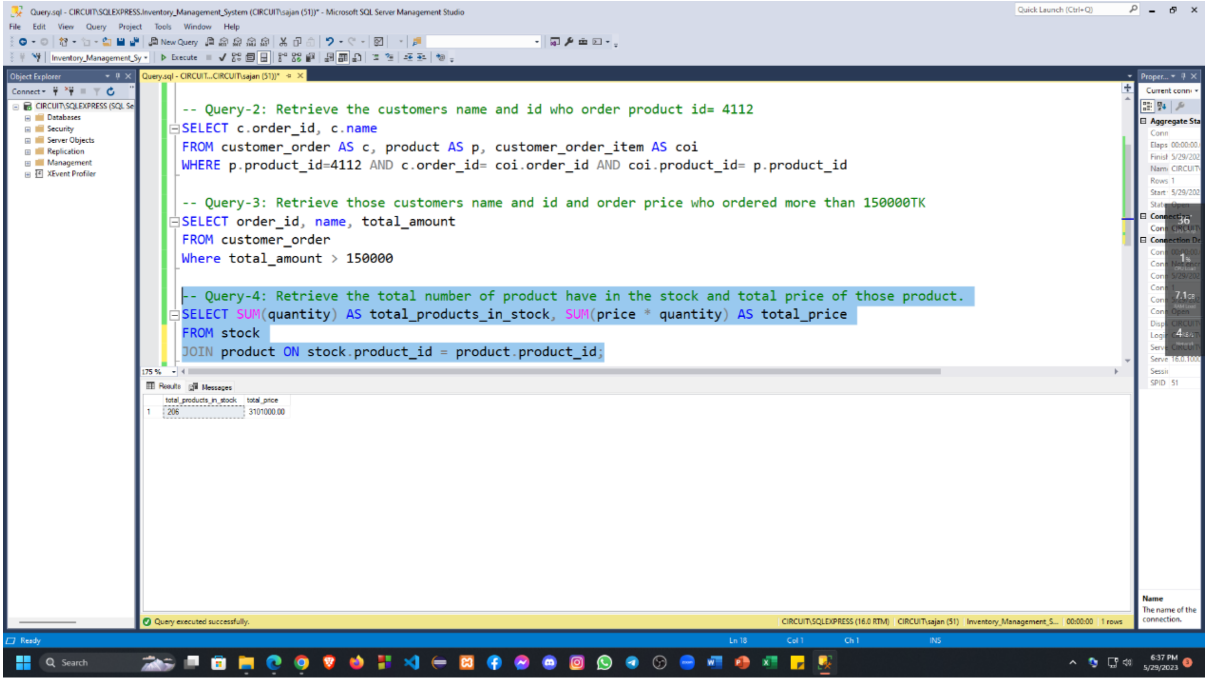
-- Query-4: Retrieve the total number of product have in the stock and total price of those product.
```

	order_id	name	total_amount
1	50001	A Computer	200000.00
2	50003	C Computer	230000.00

Query executed successfully. CIRCUIT\SQLEXPRESS (16.0 RTM) CIRCUIT\sajan (51) Inventory_Management_S... 00:00:00 2 rows

```
### Query-4: Retrieve the total number of product have in the stock and total price of those product.
SELECT SUM(quantity) AS total_products_in_stock, SUM(price * quantity) AS total_price
FROM stock
JOIN product ON stock.product_id = product.product_id;
```

Screenshort:



Query.sql - CIRCUIT\SQLEXPRESS.Inventory_Management_System (CIRCUIT\sajan (51))* - Microsoft SQL Server Management Studio

```
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-- Query-3: Retrieve those customers name and id and order price who ordered more than 150000TK
SELECT order_id, name, total_amount
FROM customer_order
Where total_amount > 150000

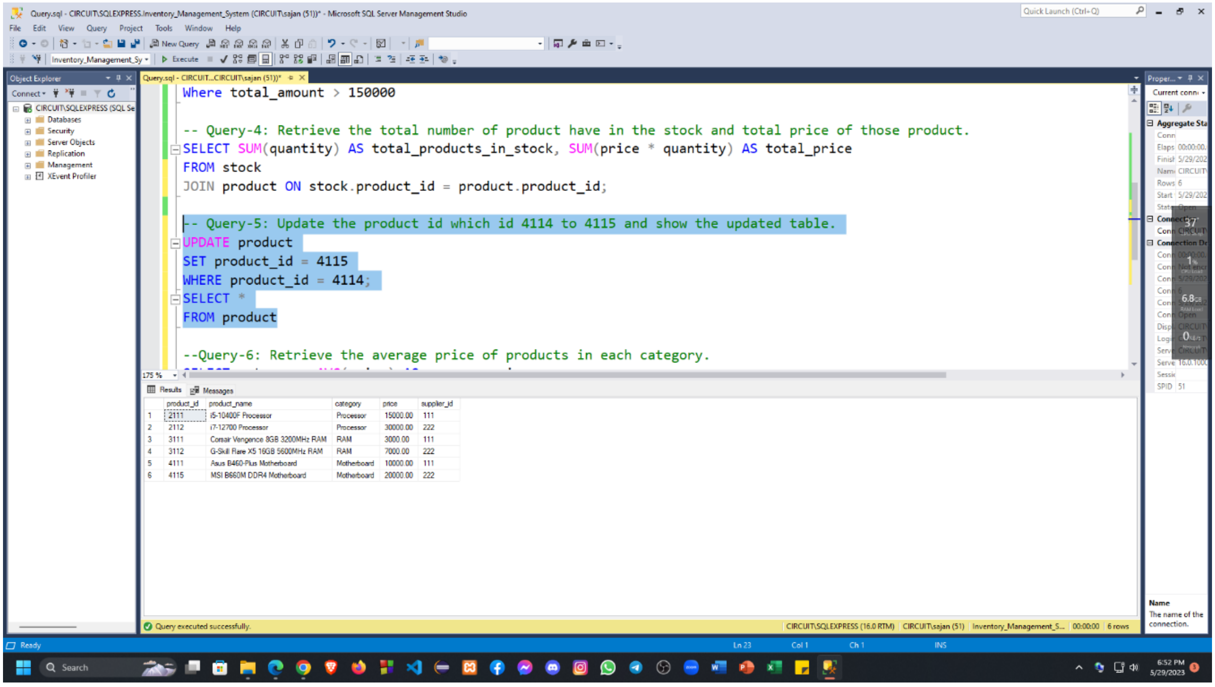
-- Query-4: Retrieve the total number of product have in the stock and total price of those product.
SELECT SUM(quantity) AS total_products_in_stock, SUM(price * quantity) AS total_price
FROM stock
JOIN product ON stock.product_id = product.product_id;
```

	total_products_in_stock	total_price
1	206	3101000.00

Query executed successfully. CIRCUIT\SQLEXPRESS (16.0 RTM) CIRCUIT\sajan (51) Inventory_Management_S... 00:00:00 1 rows

```
### Query-5: Update the product id which id 4114 to 4115 and show the updated
table.
UPDATE product
SET product_id = 4115
WHERE product_id = 4114;
SELECT *
FROM product
```

Screenshot:



Query.sql - CIRCUIT\SQLEXPRESS.Inventory_Management_System (CIRCUIT\sajan (51))* - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
Execute
Object Explorer
CIRCUIT\SQLEXPRESS (SQL Se
Databases
Security
Server Objects
Replication
Management
XEvent Profiler
175 %
Results
Messages
Ready

```
Where total_amount > 150000

-- Query-4: Retrieve the total number of product have in the stock and total price of those product.
SELECT SUM(quantity) AS total_products_in_stock, SUM(price * quantity) AS total_price
FROM stock
JOIN product ON stock.product_id = product.product_id;

-- Query-5: Update the product id which id 4114 to 4115 and show the updated table.
UPDATE product
SET product_id = 4115
WHERE product_id = 4114;
SELECT *
FROM product

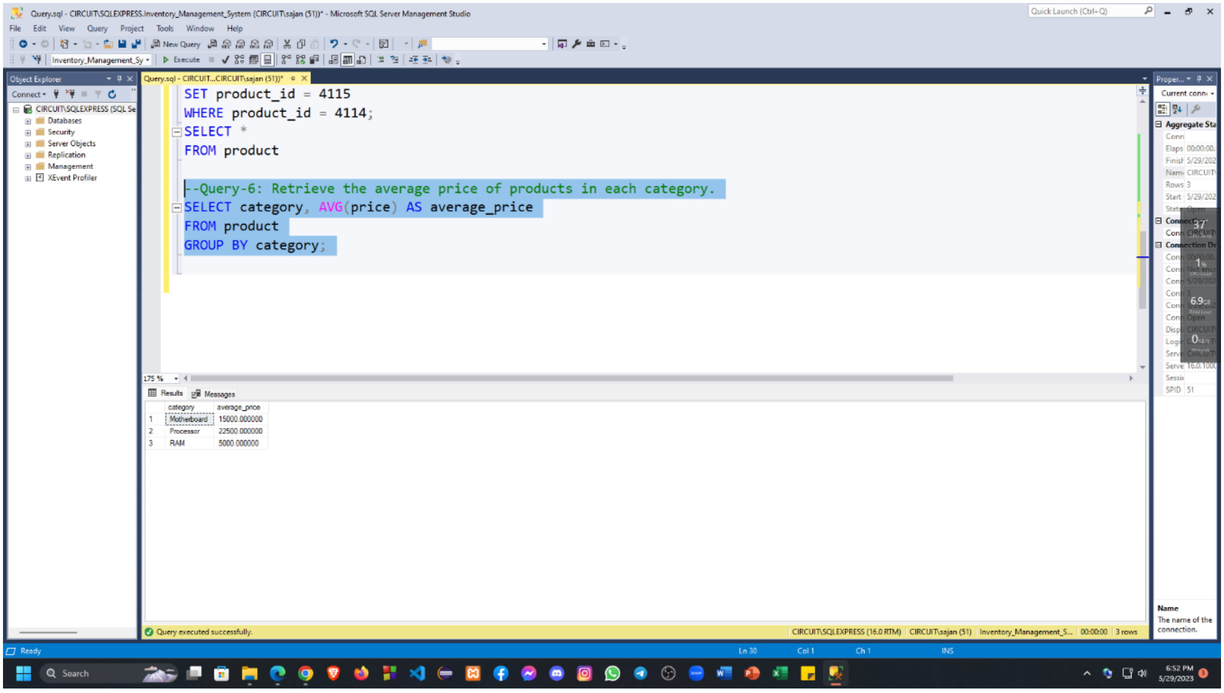
--Query-6: Retrieve the average price of products in each category.
```

	product_id	product_name	category	price	supplier_id
1	2111	i5-10400F Processor	Processor	15000.00	111
2	2112	i7-12700 Processor	Processor	30000.00	222
3	3111	Corsair Vengence 8GB 3200MHz RAM	RAM	3000.00	111
4	3112	G-Skill Rare X5 16GB 5600MHz RAM	RAM	7000.00	222
5	4111	Asus B460-Plus Motherboard	Motherboard	10000.00	111
6	4115	MSI B660M DDR4 Motherboard	Motherboard	20000.00	222

Query executed successfully. CIRCUIT\SQLEXPRESS (16.0 RTM) | CIRCUIT\sajan (51) | Inventory_Management_S... | 00:00:00 | 6 rows

```
### Query-6: Retrieve the average price of products in each category.
SELECT category, AVG(price) AS average_price
FROM product
GROUP BY category;
```

Screenshot:



Query.sql - CIRCUIT\SQLEXPRESS.Inventory_Management_System (CIRCUIT\sajan (51))* - Microsoft SQL Server Management Studio
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New Query
Execute
Object Explorer
CIRCUIT\SQLEXPRESS (SQL Se
Databases
Security
Server Objects
Replication
Management
XEvent Profiler
175 %
Results
Messages
Ready

```
SET product_id = 4115
WHERE product_id = 4114;
SELECT *
FROM product

--Query-6: Retrieve the average price of products in each category.
SELECT category, AVG(price) AS average_price
FROM product
GROUP BY category;
```

	category	average_price
1	Motherboard	15000.000000
2	Processor	22500.000000
3	RAM	5000.000000

Query executed successfully. CIRCUIT\SQLEXPRESS (16.0 RTM) | CIRCUIT\sajan (51) | Inventory_Management_S... | 00:00:00 | 3 rows