SVKM's NMIMS
School of Technology Management & Engineering, Chandigarh
A.Y. 2023 - 24
Course: Database Management Systems

Project Report

Program	BTI COMP	
Semester	VIII	
Name of the Project:	Gaming Essentials	
Details of Project Members		
Batch	Roll No.	Name
C1	C070	Ronit Shetty
C1	C094	Aaryaman Jagani
C1	C101	Abdulla Dalwai
Date of Submission: 06/04/2024		

Contribution of each project Members:

Roll No.	Name:	Contribution
C070	Ronit Shetty	Created tables & ran Queries
C094	Aaryaman Jagani	ER Model & Relational Schema
C101	Abdulla Dalwai	Created tables & ran Queries

Github link of your project:

Note:

1. Create a readme file if you have multiple files
2. All files must be properly named (Example:R004_DBMSProject)
3. Submit all relevant files of your work (Report, all SQL files, Any other files)
4. **Plagiarism is highly discouraged (Your report will be checked for plagiarism)**

Rubrics for the Project evaluation:

First phase of evaluation:	10 marks

Innovative Ideas (5 Marks) Design and Partial implementation (5 Marks)	
Final phase of evaluation Implementation, presentation and viva, Self-Learning and Learning Beyond classroom	10 marks

Project Report

Gaming Essentials

by

Ronit Shetty, Roll number: C070

Aaryaman Jagani, Roll number: C094

Abdulla Dalwai, Roll number: C101

Course: DBMS

AY: 2023-24

Table of Contents

I. **Storyline**

Gaming Essentials is not just a retail outlet, it is a hub for gaming enthusiasts, a place where gamers can find anything they need to enhance their gaming experience. The store carefully curates its inventory to include a diverse selection of products that cater to gamers of all preferences and levels, whether they're casual players or hardcore competitors.

One of the key aspects of Gaming Essentials' offerings is its commitment to stocking high grade products, pushing the boundaries of gaming technology.

The product lineup at Gaming Essentials encompasses a comprehensive range of gaming peripherals and accessories. This includes high-performance gaming headsets with immersive audio capabilities, gaming chairs built for comfort during long gaming sessions, speakers with high quality audio which ensures that no details are missed out. Additionally, the store offers an array of electronics such as tablets, smart televisions, laptops, and smartphones as well.

Gaming Essentials a destination for gamers, a place where they can find the essential tools and accessories they need to elevate their gaming experience, all while being part of a vibrant and supportive community.

II. Components of Database Design

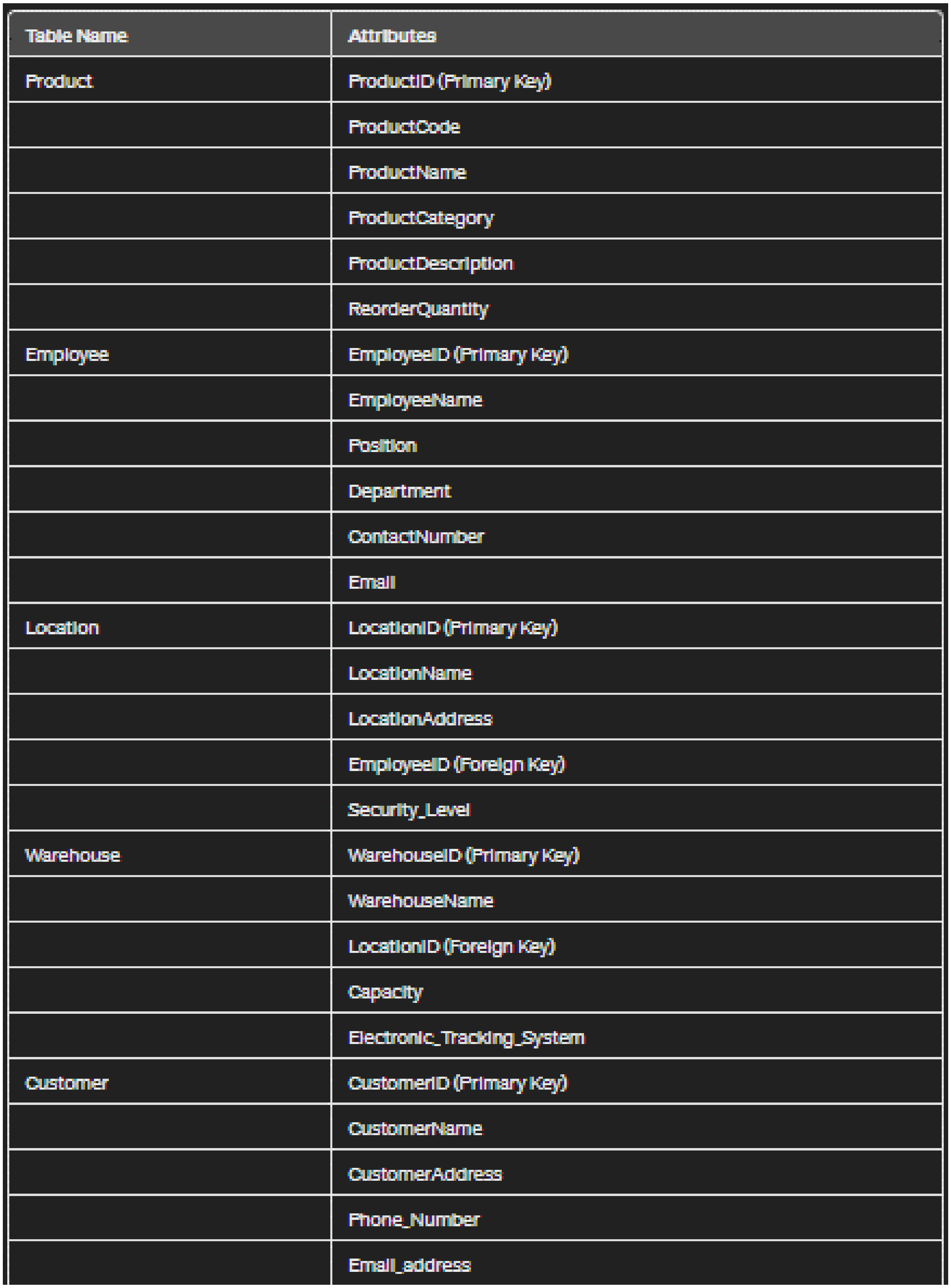
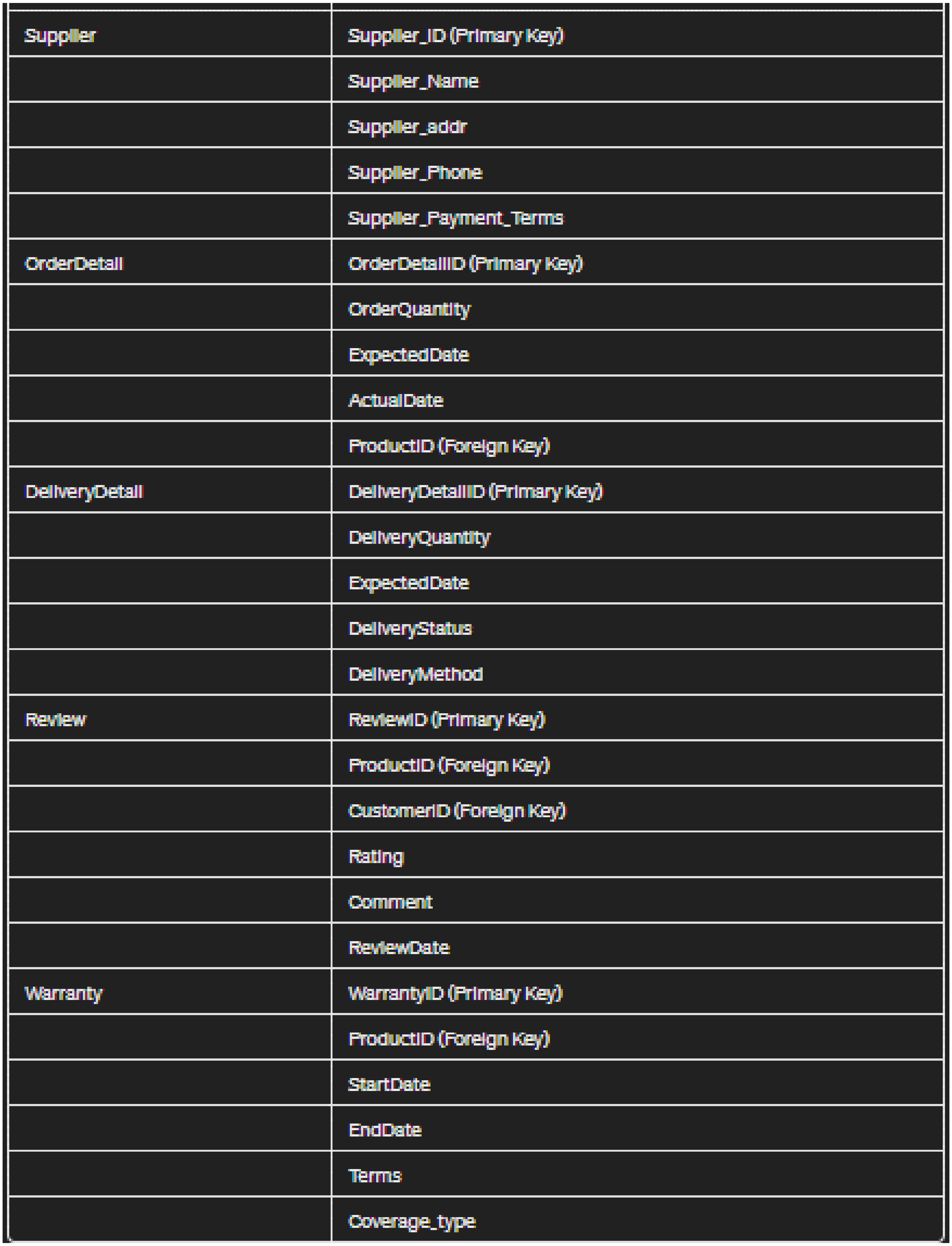
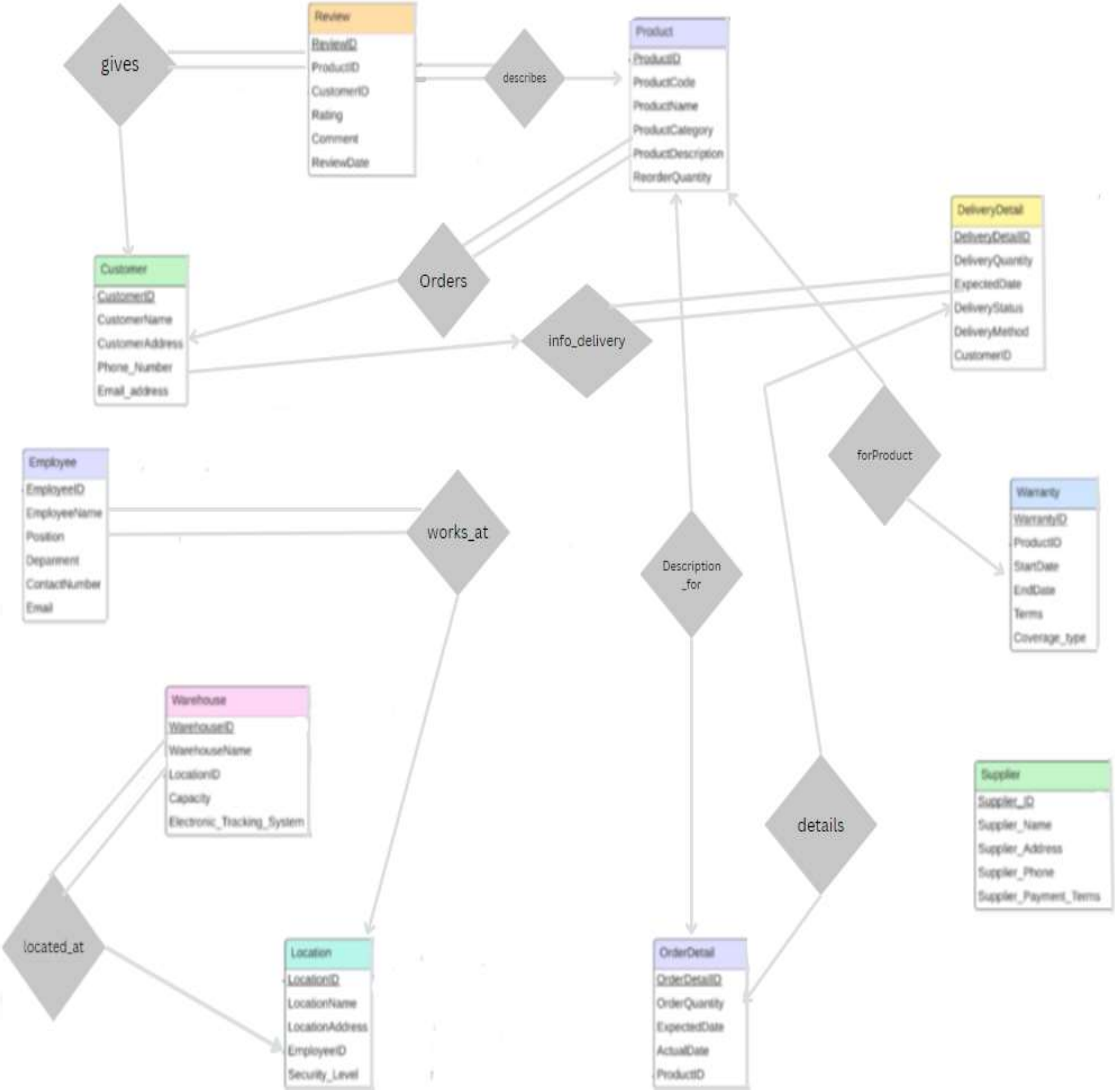


Table Name	Attributes
Product	ProductID (Primary Key)
	ProductCode
	ProductName
	ProductCategory
	ProductDescription
	ReorderQuantity
Employee	EmployeeID (Primary Key)
	EmployeeName
	Position
	Department
	ContactNumber
	Email
Location	LocationID (Primary Key)
	LocationName
	LocationAddress
	EmployeeID (Foreign Key)
	Security_Level
Warehouse	WarehouseID (Primary Key)
	WarehouseName
	LocationID (Foreign Key)
	Capacity
	Electronic_Tracking_System
Customer	CustomerID (Primary Key)
	CustomerName
	CustomerAddress
	Phone_Number
	Email_address



Supplier	Supplier_ID (Primary Key)
	Supplier_Name
	Supplier_addr
	Supplier_Phone
	Supplier_Payment_Terms
OrderDetail	OrderDetailID (Primary Key)
	OrderQuantity
	ExpectedDate
	ActualDate
	ProductID (Foreign Key)
DeliveryDetail	DeliveryDetailID (Primary Key)
	DeliveryQuantity
	ExpectedDate
	DeliveryStatus
	DeliveryMethod
Review	ReviewID (Primary Key)
	ProductID (Foreign Key)
	CustomerID (Foreign Key)
	Rating
	Comment
	ReviewDate
Warranty	WarrantyID (Primary Key)
	ProductID (Foreign Key)
	StartDate
	EndDate
	Terms
	Coverage_type

III. Entity Relationship Diagram



IV. Relational Model

- **ENTITES:**

Product

ProductID (P.K)	ProductCode	ProductName	ProductCategory	ProductDescription	ReorderQuantity

Supplier

Supplier_ID (P.K)	Supplier_Name	Supplier_Address	Supplier_Phone	Supplier_Payment_Terms

Review

ReviewID (P.K)	ProductID	CustomerID	Rating	Comment	ReviewDate

OrderDetail

OrderDetailID (P.K)	OrderQuantity	ExpectedDate	ActualDate	ProductID

DeliveryDetail

DeliveryDetailID (P.K)	DeliveryQuantity	ExpectedDate	DeliveryStatus	DeliveryMethod

Warranty

WarrantyID (P.K)	ProductID	StartDate	EndDate	Terms	Coverage_type

Customer

CustomerID (P.K)	CustomerName	CustomerAddress	Phone_Number	Email_address

Employee

EmployeeID (P.K)	EmployeeName	Position	Department	ContactNumber	Email

Location

LocationID (P.K)	LocationName	LocationAddress	EmployeeID	Security_Level

Warehouse

WarehouseID (P.K)	WarehouseName	LocationID	Capacity	Electronic_Tracking_System

- **RELATIONS**

gives

ReviewID(P.K)	CustomerID	ProductID	Rating	Comment	ReviewDate

describes

ReviewID(P.K)	ProductID	CustomerID	Rating	Comment	ReviewDate

Orders

ProductID(P.K)	CustomerID	ProductCode	Product Name	Product Category	ProductDescription	ReorderQuantity

info_delivery

DeliveryDetailID(P.K)	CustomerID	DeliveryQuantity	ExpectedDate	DeliveryStatus	DeliveryMethod

works_at

EmployeeID(P.K)	LocationID	EmployeeName	Position	Department	ContactNumber	Email

located_at

WarehouseID(P.K)	LocationID	WarehouseName	Capacity	Electronic_Tracking_System

forProduct

ProductID (P.K)	WarrantyID

details

DeliveryDetailID(P.K)	OrderDetailID

Description_for

OrderDetailID(P.K)	ProductID

V. Normalization

All the tables are normalized up to BCNF.

VI. SQL Queries

- **DATABASE WITH ALL ENTITES, ATTRIBUTES AND THEIR VALUES**

```
-- GAMING ESSENTIALS [~ G-E ~]

create table Product(
 ProductID int primary key ,
 ProductCode varchar(100),
 ProductName varchar(100) ,
 ProductCategory varchar(100),
 ProductDescription varchar(1500),
 ReorderQuantity int
);
INSERT INTO Product (ProductID, ProductCode, ProductName, ProductCategory,
ProductDescription,
ReorderQuantity)
VALUES
(1, 'LPT001', 'Laptop', 'Electronics', 'High-performance laptop with SSD storage', 20),
(2, 'PHN001', 'Smartphone', 'Electronics', 'Latest model smartphone with dual camera', 30),
(3, 'TAB001', 'Tablet', 'Electronics', '10-inch tablet with long battery life', 25),
(4, 'GCR001', 'GamingChair', 'Appliances', 'Ergonomic gaming chair with adjustable lumbar
support for ultimate comfort during long gaming sessions.', 15),
(5, 'MPD001', 'Mousepad', 'Appliances', 'Gaming mousepad with ultra-smooth surface for precise
control and durability.', 10),
(6, 'TV001', 'Smart TV', 'Electronics', '55-inch smart TV with 4K resolution', 12),
(7, 'SWT001', 'Smartwatch', 'Electronics', 'Fitness tracking smartwatch with heart rate monitor',
18),
(8, 'SPK001', 'Bluetooth Speaker', 'Electronics', 'Portable Bluetooth speaker with waterproof
design', 22),
(9, 'HDP001', 'Headphones', 'Electronics', 'Wireless headphones with noise cancellation feature',
28);

CREATE TABLE EMPLOYEE(
 EmployeeID int PRIMARY KEY,
 EmployeeName varchar(100),
 Position varchar(100),
 Department varchar(100),
 ContactNumber varchar(20),
 Email varchar(100)
);
INSERT INTO Employee (EmployeeID, EmployeeName, Position, Department, ContactNumber,
Email)VALUES
(1, 'John Doe', 'Manager', 'Sales', '123-456-7890', 'johndoe@gmail.com'),
(2, 'Jane Smith', 'Supervisor', 'Warehouse', '456-789-0123', 'janesmith@gmail.com'),
(3, 'Michael Johnson', 'Sales Associate', 'Sales', '789-012-3456', 'michaeljohnson@gmail.com'),
(4, 'Emily Williams', 'Warehouse Coordinator', 'Warehouse', '012-345-6789',
'emilywilliams@gmail.com'),
(5, 'David Brown', 'IT Specialist', 'IT', '345-678-9012', 'davidbrown@gmail.com'),
(6, 'Sarah Davis', 'Customer Service Representative', 'Customer Service', '678-901-2345',
'sarahdavis@gmail.com'),
(7, 'Robert Wilson', 'Accountant', 'Finance', '901-234-5678', 'robertwilson@gmail.com'),
(8, 'Jennifer Martinez', 'HR Manager', 'Human Resources', '234-567-8901',
'jennifermartinez@gmail.com'),
(9, 'James Taylor', 'Technical Support Specialist', 'IT', '567-890-1234', 'jamestaylor@gmail.com'),
(10, 'Amanda Anderson', 'Marketing Manager', 'Marketing', '890-123-4567',
'amandaanderson@gmail.com');

CREATE TABLE Location (
 LocationID int primary key,
 LocationName varchar(200) ,
 LocationAddress varchar(200) ,
 EmployeeID int,
 foreign key Location(EmployeeID) references Employee(EmployeeID),
 Security_Level int
 );

INSERT INTO Location (LocationID, LocationName, LocationAddress, EmployeeID,
Security_Level)
VALUES
(1, 'Main Warehouse', '123 Main Street', 2, 3),
(2, 'Retail Store', '456 Elm Street', 1, 4),
(3, 'Corporate Office', '789 Oak Street', 7, 5),
(4, 'Distribution Center', '234 Pine Street', 4, 3),
(5, 'IT Department', '567 Maple Street', 5, 4),
(6, 'Customer Service Center', '890 Cedar Street', 6, 2),
(7, 'Finance Department', '345 Walnut Street', 7, 4),
(8, 'Marketing Department', '901 Birch Street', 10, 3),
(9, 'HR Department', '678 Spruce Street', 8, 2),
(10, 'Sales Office', '123 Cherry Street', 3, 3);

CREATE TABLE Warehouse(
 WarehouseID int Primary key ,
 WarehouseName varchar(100) ,
 LocationID int,
 foreign key Warehouse(LocationID) references Location(LocationID),  -- reference to location
table(foreign key)
Capacity int,
 Electronic_Tracking_System varchar(1) check(Electronic_Tracking_System = 'Y' or
Electronic_Tracking_System= 'N') -- throws exception if any other letter inputted
);
INSERT INTO Warehouse (WarehouseID, WarehouseName, LocationID, Capacity,
Electronic_Tracking_System)
VALUES
(1, 'Warehouse A', 1, 1000, 'Y'),
(2, 'Warehouse B', 2, 800, 'N'),
(3, 'Warehouse C', 3, 1200, 'Y'),
(4, 'Warehouse D', 4, 1500, 'Y'),
(5, 'Warehouse E', 5, 900, 'N'),
(6, 'Warehouse F', 6, 1100, 'Y'),
(7, 'Warehouse G', 7, 1300, 'N'),
(8, 'Warehouse H', 8, 1000, 'Y'),
(9, 'Warehouse I', 9, 1400, 'Y'),
(10, 'Warehouse J', 10, 950, 'N');

CREATE TABLE Customer (
 CustomerID int Primary key ,
 CustomerName varchar(100) NOT NULL ,
 CustomerAddress varchar(200) NOT NULL,
 Phone_Number numeric(10),
 Email_address varchar(100) NOT NULL
```

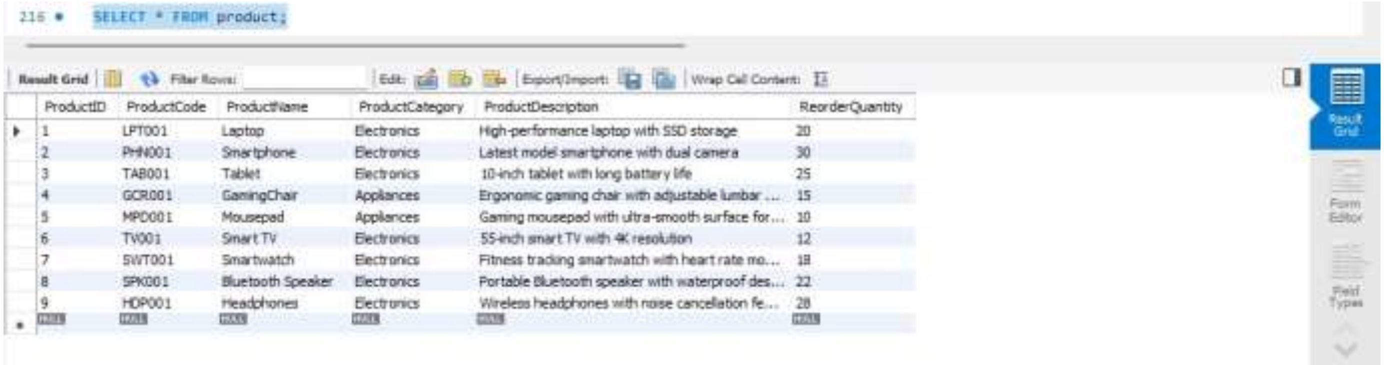
```
);
INSERT INTO Customer (CustomerID, CustomerName, CustomerAddress, Phone_Number,
Email_address)
VALUES
(1, 'John Doe', '123 Main St, City, Country', 1234567890, 'john@example.com'),
(2, 'Alice Smith', '456 Elm St, City, Country', 9876543210, 'alice@example.com'),
(3, 'Bob Johnson', '789 Oak St, City, Country', 1357924680, 'bob@example.com'),
(4, 'Emily Davis', '321 Pine St, City, Country', 2468013579, 'emily@example.com'),
(5, 'Michael Wilson', '654 Maple St, City, Country', 9876543210, 'michael@example.com'),
(6, 'Sarah Brown', '987 Cedar St, City, Country', 1234567890, 'sarah@example.com'),
(7, 'David Lee', '159 Birch St, City, Country', 3579134680, 'david@example.com'),
(8, 'Jennifer Taylor', '852 Walnut St, City, Country', 2468013579, 'jennifer@example.com'),
(9, 'James Clark', '753 Spruce St, City, Country', 1234567890, 'james@example.com'),
(10, 'Emma Rodriguez', '456 Pine St, City, Country', 9876543210, 'emma@example.com');

CREATE TABLE Supplier(
Supplier_ID int primary key,
 Supplier_Name varchar(100) not nULL,
 Supplier_addr varchar(100) not null,
Supplier_Phone numeric(10) not null,
 Supplier_Payment_Terms varchar(50)
);
INSERT INTO Supplier (Supplier_ID, Supplier_Name, Supplier_addr, Supplier_Phone,
Supplier_Payment_Terms)
VALUES
(1, 'Tech Supplies', '123 Tech Street', 1234567890, 'Net 30'),
(2, 'Gadget Galaxy', '456 Gadget Street', 2345678901, 'Net 60'),
(3, 'ElectroWholesale', '789 Electro Avenue', 3456789012, 'Net 45'),
(4, 'Appliance Distributors', '234 Appliance Road', 4567890123, 'Net 60'),
(5, 'Tech Innovations', '567 Innovation Blvd', 5678901234, 'Net 30'),
(6, 'Gadget Emporium', '890 Gadget Lane', 6789012345, 'Net 60'),
(7, 'Electronics World', '901 Electronics Street', 7890123456, 'Net 45'),
(8, 'Innovative Solutions', '123 Innovation Avenue', 8901234567, 'Net 30'),
(9, 'Gizmo Mart', '456 Gizmo Road', 9012345678, 'Net 60'),
(10, 'Appliance Heaven', '789 Appliance Street', 9876543210,'Net 45');

CREATE TABLE OrderDetail (
 OrderDetailID int Primary key,
 OrderQuantity int NOT NULL,
 ExpectedDate Date NOT NULL,
 ActualDate Date NOT NULL,
 ProductID int ,
 foreign key OrderDetail(ProductID) references Product(ProductID)  -- reference to Product table
 );
```

```
INSERT INTO OrderDetail (OrderDetailID, OrderQuantity, ExpectedDate, ActualDate,
ProductID)
VALUES
(1, 5, '2024-03-23', '2024-03-23', 1),
(2, 10, '2024-03-25', '2024-03-25', 3),
(3, 3, '2024-03-24', '2024-03-24', 5),
(4, 8, '2024-03-26', '2024-03-26', 7),
(5, 6, '2024-03-23', '2024-03-23', 9),
(6, 15, '2024-03-28', '2024-03-28', 2),
(7, 2, '2024-03-27', '2024-03-27', 4),
(8, 12, '2024-03-29', '2024-03-29', 6),
(9, 7, '2024-03-24', '2024-03-24', 8);

CREATE TABLE DeliveryDetail (
 DeliveryDetailID int Primary key,
 DeliveryQuantity int NOT NULL,
 ExpectedDate date NOT NULL,
 DeliveryStatus varchar(50),
DeliveryMethod varchar(50)
);
INSERT INTO DeliveryDetail (DeliveryDetailID, DeliveryQuantity, ExpectedDate, DeliveryStatus,
DeliveryMethod)
VALUES
(1, 5, '2024-03-24', 'In Transit', 'Ground Shipping'),
(2, 10, '2024-03-26', 'Delivered', 'Express Delivery'),
(3, 3, '2024-03-25', 'In Transit', 'Air Freight'),
(4, 8, '2024-03-27', 'Delivered', 'Ground Shipping'),
(5, 6, '2024-03-24', 'In Transit', 'Ground Shipping'),
(6, 15, '2024-03-29', 'Delivered', 'Express Delivery'),
(7, 2, '2024-03-28', 'In Transit', 'Air Freight'),
(8, 12, '2024-03-30', 'Delivered', 'Ground Shipping'),
(9, 7, '2024-03-25', 'In Transit', 'Ground Shipping');

CREATE TABLE Review(
ReviewID int PRIMARY KEY,
 ProductID int,
 CustomerID int,
 Rating int,
 Comment varchar(500),
 ReviewDate date,
 FOREIGN KEY (ProductID) REFERENCES Product(ProductID),
 FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);
INSERT INTO Review (ReviewID, ProductID, CustomerID, Rating, Comment, ReviewDate)
VALUES
(1, 1, 1, 4, 'Great laptop, fast delivery!', '2024-03-25'),
(2, 2, 2, 5, 'Love this smartphone, amazing camera!', '2024-03-26'),
(3, 3, 3, 4, 'Nice tablet, good battery life.', '2024-03-27'),
(4, 4, 4, 3, 'Comfortable gaming chair with excellent lumbar support!', '2024-03-28'),
(5, 5, 5, 5, 'Flimsy material prone to wear and tear, :(', '2024-03-29'),
(6, 6, 6, 4, 'Impressive smart TV, excellent picture quality.', '2024-03-30'),
(7, 7, 7, 3, 'Smartwatch works well but battery life could be better.', '2024-03-31'),
(8, 8, 8, 4, 'Bluetooth speaker has good sound quality, durable too.', '2024-04-01'),
(9, 9, 9, 5, 'Headphones are comfortable and sound fantastic!', '2024-04-02');

CREATE TABLE Warranty (
 WarrantyID int PRIMARY KEY,
 ProductID int,
 StartDate date,
 EndDate date,
 Terms varchar(200),
 Coverage_type varchar(50),
 FOREIGN KEY (ProductID) REFERENCES Product(ProductID) -- reference to product table
);
INSERT INTO Warranty (WarrantyID, ProductID, StartDate, EndDate, Terms, Coverage_type)
VALUES
(1, 1, '2024-03-25', '2026-03-25', 'Standard warranty terms apply.', 'Manufacturer Warranty'),
(2, 2, '2024-03-26', '2026-03-26', 'Extended warranty with additional coverage.', 'Extended
Warranty'),
(3, 3, '2024-03-27', '2026-03-27', 'Limited warranty, excludes certain damages.', 'Limited
Warranty'),
(4, 4, '2024-03-28', '2026-03-28', 'Comprehensive warranty covering all parts and labor.',
'Comprehensive
Warranty'),
(5, 5, '2024-03-29', '2026-03-29', 'Standard warranty terms apply.', 'Manufacturer Warranty'),
(6, 6, '2024-03-30', '2026-03-30', 'Extended warranty with accidental damage protection.', 'Extended
Warranty'),
(7, 7, '2024-03-31', '2026-03-31', 'Limited warranty, excludes normal wear and tear.', 'Limited
Warranty'),
(8, 8, '2024-04-01', '2026-04-01', 'Comprehensive warranty covering all defects and malfunctions.',
'Comprehensive Warranty'),
(9, 9, '2024-04-02', '2026-04-02', 'Standard warranty terms apply.', 'Manufacturer Warranty');
```

ALL QUERIES

SELECT QUERY

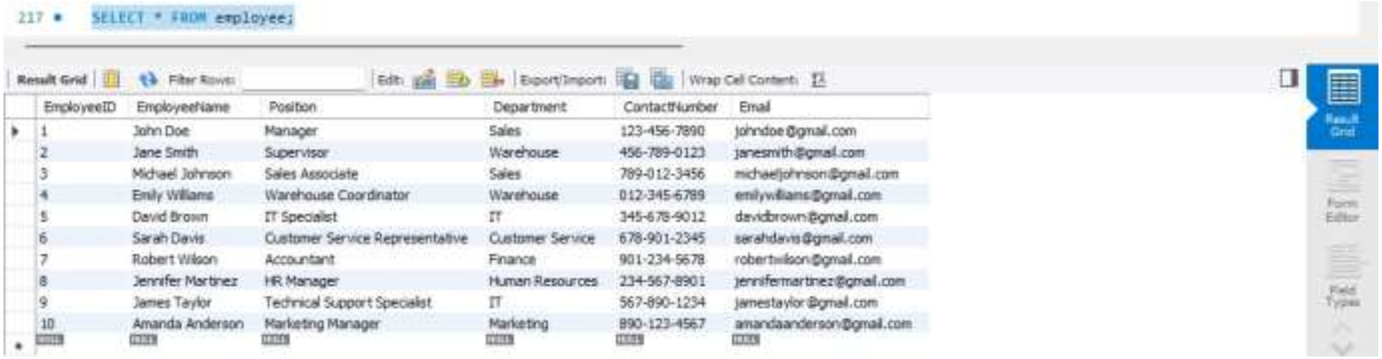
Product:



```
SELECT * FROM product;
```

ProductID	ProductCode	ProductName	ProductCategory	ProductDescription	ReorderQuantity
1	LPT001	Laptop	Electronics	High-performance laptop with SSD storage	20
2	PHN001	Smartphone	Electronics	Latest model smartphone with dual camera	30
3	TAB001	Tablet	Electronics	10-inch tablet with long battery life	25
4	GCR001	GamingChair	Appliances	Ergonomic gaming chair with adjustable lumbar ...	15
5	MPD001	Mousepad	Appliances	Gaming mousepad with ultra-smooth surface for...	10
6	TV001	Smart TV	Electronics	55-inch smart TV with 4K resolution	12
7	SWT001	Smartwatch	Electronics	Fitness tracking smartwatch with heart rate mo...	18
8	SPK001	Bluetooth Speaker	Electronics	Portable Bluetooth speaker with waterproof des...	22
9	HDP001	Headphones	Electronics	Wireless headphones with noise cancellation fe...	28
NULL	NULL	NULL	NULL	NULL	NULL

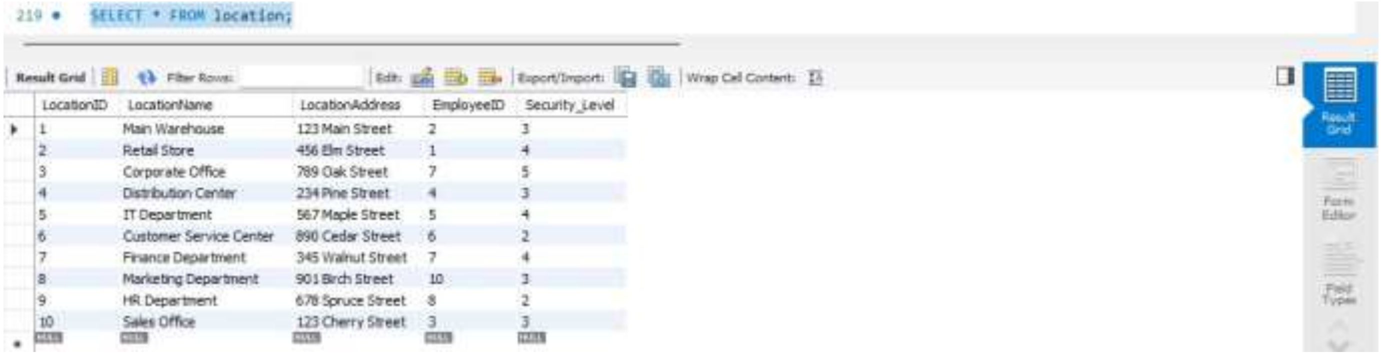
Employee:



```
SELECT * FROM employee;
```

EmployeeID	EmployeeName	Position	Department	ContactNumber	Email
1	John Doe	Manager	Sales	123-456-7890	johndoe@gmail.com
2	Jane Smith	Supervisor	Warehouse	456-789-0123	janesmith@gmail.com
3	Michael Johnson	Sales Associate	Sales	789-012-3456	michaeljohnson@gmail.com
4	Emily Williams	Warehouse Coordinator	Warehouse	012-345-6789	emilywilliams@gmail.com
5	David Brown	IT Specialist	IT	345-678-9012	davidbrown@gmail.com
6	Sarah Davis	Customer Service Representative	Customer Service	678-901-2345	sarahdavis@gmail.com
7	Robert Wilson	Accountant	Finance	901-234-5678	robertwilson@gmail.com
8	Jennifer Martinez	HR Manager	Human Resources	234-567-8901	jennifermartinez@gmail.com
9	James Taylor	Technical Support Specialist	IT	567-890-1234	jamestaylor@gmail.com
10	Amanda Anderson	Marketing Manager	Marketing	890-123-4567	amandaanderson@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL

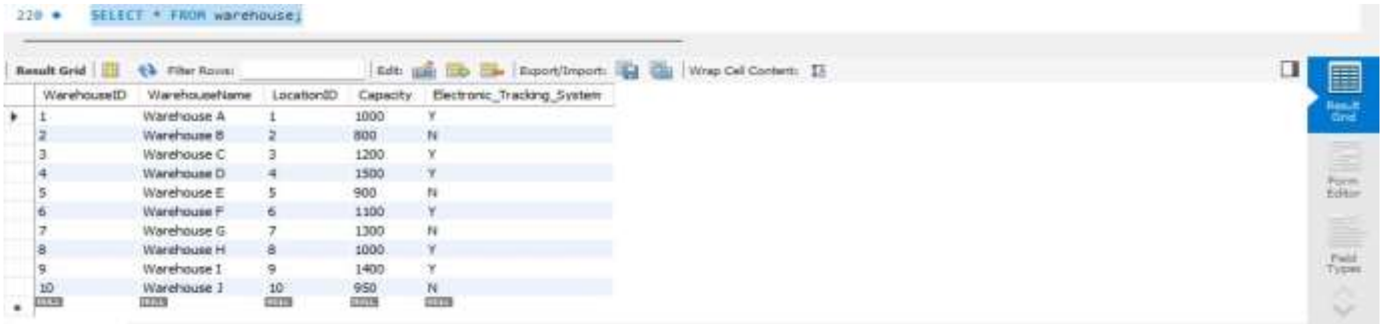
Location:



```
SELECT * FROM location;
```

LocationID	LocationName	LocationAddress	EmployeeID	Security_Level
1	Main Warehouse	123 Main Street	2	3
2	Retail Store	456 Elm Street	1	4
3	Corporate Office	789 Oak Street	7	5
4	Distribution Center	234 Pine Street	4	3
5	IT Department	567 Maple Street	5	4
6	Customer Service Center	890 Cedar Street	6	2
7	Finance Department	345 Walnut Street	7	4
8	Marketing Department	901 Birch Street	10	3
9	HR Department	678 Spruce Street	8	2
10	Sales Office	123 Cherry Street	3	3
NULL	NULL	NULL	NULL	NULL

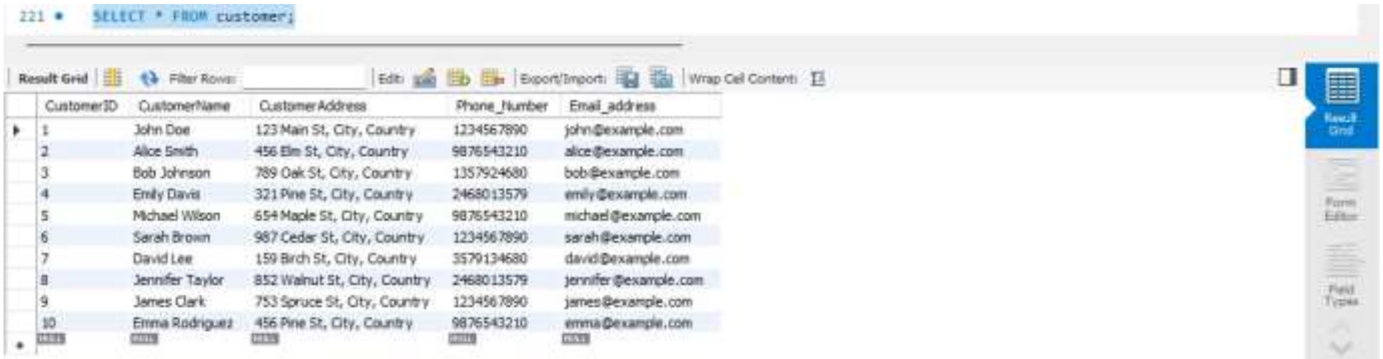
Warehouse:



```sql
SELECT * FROM warehouse;
```

WarehouseID	WarehouseName	LocationID	Capacity	Electronic_Tracking_System
1	Warehouse A	1	1000	Y
2	Warehouse B	2	800	N
3	Warehouse C	3	1200	Y
4	Warehouse D	4	1500	Y
5	Warehouse E	5	900	N
6	Warehouse F	6	1100	Y
7	Warehouse G	7	1300	N
8	Warehouse H	8	1000	Y
9	Warehouse I	9	1400	Y
10	Warehouse J	10	950	N
NULL	NULL	NULL	NULL	NULL

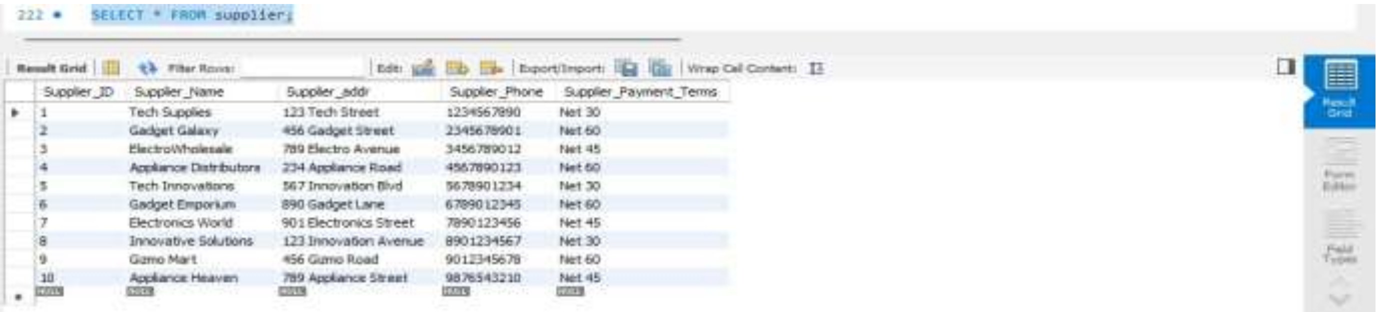
Customer:



```sql
SELECT * FROM customer;
```

CustomerID	CustomerName	CustomerAddress	Phone_Number	Email_address
1	John Doe	123 Main St, City, Country	1234567890	john@example.com
2	Alice Smith	456 Elm St, City, Country	9876543210	alice@example.com
3	Bob Johnson	789 Oak St, City, Country	1357924680	bob@example.com
4	Emily Davis	321 Pine St, City, Country	2468013579	emily@example.com
5	Michael Wilson	654 Maple St, City, Country	9876543210	michael@example.com
6	Sarah Brown	987 Cedar St, City, Country	1234567890	sarah@example.com
7	David Lee	159 Birch St, City, Country	3579134680	david@example.com
8	Jennifer Taylor	852 Walnut St, City, Country	2468013579	jennifer@example.com
9	James Clark	753 Spruce St, City, Country	1234567890	james@example.com
10	Emma Rodriguez	456 Pine St, City, Country	9876543210	emma@example.com
NULL	NULL	NULL	NULL	NULL

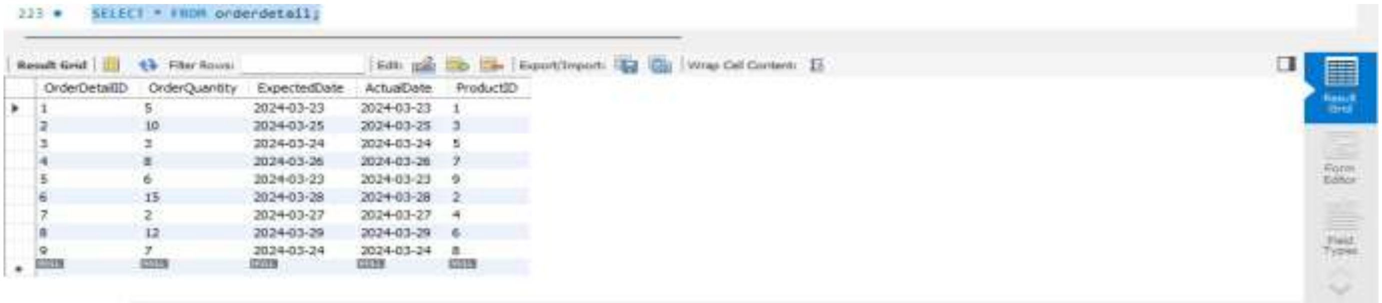
Supplier:



```sql
SELECT * FROM supplier;
```

Supplier_ID	Supplier_Name	Supplier_addr	Supplier_Phone	Supplier_Payment_Terms
1	Tech Supplies	123 Tech Street	1234567890	Net 30
2	Gadget Galaxy	456 Gadget Street	2345678901	Net 60
3	ElectroWholesale	789 Electro Avenue	3456789012	Net 45
4	Appliance Distributors	234 Appliance Road	4567890123	Net 60
5	Tech Innovations	567 Innovation Blvd	5678901234	Net 30
6	Gadget Emporium	890 Gadget Lane	6789012345	Net 60
7	Electronics World	901 Electronics Street	7890123456	Net 45
8	Innovative Solutions	123 Innovation Avenue	8901234567	Net 30
9	Gizmo Mart	456 Gizmo Road	9012345678	Net 60
10	Appliance Heaven	789 Appliance Street	9876543210	Net 45
NULL	NULL	NULL	NULL	NULL

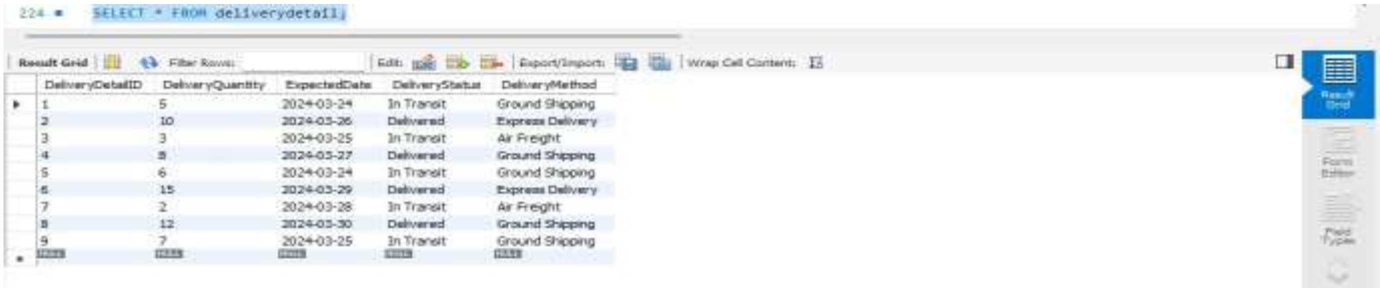
OrderDetails:



```sql
SELECT * FROM orderdetail;
```

OrderDetailID	OrderQuantity	ExpectedDate	ActualDate	ProductID
1	5	2024-03-23	2024-03-23	1
2	10	2024-03-25	2024-03-25	3
3	3	2024-03-24	2024-03-24	5
4	8	2024-03-26	2024-03-26	7
5	6	2024-03-23	2024-03-23	9
6	15	2024-03-28	2024-03-28	2
7	2	2024-03-27	2024-03-27	4
8	12	2024-03-29	2024-03-29	6
9	7	2024-03-24	2024-03-24	8
NULL	NULL	NULL	NULL	NULL

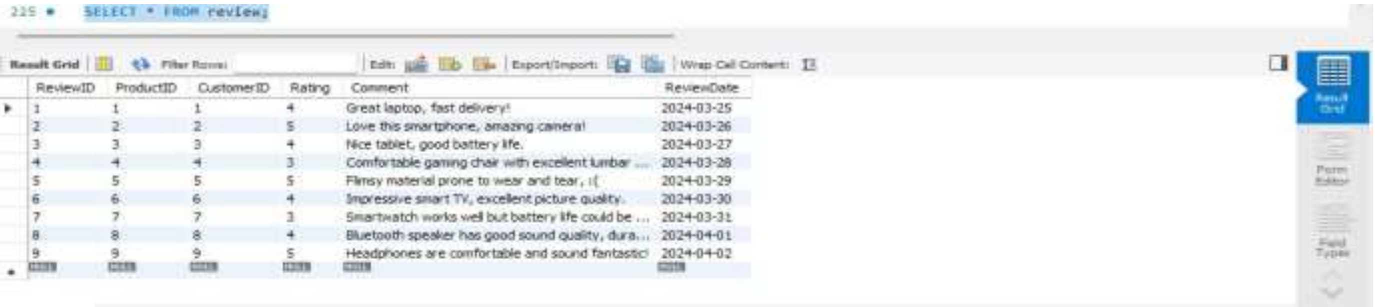
DeliveryDetails:



```sql
SELECT * FROM deliverydetail;
```

	DeliveryDetailID	DeliveryQuantity	ExpectedDate	DeliveryStatus	DeliveryMethod
▶	1	5	2024-03-24	In Transit	Ground Shipping
	2	10	2024-03-26	Delivered	Express Delivery
	3	3	2024-03-25	In Transit	Air Freight
	4	8	2024-03-27	Delivered	Ground Shipping
	5	6	2024-03-24	In Transit	Ground Shipping
	6	15	2024-03-29	Delivered	Express Delivery
	7	2	2024-03-28	In Transit	Air Freight
	8	12	2024-03-30	Delivered	Ground Shipping
	9	7	2024-03-25	In Transit	Ground Shipping
*	NULL	NULL	NULL	NULL	NULL

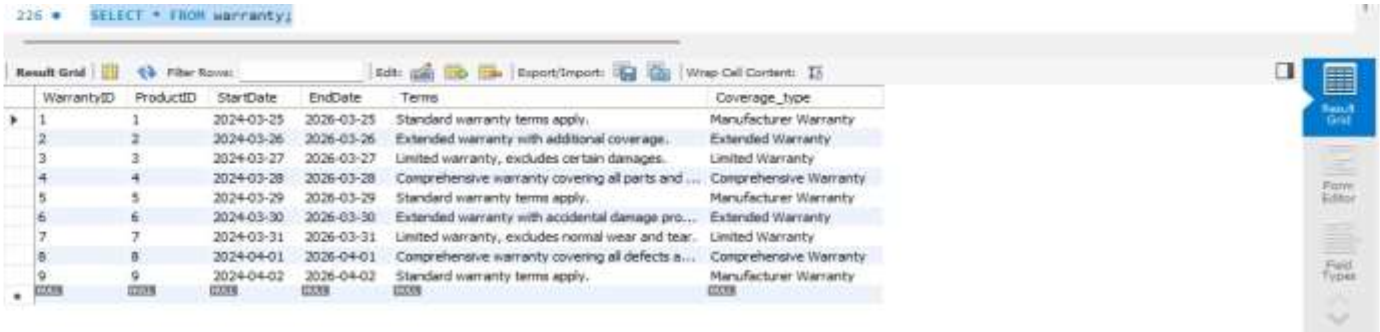
Review:



```sql
SELECT * FROM review;
```

	ReviewID	ProductID	CustomerID	Rating	Comment	ReviewDate
▶	1	1	1	4	Great laptop, fast delivery!	2024-03-25
	2	2	2	5	Love this smartphone, amazing camera!	2024-03-26
	3	3	3	4	Nice tablet, good battery life.	2024-03-27
	4	4	4	3	Comfortable gaming chair with excellent lumbar ...	2024-03-28
	5	5	5	5	Flimsy material prone to wear and tear, :(	2024-03-29
	6	6	6	4	Impressive smart TV, excellent picture quality.	2024-03-30
	7	7	7	3	Smartwatch works well but battery life could be ...	2024-03-31
	8	8	8	4	Bluetooth speaker has good sound quality, dura...	2024-04-01
	9	9	9	5	Headphones are comfortable and sound fantastic!	2024-04-02
*	NULL	NULL	NULL	NULL	NULL	NULL

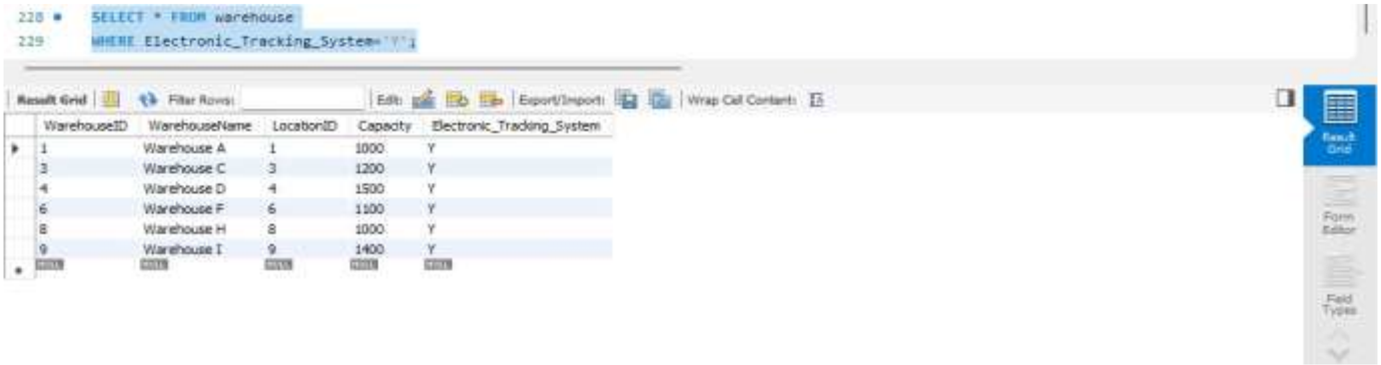
Warranty:



```sql
SELECT * FROM warranty;
```

	WarrantyID	ProductID	StartDate	EndDate	Terms	Coverage_type
▶	1	1	2024-03-25	2026-03-25	Standard warranty terms apply.	Manufacturer Warranty
	2	2	2024-03-26	2026-03-26	Extended warranty with additional coverage.	Extended Warranty
	3	3	2024-03-27	2026-03-27	Limited warranty, excludes certain damages.	Limited Warranty
	4	4	2024-03-28	2026-03-28	Comprehensive warranty covering all parts and ...	Comprehensive Warranty
	5	5	2024-03-29	2026-03-29	Standard warranty terms apply.	Manufacturer Warranty
	6	6	2024-03-30	2026-03-30	Extended warranty with accidental damage pro...	Extended Warranty
	7	7	2024-03-31	2026-03-31	Limited warranty, excludes normal wear and tear.	Limited Warranty
	8	8	2024-04-01	2026-04-01	Comprehensive warranty covering all defects a...	Comprehensive Warranty
	9	9	2024-04-02	2026-04-02	Standard warranty terms apply.	Manufacturer Warranty
*	NULL	NULL	NULL	NULL	NULL	NULL

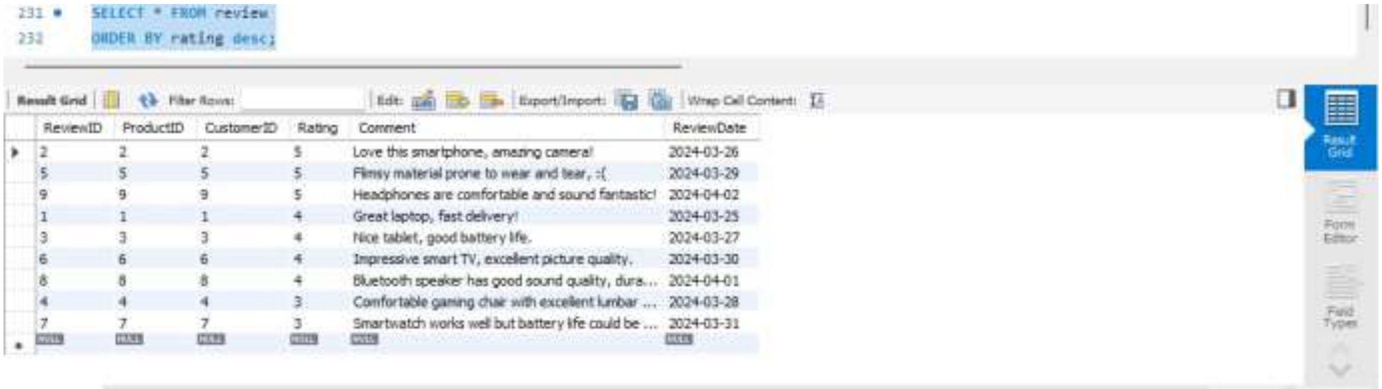
WHERE QUERY



```sql
SELECT * FROM warehouse
WHERE Electronic_Tracking_System='Y';
```

	WarehouseID	WarehouseName	LocationID	Capacity	Electronic_Tracking_System
▶	1	Warehouse A	1	1000	Y
	3	Warehouse C	3	1200	Y
	4	Warehouse D	4	1500	Y
	6	Warehouse F	6	1100	Y
	8	Warehouse H	8	1000	Y
	9	Warehouse I	9	1400	Y
*	NULL	NULL	NULL	NULL	NULL

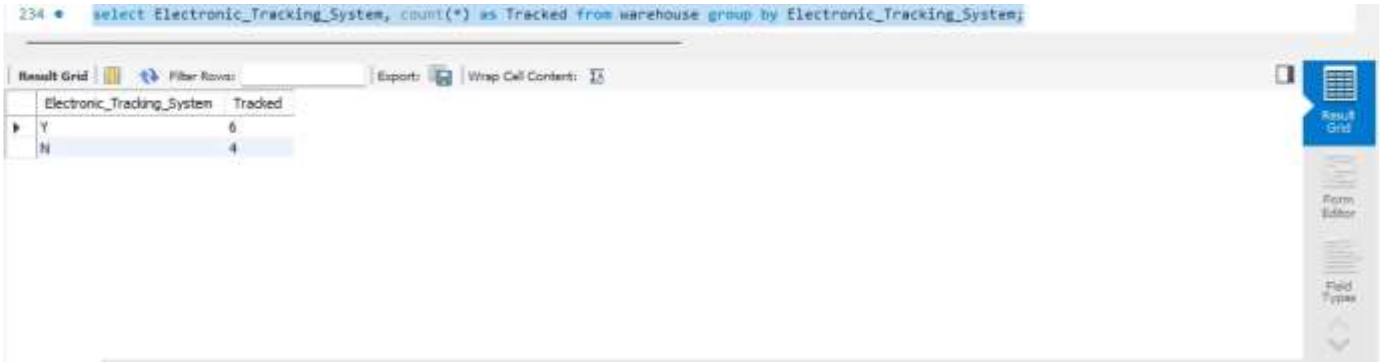
ORDERBY QUERY



```
SELECT * FROM review
ORDER BY rating desc;
```

ReviewID	ProductID	CustomerID	Rating	Comment	ReviewDate
2	2	2	5	Love this smartphone, amazing camera!	2024-03-26
5	5	5	5	Flimsy material prone to wear and tear, :(	2024-03-29
9	9	9	5	Headphones are comfortable and sound fantastic!	2024-04-02
1	1	1	4	Great laptop, fast delivery!	2024-03-25
3	3	3	4	Nice tablet, good battery life.	2024-03-27
6	6	6	4	Impressive smart TV, excellent picture quality.	2024-03-30
8	8	8	4	Bluetooth speaker has good sound quality, dura...	2024-04-01
4	4	4	3	Comfortable gaming chair with excellent lumbar ...	2024-03-28
7	7	7	3	Smartwatch works well but battery life could be ...	2024-03-31
NULL	NULL	NULL	NULL	NULL	NULL

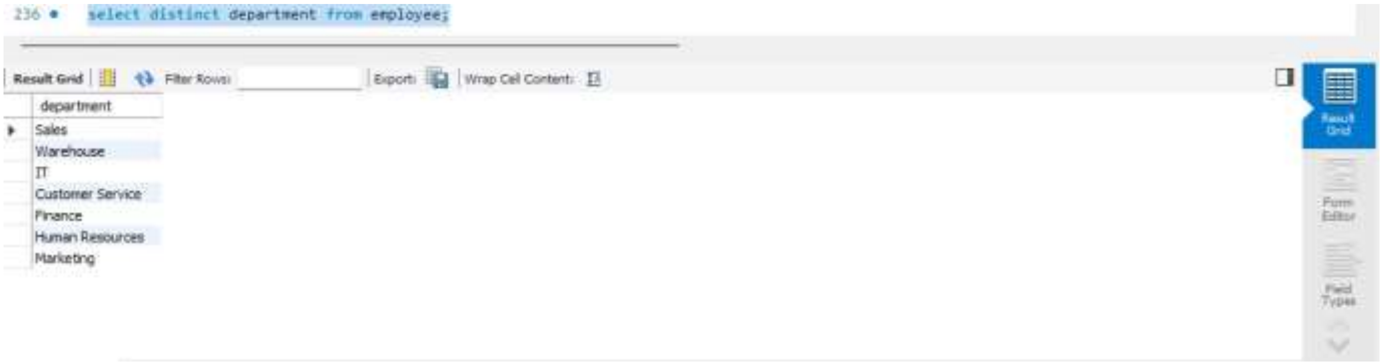
GROUPBY QUERY



```
select Electronic_Tracking_System, count(*) as Tracked from warehouse group by Electronic_Tracking_System;
```

Electronic_Tracking_System	Tracked
Y	6
N	4

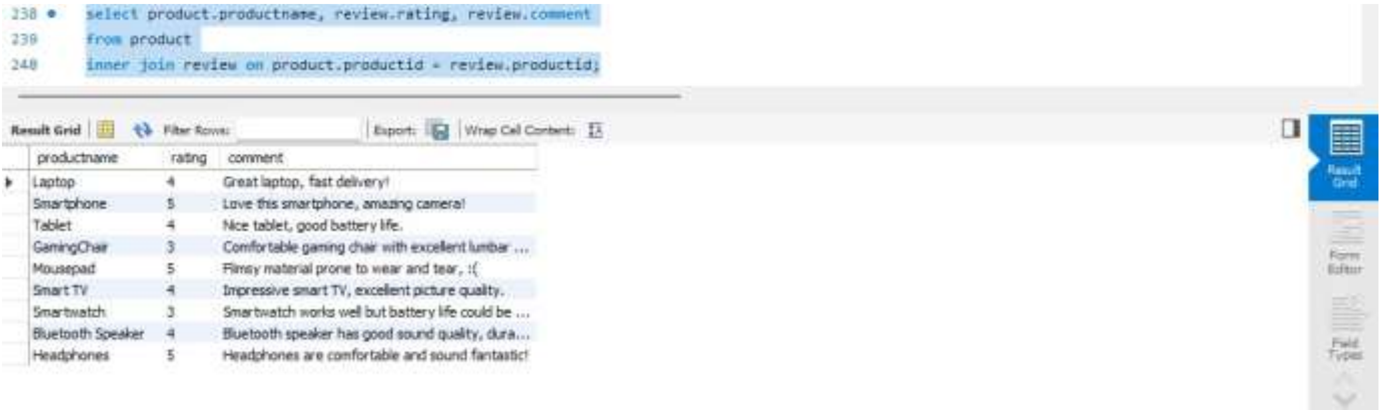
DISTINCT QUERY



```
select distinct department from employee;
```

department
Sales
Warehouse
IT
Customer Service
Finance
Human Resources
Marketing

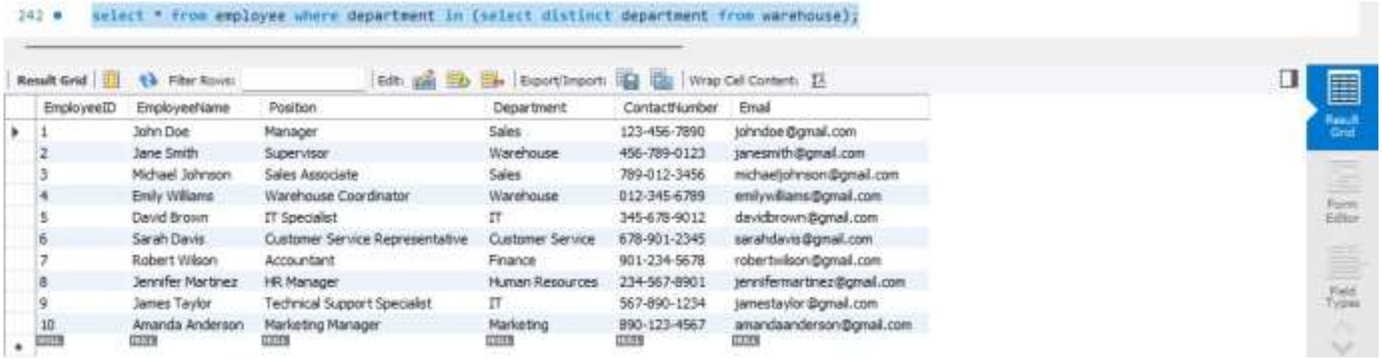
INNER JOIN



```
select product.productname, review.rating, review.comment
from product
inner join review on product.productid = review.productid;
```

productname	rating	comment
Laptop	4	Great laptop, fast delivery!
Smartphone	5	Love this smartphone, amazing camera!
Tablet	4	Nice tablet, good battery life.
GamingChair	3	Comfortable gaming chair with excellent lumbar ...
Mousepad	5	Flimsy material prone to wear and tear, :(
Smart TV	4	Impressive smart TV, excellent picture quality.
Smartwatch	3	Smartwatch works well but battery life could be ...
Bluetooth Speaker	4	Bluetooth speaker has good sound quality, dura...
Headphones	5	Headphones are comfortable and sound fantastic!

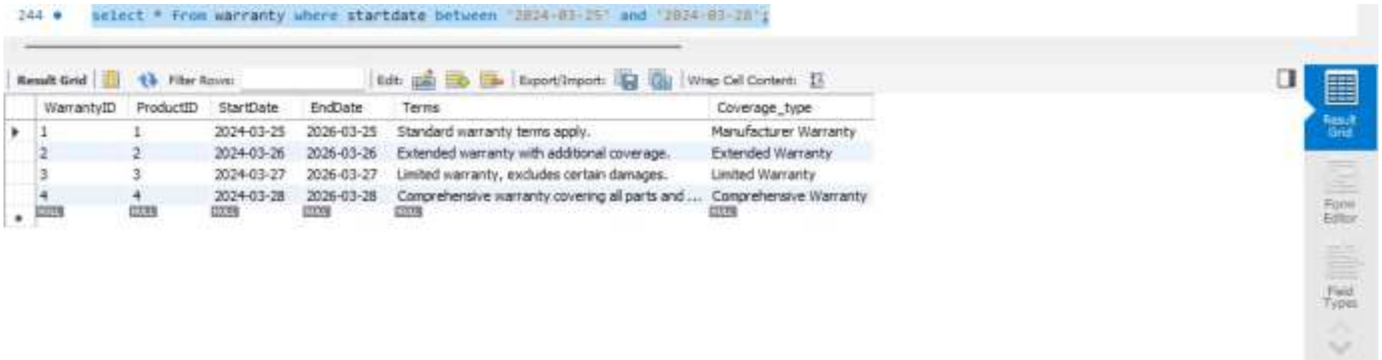
SELECT SUBQUERY



```
select * from employee where department in (select distinct department from warehouse);
```

EmployeeID	EmployeeName	Position	Department	ContactNumber	Email
1	John Doe	Manager	Sales	123-456-7890	johndoe@gmail.com
2	Jane Smith	Supervisor	Warehouse	456-789-0123	janesmith@gmail.com
3	Michael Johnson	Sales Associate	Sales	789-012-3456	michaeljohnson@gmail.com
4	Emily Williams	Warehouse Coordinator	Warehouse	012-345-6789	emilywilliams@gmail.com
5	David Brown	IT Specialist	IT	345-678-9012	davidbrown@gmail.com
6	Sarah Davis	Customer Service Representative	Customer Service	678-901-2345	sarahdavis@gmail.com
7	Robert Wilson	Accountant	Finance	901-234-5678	robertwilson@gmail.com
8	Jennifer Martinez	HR Manager	Human Resources	234-567-8901	jennifermartinez@gmail.com
9	James Taylor	Technical Support Specialist	IT	567-890-1234	jamestaylor@gmail.com
10	Amanda Anderson	Marketing Manager	Marketing	890-123-4567	amandaanderson@gmail.com
NULL	NULL	NULL	NULL	NULL	NULL

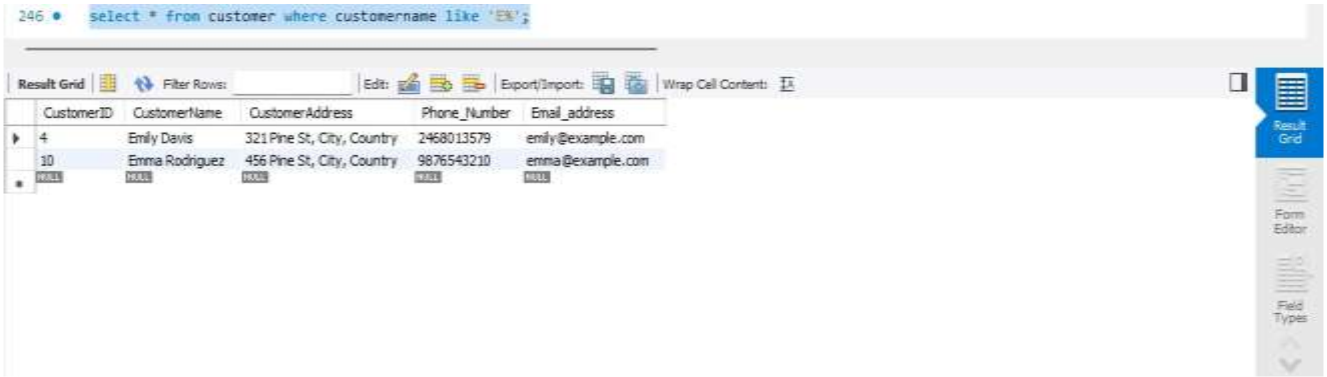
BETWEEN CLAUSE QUERY



```
select * from warranty where startdate between '2024-03-25' and '2024-03-28';
```

WarrantyID	ProductID	StartDate	EndDate	Terms	Coverage_type
1	1	2024-03-25	2026-03-25	Standard warranty terms apply.	Manufacturer Warranty
2	2	2024-03-26	2026-03-26	Extended warranty with additional coverage.	Extended Warranty
3	3	2024-03-27	2026-03-27	Limited warranty, excludes certain damages.	Limited Warranty
4	4	2024-03-28	2026-03-28	Comprehensive warranty covering all parts and ...	Comprehensive Warranty
NULL	NULL	NULL	NULL	NULL	NULL

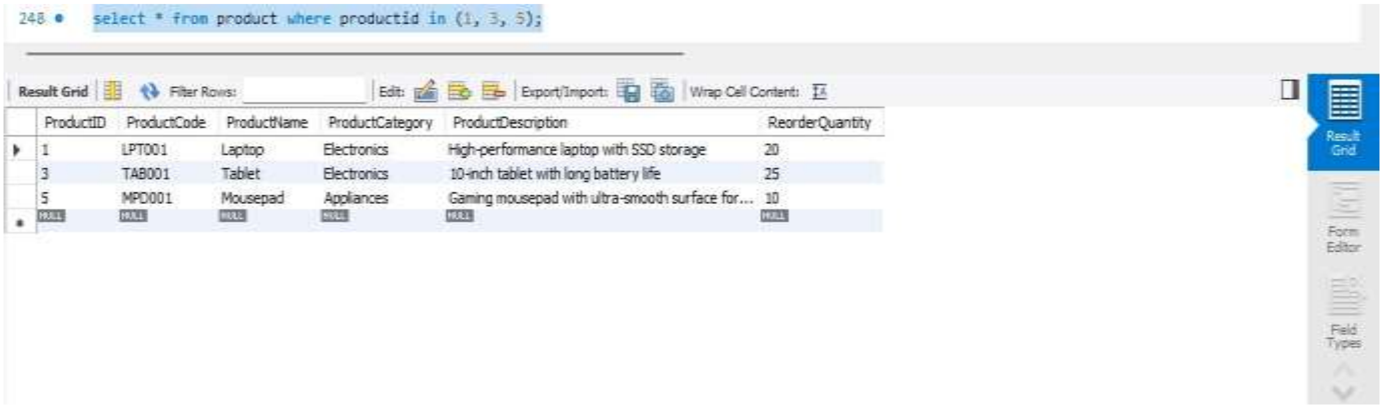
LIKE QUERY



```sql
select * from customer where customername like 'E%';
```

CustomerID	CustomerName	CustomerAddress	Phone_Number	Email_address
4	Emily Davis	321 Pine St, City, Country	2468013579	emily@example.com
10	Emma Rodriguez	456 Pine St, City, Country	9876543210	emma@example.com
NULL	NULL	NULL	NULL	NULL

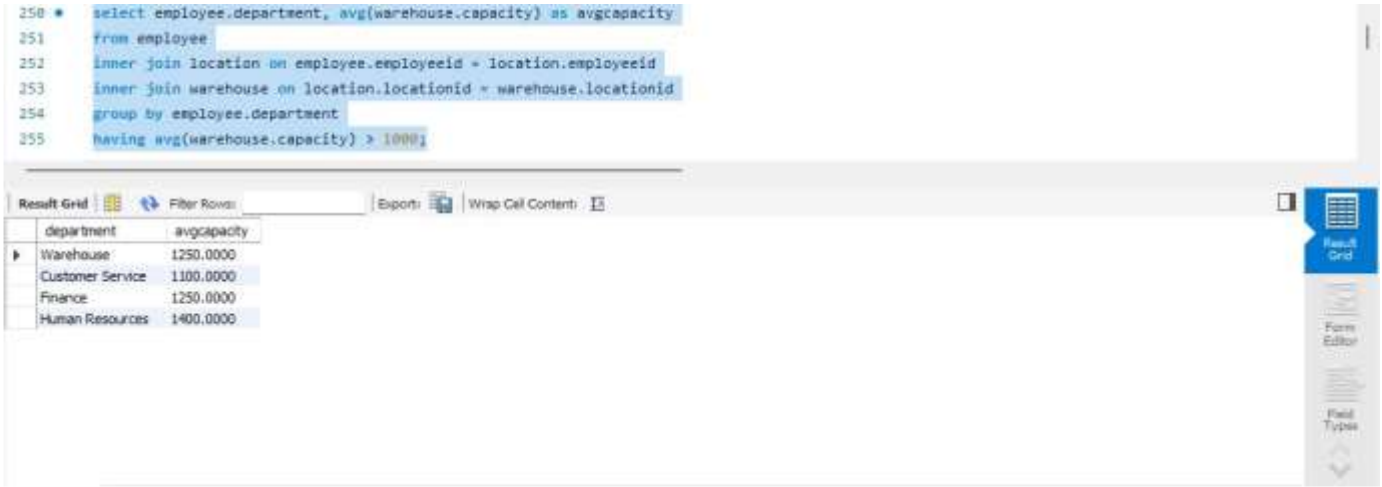
IN CLAUSE (include) QUERY



```sql
select * from product where productid in (1, 3, 5);
```

ProductID	ProductCode	ProductName	ProductCategory	ProductDescription	ReorderQuantity
1	LPT001	Laptop	Electronics	High-performance laptop with SSD storage	20
3	TAB001	Tablet	Electronics	10-inch tablet with long battery life	25
5	MPD001	Mousepad	Appliances	Gaming mousepad with ultra-smooth surface for...	10
NULL	NULL	NULL	NULL	NULL	NULL

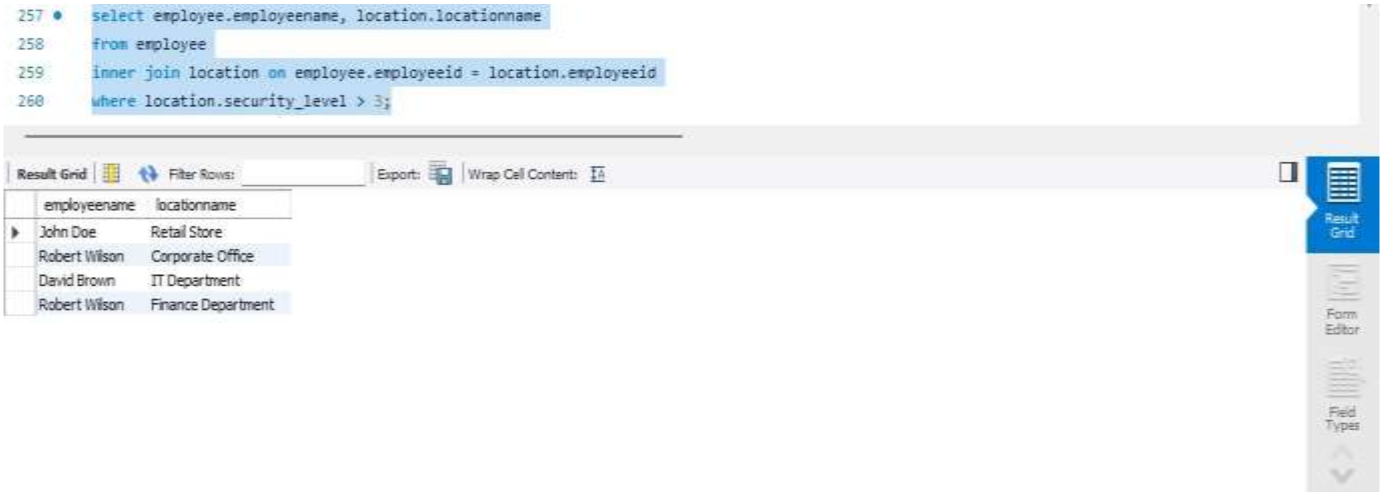
JOIN, GROUP BY & HAVING CLAUSE



```sql
select employee.department, avg(warehouse.capacity) as avgcapacity
from employee
inner join location on employee.employeeid = location.employeeid
inner join warehouse on location.locationid = warehouse.locationid
group by employee.department
having avg(warehouse.capacity) > 1000;
```

department	avgcapacity
Warehouse	1250.0000
Customer Service	1100.0000
Finance	1250.0000
Human Resources	1400.0000

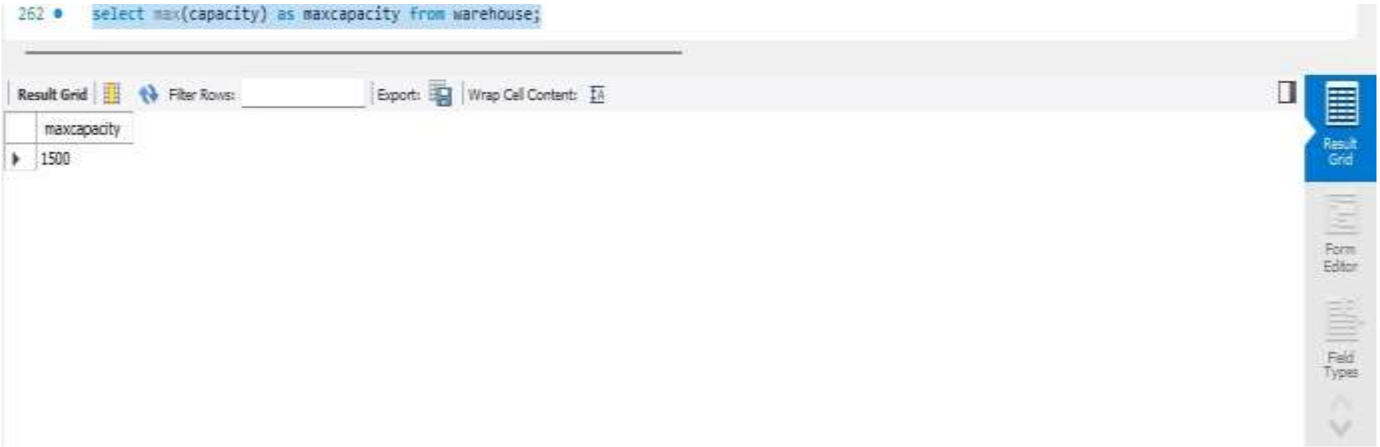
JOIN & WHERE CLAUSE



```
select employee.employeename, location.locationname
from employee
inner join location on employee.employeeid = location.employeeid
where location.security_level > 3;
```

employeename	locationname
John Doe	Retail Store
Robert Wilson	Corporate Office
David Brown	IT Department
Robert Wilson	Finance Department

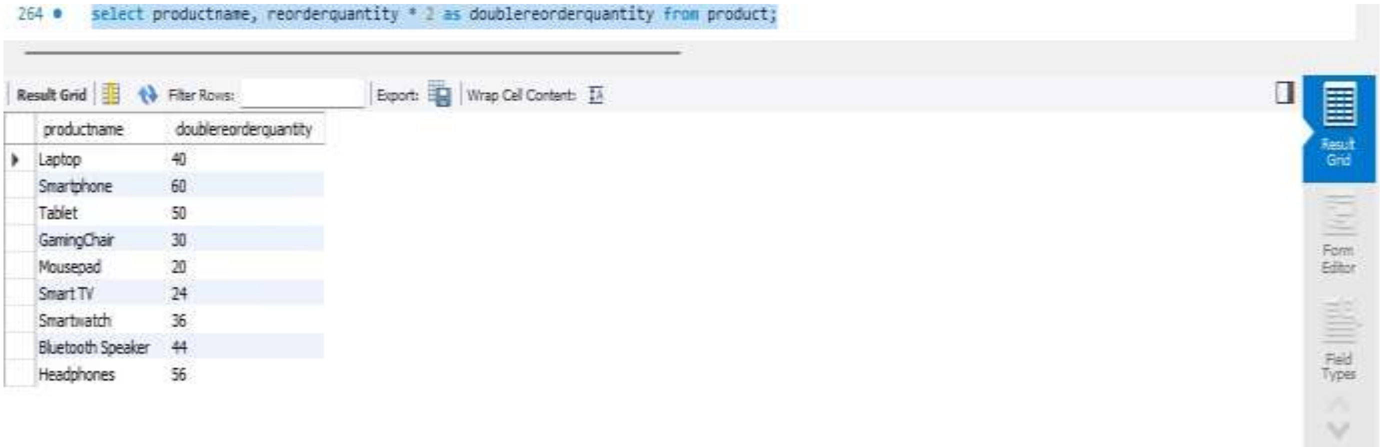
AGGREGATE FUNCTION (Maximum)



```
select max(capacity) as maxcapacity from warehouse;
```

maxcapacity
1500

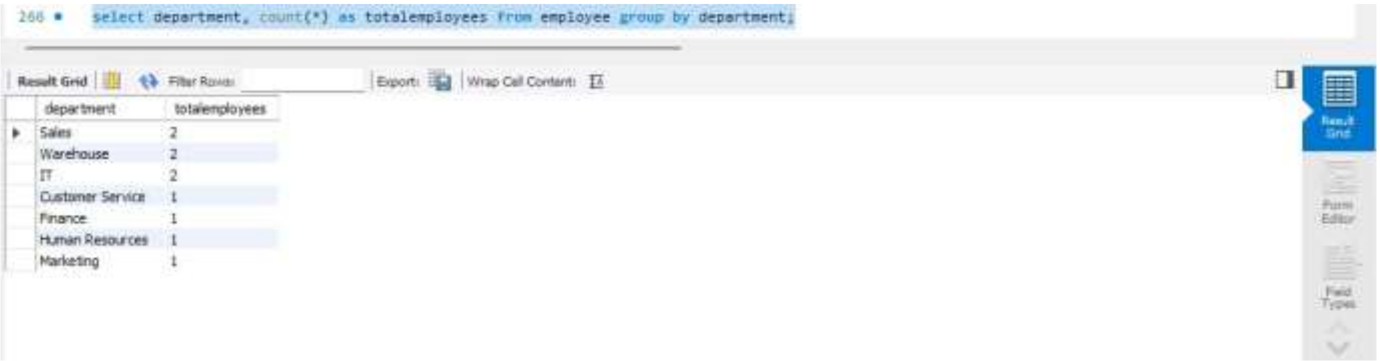
SELECT QUERY ARITHMETIC OPERATORS



```
select productname, reorderquantity * 2 as doublereorderquantity from product;
```

productname	doublereorderquantity
Laptop	40
Smartphone	60
Tablet	50
GamingChair	30
Mousepad	20
Smart TV	24
Smartwatch	36
Bluetooth Speaker	44
Headphones	56

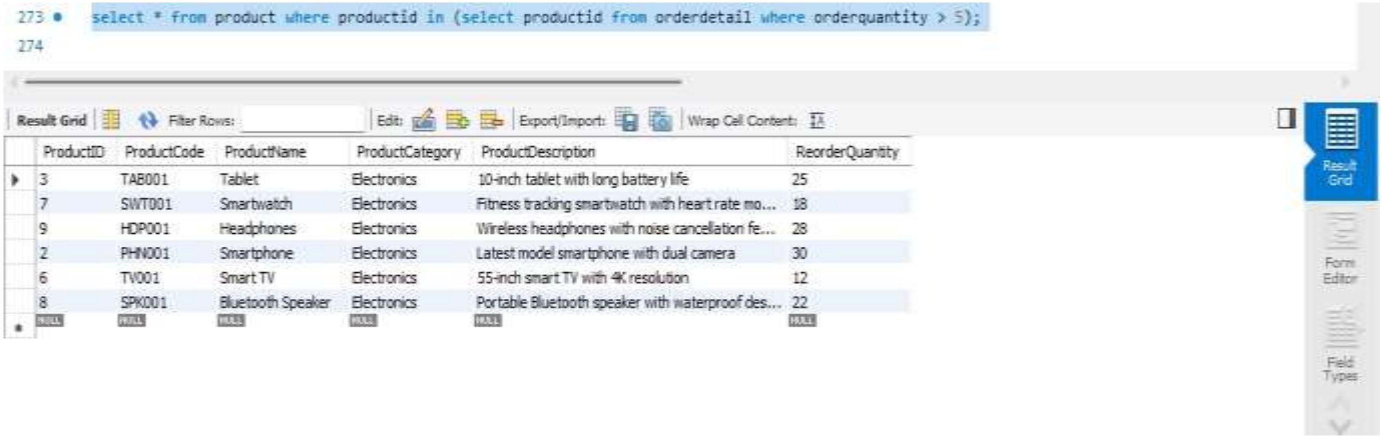
SELECT QUERY WITH AGGREGATE FUNCTION & GROUP BY



```
select department, count(*) as totalemployees from employee group by department;
```

department	totalemployees
Sales	2
Warehouse	2
IT	2
Customer Service	1
Finance	1
Human Resources	1
Marketing	1

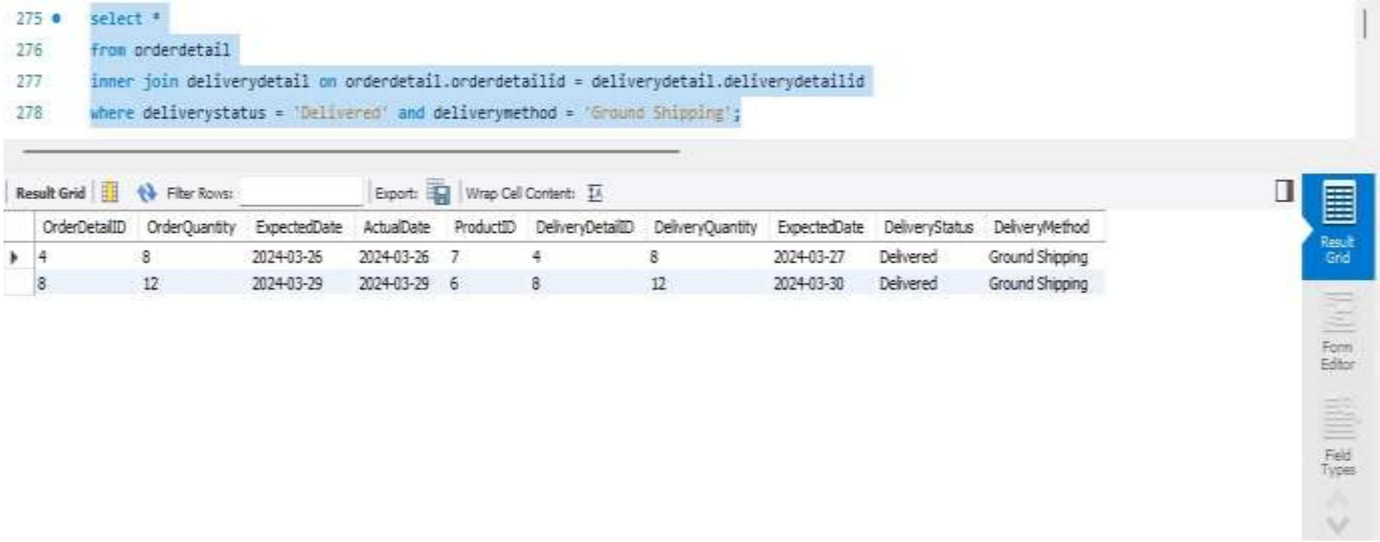
SLECET QUERY WITH INCLUDE & SUBQUERY



```
select * from product where productid in (select productid from orderdetail where orderquantity > 5);
```

ProductID	ProductCode	ProductName	ProductCategory	ProductDescription	ReorderQuantity
3	TAB001	Tablet	Electronics	10-inch tablet with long battery life	25
7	SWT001	Smartwatch	Electronics	Fitness tracking smartwatch with heart rate mo...	18
9	HDP001	Headphones	Electronics	Wireless headphones with noise cancellation fe...	28
2	PHN001	Smartphone	Electronics	Latest model smartphone with dual camera	30
6	TV001	Smart TV	Electronics	55-inch smart TV with 4K resolution	12
8	SPK001	Bluetooth Speaker	Electronics	Portable Bluetooth speaker with waterproof des...	22
NULL	NULL	NULL	NULL	NULL	NULL

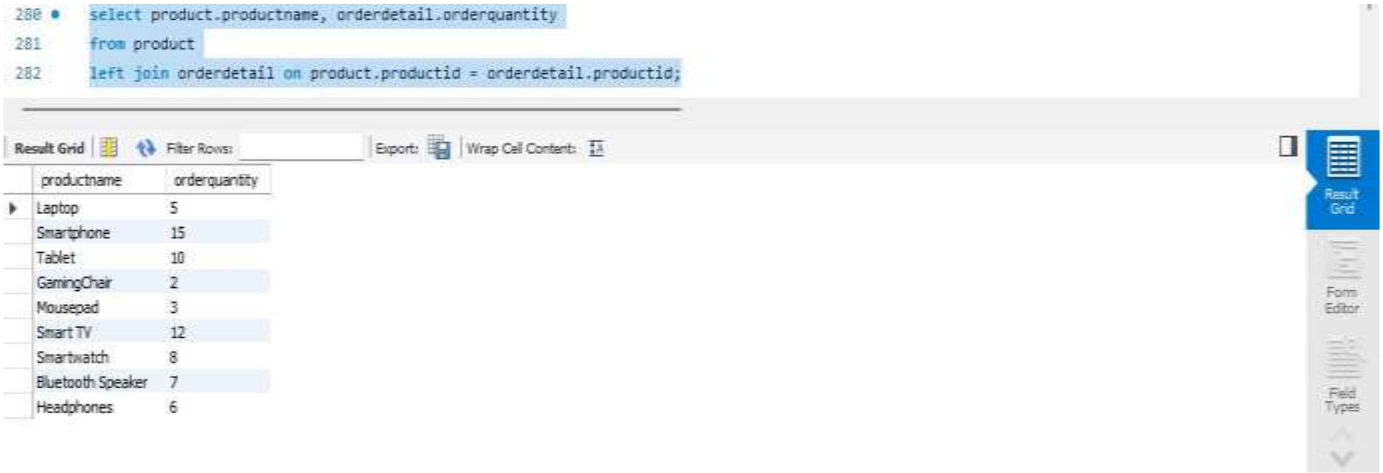
SELECT QUERY WITH JOIN & MULTIPLE CONDITOINS



```
select *
from orderdetail
inner join deliverydetail on orderdetail.orderdetailid = deliverydetail.deliverydetailid
where deliverystatus = 'Delivered' and deliverymethod = 'Ground Shipping';
```

OrderDetailID	OrderQuantity	ExpectedDate	ActualDate	ProductID	DeliveryDetailID	DeliveryQuantity	ExpectedDate	DeliveryStatus	DeliveryMethod
4	8	2024-03-26	2024-03-26	7	4	8	2024-03-27	Delivered	Ground Shipping
8	12	2024-03-29	2024-03-29	6	8	12	2024-03-30	Delivered	Ground Shipping

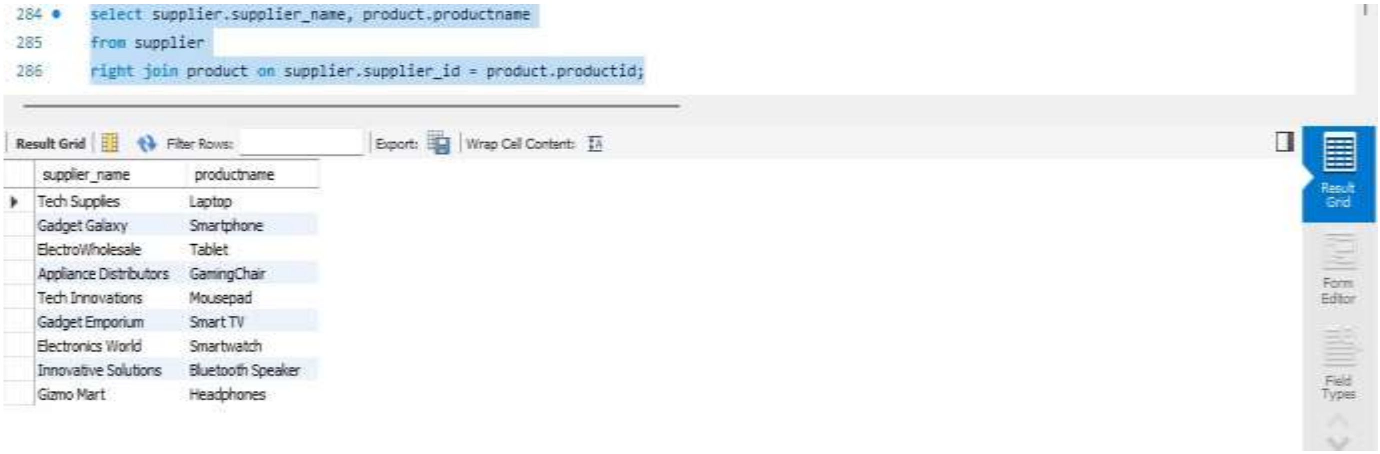
LEFT JOIN



```sql
select product.productname, orderdetail.orderquantity
from product
left join orderdetail on product.productid = orderdetail.productid;
```

productname	orderquantity
Laptop	5
Smartphone	15
Tablet	10
GamingChair	2
Mousepad	3
Smart TV	12
Smartwatch	8
Bluetooth Speaker	7
Headphones	6

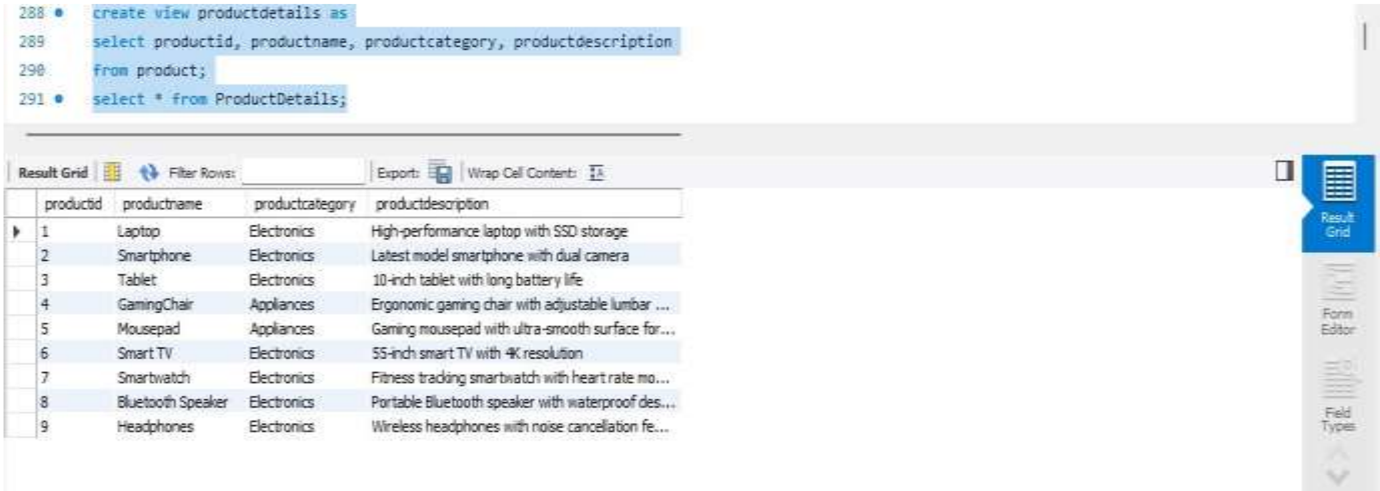
RIGHT JOIN



```sql
select supplier.supplier_name, product.productname
from supplier
right join product on supplier.supplier_id = product.productid;
```

supplier_name	productname
Tech Supplies	Laptop
Gadget Galaxy	Smartphone
ElectroWholesale	Tablet
Appliance Distributors	GamingChair
Tech Innovations	Mousepad
Gadget Emporium	Smart TV
Electronics World	Smartwatch
Innovative Solutions	Bluetooth Speaker
Gizmo Mart	Headphones

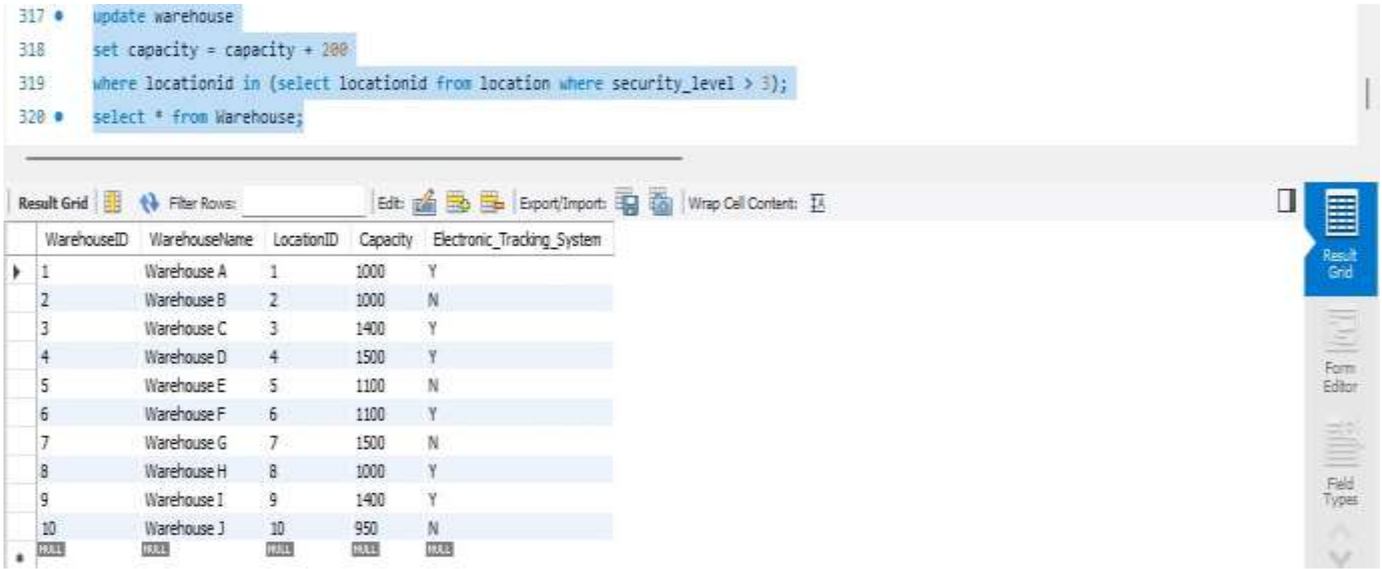
CREATING VIEW OF A TABLE



```sql
create view productdetails as
select productid, productname, productcategory, productdescription
from product;
select * from ProductDetails;
```

productid	productname	productcategory	productdescription
1	Laptop	Electronics	High-performance laptop with SSD storage
2	Smartphone	Electronics	Latest model smartphone with dual camera
3	Tablet	Electronics	10-inch tablet with long battery life
4	GamingChair	Appliances	Ergonomic gaming chair with adjustable lumbar ...
5	Mousepad	Appliances	Gaming mousepad with ultra-smooth surface for...
6	Smart TV	Electronics	55-inch smart TV with 4K resolution
7	Smartwatch	Electronics	Fitness tracking smartwatch with heart rate mo...
8	Bluetooth Speaker	Electronics	Portable Bluetooth speaker with waterproof des...
9	Headphones	Electronics	Wireless headphones with noise cancellation fe...

UPDATE QUERY WITH SUBQUERY IN WHERE CLAUSE



```
update warehouse
set capacity = capacity + 200
where locationid in (select locationid from location where security_level > 3);
select * from Warehouse;
```

WarehouseID	WarehouseName	LocationID	Capacity	Electronic_Tracking_System
1	Warehouse A	1	1000	Y
2	Warehouse B	2	1000	N
3	Warehouse C	3	1400	Y
4	Warehouse D	4	1500	Y
5	Warehouse E	5	1100	N
6	Warehouse F	6	1100	Y
7	Warehouse G	7	1500	N
8	Warehouse H	8	1000	Y
9	Warehouse I	9	1400	Y
10	Warehouse J	10	950	N
NULL	NULL	NULL	NULL	NULL

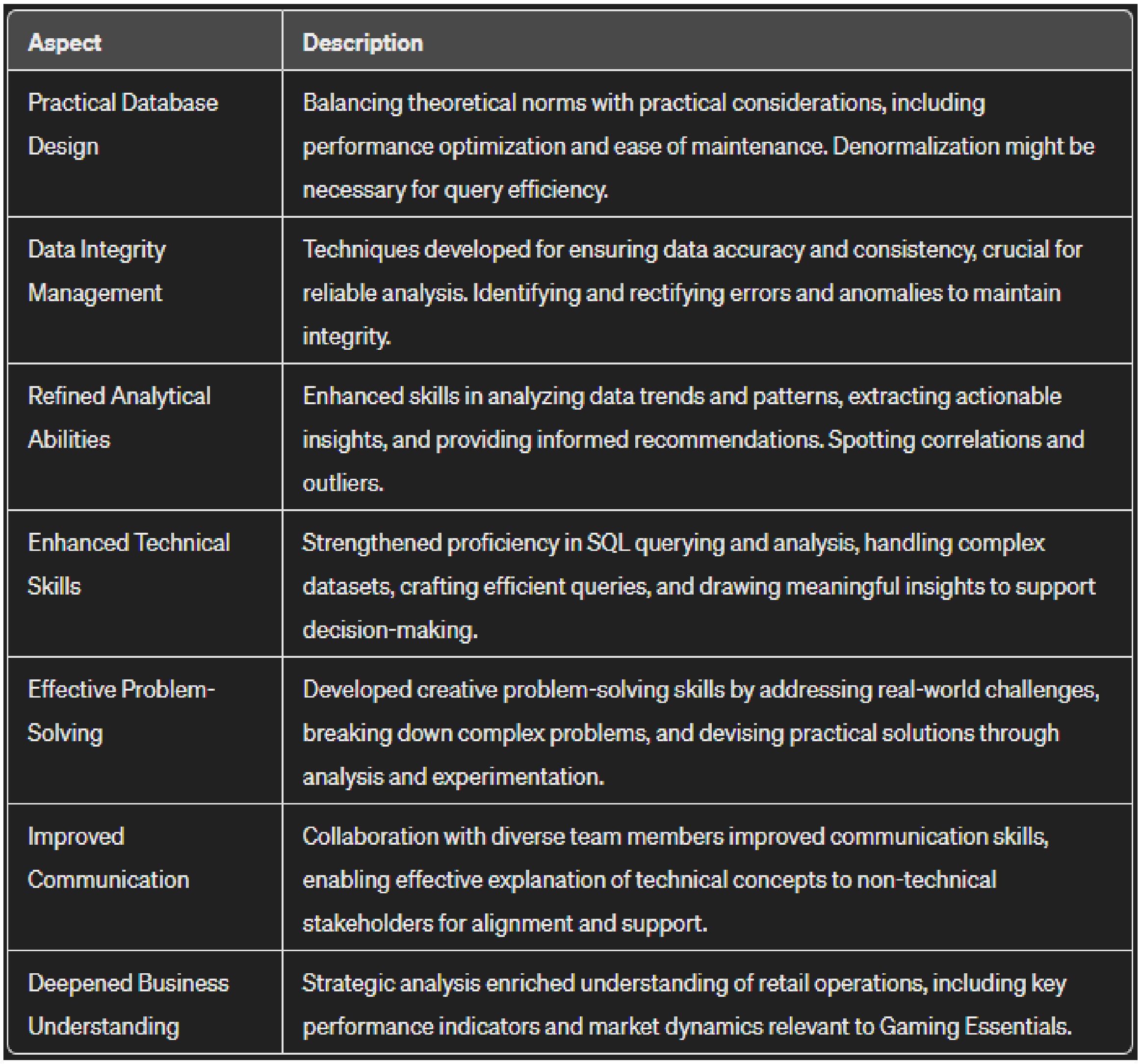
VII. Project demonstration

Tools/software/ libraries used:

- MySql Workbench
- Draw.io

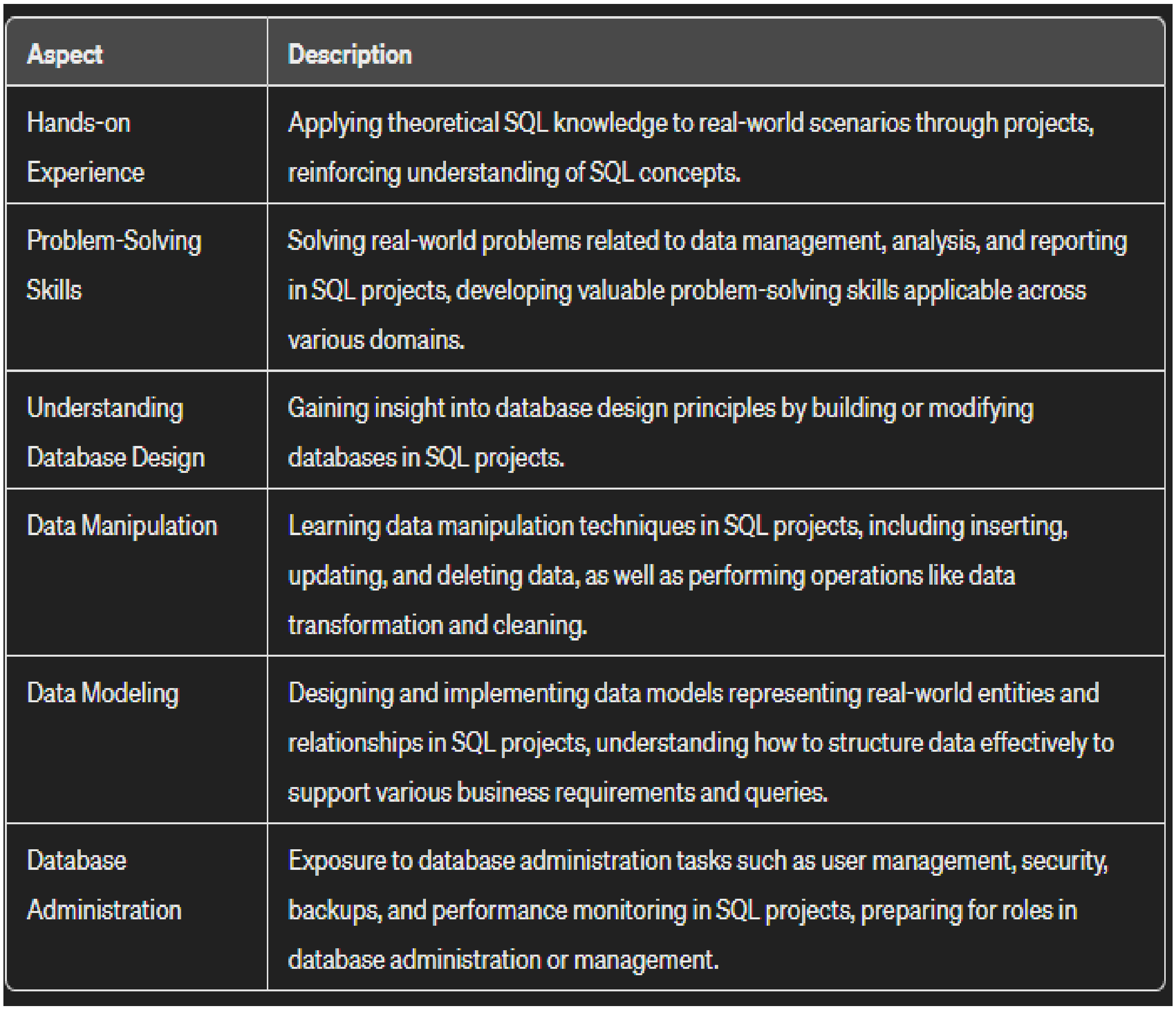
VIII. Self -Learning beyond classroom

:



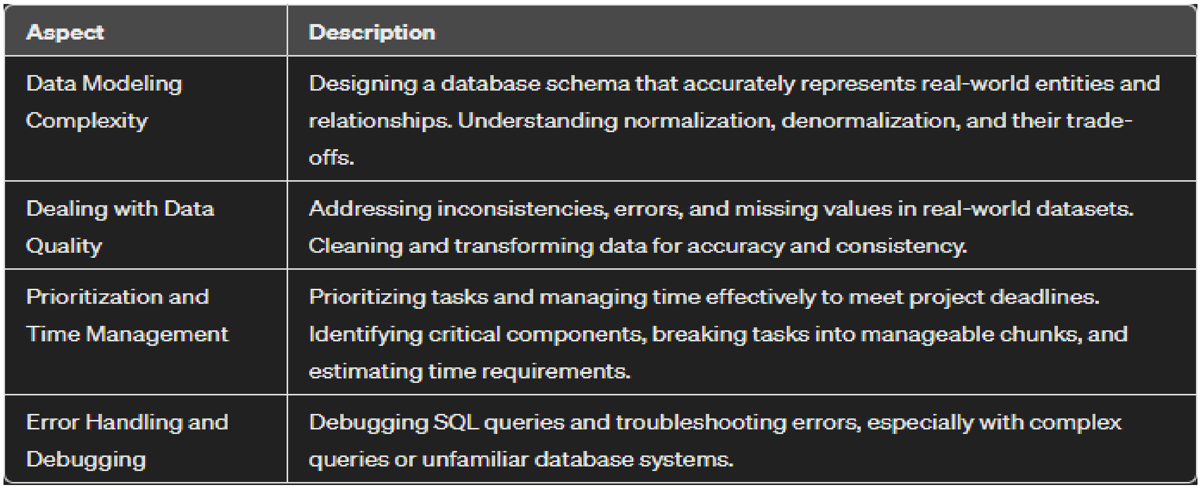
Aspect	Description
Practical Database Design	Balancing theoretical norms with practical considerations, including performance optimization and ease of maintenance. Denormalization might be necessary for query efficiency.
Data Integrity Management	Techniques developed for ensuring data accuracy and consistency, crucial for reliable analysis. Identifying and rectifying errors and anomalies to maintain integrity.
Refined Analytical Abilities	Enhanced skills in analyzing data trends and patterns, extracting actionable insights, and providing informed recommendations. Spotting correlations and outliers.
Enhanced Technical Skills	Strengthened proficiency in SQL querying and analysis, handling complex datasets, crafting efficient queries, and drawing meaningful insights to support decision-making.
Effective Problem-Solving	Developed creative problem-solving skills by addressing real-world challenges, breaking down complex problems, and devising practical solutions through analysis and experimentation.
Improved Communication	Collaboration with diverse team members improved communication skills, enabling effective explanation of technical concepts to non-technical stakeholders for alignment and support.
Deepened Business Understanding	Strategic analysis enriched understanding of retail operations, including key performance indicators and market dynamics relevant to Gaming Essentials.

IX. Learning from the Project



Aspect	Description
Hands-on Experience	Applying theoretical SQL knowledge to real-world scenarios through projects, reinforcing understanding of SQL concepts.
Problem-Solving Skills	Solving real-world problems related to data management, analysis, and reporting in SQL projects, developing valuable problem-solving skills applicable across various domains.
Understanding Database Design	Gaining insight into database design principles by building or modifying databases in SQL projects.
Data Manipulation	Learning data manipulation techniques in SQL projects, including inserting, updating, and deleting data, as well as performing operations like data transformation and cleaning.
Data Modeling	Designing and implementing data models representing real-world entities and relationships in SQL projects, understanding how to structure data effectively to support various business requirements and queries.
Database Administration	Exposure to database administration tasks such as user management, security, backups, and performance monitoring in SQL projects, preparing for roles in database administration or management.

X. Challenges Faced



Aspect	Description
Data Modeling Complexity	Designing a database schema that accurately represents real-world entities and relationships. Understanding normalization, denormalization, and their trade-offs.
Dealing with Data Quality	Addressing inconsistencies, errors, and missing values in real-world datasets. Cleaning and transforming data for accuracy and consistency.
Prioritization and Time Management	Prioritizing tasks and managing time effectively to meet project deadlines. Identifying critical components, breaking tasks into manageable chunks, and estimating time requirements.
Error Handling and Debugging	Debugging SQL queries and troubleshooting errors, especially with complex queries or unfamiliar database systems.

XI. Conclusion

The Electronic Management System project for Gaming Essentials has provided invaluable insights and skills in SQL and database management. Hands-on experience solidified our understanding of SQL concepts in real-world gaming scenarios. Problem-solving abilities were honed navigating data management challenges. Building databases for Gaming Essentials deepened our understanding of database design principles tailored to gaming retail.

Lastly, essential skills in prioritization and time management were instilled, vital for navigating the dynamic gaming market. In conclusion, this project equipped me to excel in electronic management systems for Gaming Essentials and database management within the gaming industry.