

CIS 321 PROJECT MILESTONE (2): Mapped Tables Filled with data and SQL Query Statements

Project Group Number (in Blackboard): Group (4)

Section Number: section (4)

Project Title: Technical Services Corporation

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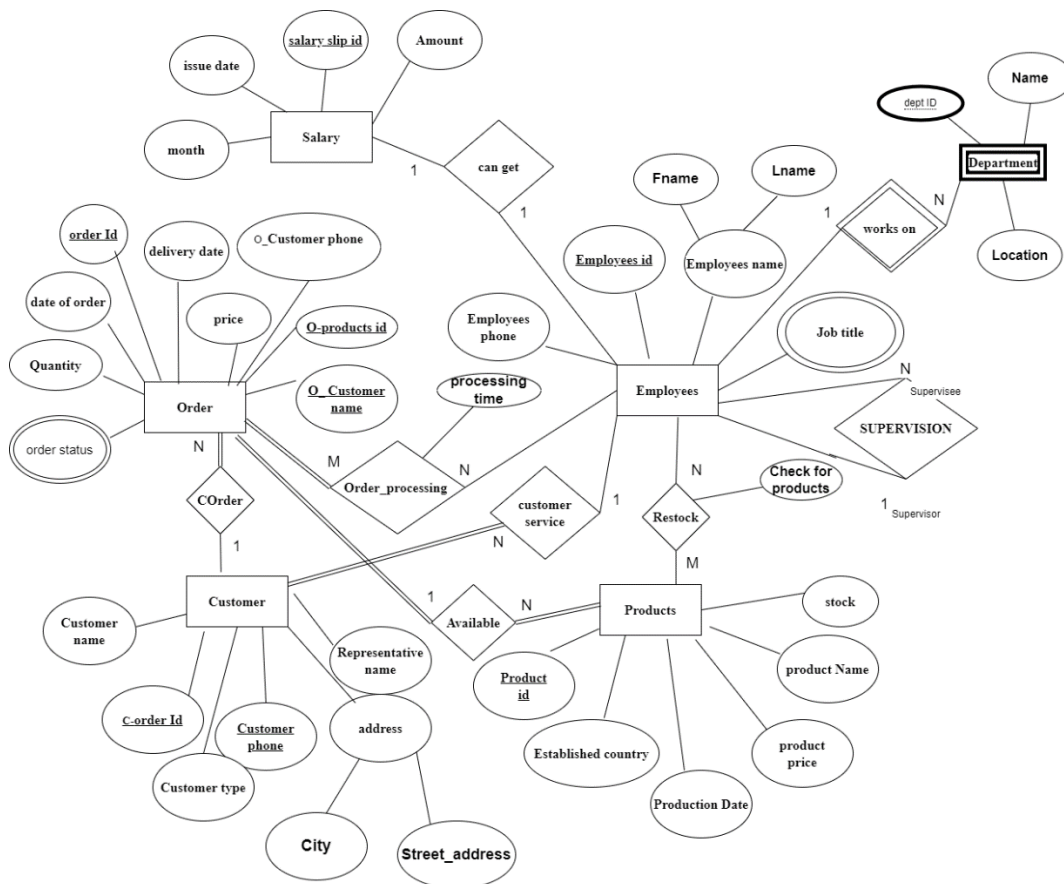
Date of Submission: Week 13, Sunday

CIS321- Project Milestone 2



Mapped Tables Filled with data (5 marks)

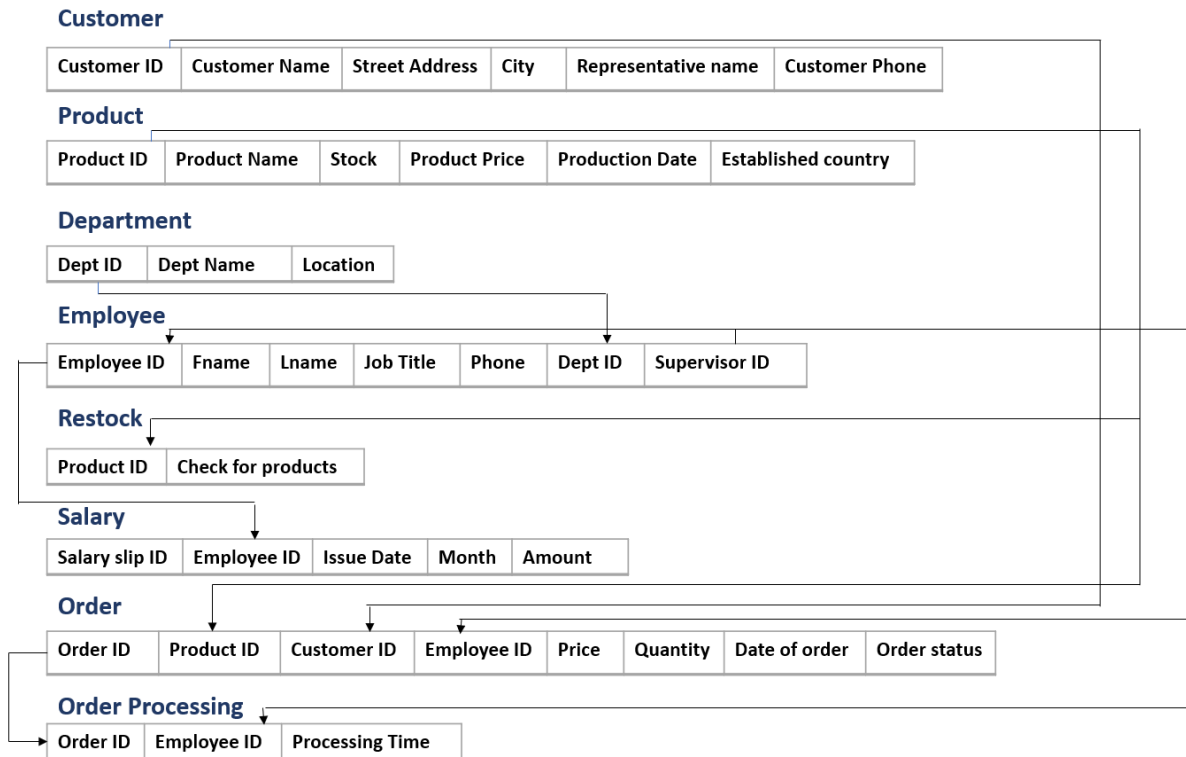
ER Diagram:



Assumptions:

- A customer can have many orders
- There can be 1 or many products in one order
- Employee works on a single department
- A department can have many employees
- Each employee has only one salary
- Many Employees check many products

MAPPING of your ER diagram into Database Schema:



Tables with full specification of data types for all fields ,constraint and Keys :

Customer Table:

Column Name	Datatype	Keys	Required
Customer_id	Int	Primary key	Yes(Not null)
Customer_name	Varchar	-	yes
Street_address	Varchar	-	yes
City	Varchar	-	yes
Representative_name	Varchar	-	yes
Customer_phone	Varchar	-	yes

Products Table:

Column Name	Datatype	Keys	Required
Product ID	Int	Primary key	yes
Product_name	Varchar	-	yes
Stock	Int	-	yes
Product_price	Int	-	yes
Production_date	Date	-	yes
Established_country	Varchar	-	yes

Department Table:

Column Name	Datatype	Keys	Required
Dept_id	Int	Primary key	yes
Dept_name	Varchar	-	Yes
Location	varchar	-	Yes

Employee Table:

Column Name	Datatype	Keys	Required
Employee ID	Int	Primary key	yes
FName	Varchar	-	Yes
LName	Varchar	-	Yes
Job title	Varchar	-	yes
Employee_phone	Varchar	-	Yes
Dept_id	Int	Foreign Key(department)	Yes
Supervisor_id	Int	Foreign key(Employee)	YES

Restock Table

Column Name	Datatype	Keys	Required
Employee ID	Int	PK, FK	yes
Product ID	Int	PK, FK	Yes
Check_for_products	Varchar	-	Yes

Salary Table:

Column Name	Datatype	Keys	Required
Salary_slip_id	Int	Primary key	yes
Employee ID	Int	Foreign key	Yes
Issue_date	Date	-	Yes
Month	Varchar	-	yes
Amount	int	-	Yes

Orders table

Column Name	Datatype	Keys	Required
Order ID	Int	Primary key	yes
Product ID	Int	Foreign key	Yes
Customer ID	Int	Foreign key	Yes
Employee ID	Int	Foreign key	yes
price	int	-	Yes
Quantity	int	-	Yes
Date of Order	date	-	yes
Order Status	varchar	-	Yes

Order Processing Table:

Column Name	Datatype	Keys	Required
Order ID	Int	Primary key	yes
Product ID	Int	Foreign key	Yes
Customer ID	Int	Foreign key	Yes



Fill Tables with 10 records:

Customer Data:

customer_id	customer_name	street_address	city	representative_name	customer_phone
1	Saleh Aleid	Prince Mateeb street	alahsa	Saleh	0554543523
2	Abdullah almoussa	King Abdullah street	Dammam	Abdullah	0554543513
3	Ali Alessa	Prince Sultan street	Abha	Ali	0504543553
4	Murtada Alsaleh	King Faisal street	Alqassim	Murtada	0554543153
5	Mohammed Alahmed	King Abdulaziz street	Riyadh	Mohammed	052454353
6	Naif ALqhatani	Abu bakir street	Diriyah	Naif	0531454353
7	Hamad Alzaimel	Albader street	dawadmi	Hamad	0544543323
8	Khalid Alzamil	king Fahad street	Hofuf	Khaild	0554554453
9	Fahad Almoale	king Abdullah street	Jhumra	Fahad	0554543543
10	Hassan Alzaier	Althalea street	AlUla	Hassan	055411353
11	Hussin Almounsri	Alkhaldiya	Jhumra	Hussin	0554543522
12	Naeem Oedah	ALzahra	Riyadh	Naeem	0554543577
13	Huussin Alkatoot	ALazizah	Alahsa	Hussin	0554543500
14	Alwaleed Alzariq	Albndriyah street	Abha	ALwaleed	0554543522
15	Othman Alomatiri	Alamalmeen street	Diriyah	Otman	0554543511
16	Omar almousa	Omar khatab street	Makkah	Omar	0554543512
17	Nawaf Albader	HAMZA street	Tabuk	Nawaf	0554543530
18	Abdualzez Albdewi	ALamoira Street	Taif	Abdualzez	0554543531
19	Imam Abdulrahma...	ALRakah	Dammam	Hammad	0135882323
20	King Saud University	Bakeryah street	Riyadh	Saleh	0135882311
NULL	NULL	NULL	NULL	NULL	NULL

Product Data:

product_id	product_name	stock	product_price	production_date	established_country
1	network switch	54	2888	2021-09-18	Japan
2	Router 3.0	72	3001	2022-03-30	China
3	SATA HDD 500	780	47	2021-11-20	Russia
4	SSD 512 Sanddisk	550	22	2022-02-08	China
5	Projector F121	82	290	2021-12-19	Poland
6	Touchpad 432	87	200	2022-03-06	Barbados
7	gaming keyboard	84	500	2021-06-14	France
8	DG Scanner 3.0	66	390	2021-05-29	Indonesia
9	Inkjet Printer Alpha	71	360	2021-11-11	Russia
10	Webcam 3.0	66	440	2021-07-07	Russia
11	Network Interface...	60	37	2021-10-10	China
12	Wireless Repeater	93	340	2021-09-22	Indonesia
13	Bunch router	77	260	2021-10-23	Philippines
14	Specialized camera	56	31	2021-09-29	Kenya
15	Light Pen	85	310	2022-03-05	Czech Republic
16	Arduino 564	71	470	2021-11-04	China
17	Enterprise Windows	670	20	2022-02-15	Poland
18	Office Products	80	460	2021-11-02	United States
19	iGraphics tool	57	370	2022-04-10	United States
20	SharpCode tool	56	380	2022-03-02	Czech Republic
NULL	NULL	NULL	NULL	NULL	NULL

Department Data:

dept_id	dept_name	location
1	Business Development	Alkobar
2	Legal	ALHasa
3	Human Resources	Alkobar
4	Accounting	Alkobar
5	Research and Development	Alkobar
6	Human Resources	Alkobar
7	Human Resources	Alkobar
8	Engineering	Alkobar
9	Business Development	ALHasa
10	Services	ALHasa
NULL	NULL	NULL

Employee Data:

employee_id	Fname	Lname	Job_Title	Employee_Phone	dept_id	supervisor_id
1	Khalifah	Alzwaimel	Senior Financial Analyst	0550459053	2	NULL
2	Yahya	ALhabboub	Compensation Analyst	0550459022	9	1
3	Adam	Almednai	Financial Advisor	0550459011	9	2
4	Turki	Alabjii	VP Product Management	0550459012	10	1
5	Muhnnad	AlQhatani	Practitioner	0550459021	5	3
6	Ibrahim	Alqossabi	Automation Specialist I	0550459099	1	4
7	Hussain	AlUsman	Technical Writer	0550459012	5	2
8	Sabar	AlAhmad	Financial Analyst	0550459022	4	5
9	Nawaf	AlUmer	manager	Financial Analyst	5	7
10	Khalid	Aleid	Product Engineer	0550459044	7	3
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Restock Data:

Employee_id	product_id	Check_for_products
1	13	OK
1	18	empty
2	7	Available
2	19	required
4	2	Available
4	20	in stock
5	7	empty
5	9	required
5	12	in stock
5	13	empty
5	15	required
6	4	required
6	10	empty
6	16	in stock
7	5	OK
7	19	in stock
8	4	in stock
8	8	required
10	3	Available
10	10	required
NULL	NULL	NULL

Salary data:

salary_slip_id	Employee_id	issue_date	Month	Amount
1	1	2021-11-16	feb	28006
2	2	2021-07-12	april	35600
3	3	2022-02-02	jan	19500
4	4	2021-10-17	march	17200
5	5	2022-01-11	feb	26008
6	6	2021-04-29	jan	24002
7	7	2022-02-05	jan	24900
8	8	2021-06-28	july	13000
9	9	2021-07-07	feb	32300

Orders Data:

Order_id	product_id	customer_id	Employee_id	price	quantity	date_of_order	order_status
3	1	9	NULL	3400	163	2022-04-03	In progress
4	9	11	6	48	900	2022-03-28	Pending
5	1	19	3	45	882	2022-04-09	Pending
6	15	18	NULL	822	306	2022-04-08	Pending
7	12	14	3	23	774	2022-03-14	Pending
8	2	19	7	22	932	2022-03-22	Waiting
9	10	11	4	34	836	2022-03-29	Completed
10	3	17	1	23	873	2022-04-04	In progress
11	8	6	3	24	991	2022-04-08	In progress
12	5	12	2	27	790	2022-04-01	Waiting
13	7	14	8	40	803	2022-04-10	Completed
14	11	15	3	16	994	2022-04-01	Pending
15	18	3	4	20	761	2022-03-21	Pending
16	8	12	9	23	809	2022-04-10	Completed
17	10	14	5	45	717	2022-04-07	In progress
18	9	12	2	26	443	2022-03-17	Completed
19	4	3	3	23	446	2022-04-10	Waiting
20	18	15	4	15	826	2022-03-19	In progress
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

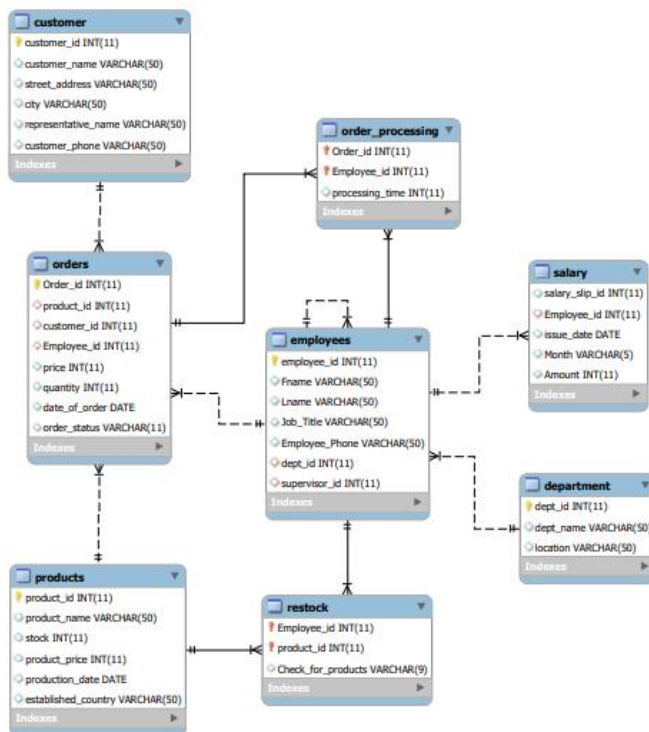
Order Processing Data:

	Order_id	Employee_id	processing_time
▶	3	1	6
	3	9	3
	4	2	6
	4	7	6
	7	7	4
	12	3	5
	12	6	7
	13	1	1
	14	10	1
	15	1	5
*	NULL	NULL	NULL



SQL Query Statements (5 marks)

❖ Database Diagram:





1. Show All Employees whose job title is technical writer and Financial Analyst.

select * From Employees

WHERE Job_Title IN ('Technical Writer', 'Financial Analyst');

OUTPUT:

employee_id	Fname	Lname	Job_Title	Employee_Phone	dept_id	supervisor_id
7	Hussain	AlUsman	Technical Writer	0550459012	5	2
8	Sabar	AlAhmad	Financial Analyst	0550459022	4	5

2. Show all employees whose salary between 10000-25000.

SELECT * from employees inner join salary on employees.employee_id =

salary.Employee_id where amount BETWEEN 10000 AND 25000

OUTPUT:

employee_id	Fname	Lname	Job_Title	Employee_Phone	dept_id	supervisor_id	salary_slip_id	Employee_id	issue_date	Month	Amount
3	Adam	Almednai	Financial Advisor	0550459011	9	2	3	3	2022-02-02	jan	19500
4	Turki	Alabji	VP Product Management	0550459012	10	1	4	4	2021-10-17	march	17200
6	Ibrahim	Alqossabi	Automation Specialist I	0550459099	1	4	6	6	2021-04-29	jan	24002
7	Hussain	AlUsman	Technical Writer	0550459012	5	2	7	7	2022-02-05	jan	24900
8	Sabar	AlAhmad	Financial Analyst	0550459022	4	5	8	8	2021-06-28	july	13000

3. Show all customer with union and city of jhumra.

SQL:

select * from customer UNION SELECT * from customer where city = 'Jhumra'

OUTPUT:

customer_id	customer_name	street_address	city	representative_name	customer_phone
1	Saleh Aleid	Prince Mateeb street	alahsa	Saleh	0554543523
2	Abdullah al moussa	King Abdullah street	Dammam	Abdullah	0554543513
3	Ali Alessa	Prince Sultan street	Abha	Ali	0504543553
4	Murtada Alsaleh	King Faisal street	Alqassim	Murtada	0554543153
5	Mohammed Alahmed	King Abdulaziz street	Riyadh	Mohammed	052454353
6	Naif ALqhatani	Abu bakir street	Diriyah	Naif	0531454353
7	Hamad Alzawaimel	Albader street	dawadmi	Hamad	0544543323
8	Khalid Alzamil	king Fahad street	Hofuf	Khaild	0554554453
9	Fahad Almoale	king Abdullah street	Jhumra	Fahad	0554543543
10	Hassan Alzaier	Altahlea street	AlUla	Hassan	055411353
11	Hussin Almounsri	Alkhaldiya	Jhumra	Hussin	0554543522
12	Naeem Oedah	ALzahra	Riyadh	Naeem	0554543577
13	Huussin Alkatoot	ALazizah	Alahsa	Hussin	0554543500
14	Alwaleed Alzariq	Albndriayh street	Abha	ALwaleed	0554543522
15	Othman ALomatiri	Alamalmeen street	Diriyah	Otman	0554543511
16	Omar almousa	Omar khatab street	Makkah	Omar	0554543512
17	Nawaf Albader	HAMZA street	Tabuk	Nawaf	0554543530
18	Abdulazez Albdewi	ALamoira Street	Taif	Abdualzez	0554543531
19	Imam Abdualrahma...	ALRakah	Dammam	Hammad	0135882323
20	King Saud University	Bakeryah street	Riyadh	Saleh	0135882311

4. Show average salary of all employees

Select AVG(amount) As Average_salary from salary;

OUTPUT:

Result Grid	
	Average_salary
▶	24501.7778

5. Show the top 3 employees taking maximum salary.

SQL:

```
SELECT employees.*, Amount from employees inner join salary on
employees.employee_id = salary.Employee_id

ORDER BY Amount desc limit 3
```

OUTPUT:

employee_id	Fname	Lname	Job_Title	Employee_Phone	dept_id	supervisor_id	Amount
2	Yahya	ALhabboub	Compensation Analyst	0550459022	9	1	35600
9	Nawaf	AlUmer	manager	0550459011	5	7	32300
1	Khalifah	Alzwaimel	Senior Financial Analyst	0550459053	2	NULL	28006

6. Show all orders with missing order date of pending orders.

SQL:

```
SELECT * FROM `Orders` WHERE date_of_order IS NOT NULL and order_status =
'Pending';
```

OUTPUT:

Order_id	product_id	customer_id	Employee_id	price	quantity	date_of_order	order_status
4	9	11	6	48	900	2022-03-28	Pending
5	1	19	3	45	882	2022-04-09	Pending
6	15	18	NULL	822	306	2022-04-08	Pending
7	12	14	3	23	774	2022-03-14	Pending
14	11	15	3	16	994	2022-04-01	Pending
15	18	3	4	20	761	2022-03-21	Pending



7. What is the average product price of Russia.

SQL:

Select AVG(product_price) FROM products where established_country = 'Russia';

OUTPUT:

AVG(product_price)
282.3333

8. show the total bill for each customer including customer name and details.

SQL:

SELECT customer.customer_id, customer_name, price*quantity total from customer

inner join orders on orders.customer_id = customer.customer_id

order by total desc

OUTPUT:

customer_id	customer_name	total
9	Fahad Almoale	554200
18	Abdulalzez Albdewi	251532
11	Hussin Almounsri	43200
19	Imam Abdulrahman university	39690
14	Alwaleed Alzariq	32265
14	Alwaleed Alzariq	32120
11	Hussin Almounsri	28424
6	Naif ALqhatani	23784
12	Naeem Oedah	21330
19	Imam Abdulrahman university	20504
17	Nawaf Albader	20079
12	Naeem Oedah	18607
14	Alwaleed Alzariq	17802
15	Othman ALomatiri	15904
3	Ali Alessa	15220
15	Othman ALomatiri	12390
12	Naeem Oedah	11518
3	Ali Alessa	10258

9. Show Employees where they work in a Department. Using INTERSECT

SQL:

SELECT Fname

FROM Employees

INTERSECT;

SELECT dept_name;

FROM Department;

OUTPUT:

dept_name
Business Development
Legal
Human Resources
Accounting
Research and Development
Human Resources
Human Resources
Engineering
Business Development
Services



10. Show the total salary for each department having working employees with total amount above 20000.

SQL:

```
SELECT e.dept_id, dept_name, SUM(amount) as total_amount FROM employees e
inner join department d on e.dept_id = d.dept_id
inner join salary s on s.Employee_id = e.employee_id
group by e.dept_id, dept_name
having total_amount > 20000
```

OUTPUT:

dept_id	dept_name	total_amount
2	Legal	28006
9	Business Development	55100
5	Research and Development	83208
1	Business Development	24002

11. Show the customers whose name start with k and A

SQL:

```
SELECT * FROM `customer` WHERE `customer_name` LIKE 'K%' OR  
`customer_name` LIKE 'A%'
```

OUTPUT:

customer_id	customer_name	street_address	city	representative_name	customer_phone
2	Abdullah al moussa	King Abdullah street	Dammam	Abdullah	0554543513
3	Ali Alessa	Prince Sultan street	Abha	Ali	0504543553
8	Khalid Alzamil	king Fahad street	Hofuf	Khaild	0554554453
14	Alwaleed Alzariq	Albndriyah street	Abha	ALwaleed	0554543522
18	Abdulalzeze Albdewi	ALamoira Street	Taif	Abdualzeze	0554543531
20	King Saud University	Abdulalzeze Albdewi	Riyadh	Saleh	0135882311
NULL	NULL	NULL	NULL	NULL	NULL

12. Show all information of customer with their orders.

SQL:

```
SELECT * FROM `orders` inner join customer on orders.customer_id =  
customer.customer_id
```

OUTPUT:

Order_id	product_id	customer_id	employee_id	price	quantity	date_of_order	order_status	customer_id	customer_name	street_address	city	representative_name	customer_phone
3	1	9	163	3400	163	2022-04-03	In progress	9	Fahad Almoale	king Abdullah street	Jhurma	Fahad	0554543543
4	9	11	48	900	48	2022-03-28	Pending	11	Hussin Almounsi	Alkhadiya	Jhurma	Hussin	0554543522
5	1	19	3	45	882	2022-04-09	Pending	19	Imam Abdulrahman university	ALRakah	Dammam	Hammad	0135882323
6	15	18	822	306	822	2022-04-08	Pending	18	Abdulalzeze Albdewi	ALamoira Street	Taif	Abdualzeze	0554543531
7	12	14	3	23	774	2022-03-14	Pending	14	Alwaleed Alzariq	Albndriyah street	Abha	ALwaleed	0554543522
8	2	19	7	22	932	2022-03-22	Waiting	19	Imam Abdulrahman university	ALRakah	Dammam	Hammad	0135882323
9	10	11	4	34	836	2022-03-29	Completed	11	Hussin Almounsi	Alkhadiya	Jhurma	Hussin	0554543522
10	3	17	1	23	873	2022-04-04	In progress	17	Nawaf Albadar	HAMZA street	Tabuk	Nawaf	0554543530
11	8	6	3	24	991	2022-04-08	In progress	6	Naif Alqhatani	Abu bakr street	Diriyah	Naif	0531454353
12	5	12	2	27	790	2022-04-01	Waiting	12	Naeem Oedah	ALzakra	Riyadh	Naeem	0554543577
13	7	14	8	40	803	2022-04-10	Completed	14	Alwaleed Alzariq	Albndriyah street	Abha	ALwaleed	0554543522
14	11	15	3	16	994	2022-04-01	Pending	15	Othman Alomatri	Alanahneen street	Diriyah	Othman	0554543511
15	18	3	4	20	761	2022-03-21	Pending	3	Ali Alessa	Prince Sultan street	Abha	Ali	0504543553
16	8	12	9	23	809	2022-04-10	Completed	12	Naeem Oedah	ALzakra	Riyadh	Naeem	0554543577
17	10	14	5	45	717	2022-04-07	In progress	14	Alwaleed Alzariq	Albndriyah street	Abha	ALwaleed	0554543522
18	9	12	2	26	443	2022-03-17	Completed	12	Naeem Oedah	ALzakra	Riyadh	Naeem	0554543577
19	4	3	3	23	446	2022-04-10	Waiting	3	Ali Alessa	Prince Sultan street	Abha	Ali	0504543553
20	18	15	4	15	826	2022-03-19	In progress	15	Othman Alomatri	Alanahneen street	Diriyah	Othman	0554543511



13. Update all the prices of product to 10 dollar extra.

SQL:

```
UPDATE products set `product_price` = `product_price` +10 where `product_name`  
LIKE 'C%'
```

OUTPUT:

61 02:21:55 UPDATE products set 'product_price' = 'product_price' +10 where 'product_name' LIKE 'C%'

14. Delete all customers with no orders

SQL:

```
delete from customer where 'customer_id' NOT IN (  
SELECT 'customer_id' from orders
```

);OUTPUT:

66 02:24:34 delete from customer where 'customer_id' NOT IN (SELECT 'customer_id' from orders)

15. list of employees and their supervisor.

SQL:

SELECT a.employee_id AS "Emp_ID",a.Fname AS "Employee Name",

b.employee_id AS "Supervisor ID",b.Fname AS "Supervisor Name"

FROM employees a, employees b

WHERE a.supervisor_id = b.employee_id;

OUTPUT:

Emp_ID	Employee Name	Supervisor ID	Supervisor Name
2	Yahya	1	Khalifah
3	Adam	2	Yahya
4	Turki	1	Khalifah
5	Muhnnad	3	Adam
6	Ibrahim	4	Turki
7	Hussain	2	Yahya
8	Sabar	5	Muhnnad
9	Nawaf	7	Hussain
10	Khalid	3	Adam

16- Show SUM salary of all employees

SQL:

SELECT SUM(Amount)

From Salary;

OUTPUT:

	SUM(Amount)
▶	220516

17- show the status of prdouct

SQL:

SELECT Products.product_name,Restock.Check_for_products

From Restock

CROSS JOIN Products;

OUTPUT:

network switch	Available
network switch	required
Router 3.0	OK
Router 3.0	empty
Router 3.0	Available

18-create a view to show all employees with their departments.

#SQL:

**create view employee_dept AS select e.*, d.dept_name, d.location from employees e
inner join department d on e.dept_id = d.dept_id;**

Result Grid								
Filter Rows: <input type="text"/> Export: Wrap Cell Content:								
	employee_id	Fname	Lname	Job_Title	Employee_Phone	dept_id	supervisor_id	dept_name
▶	1	Khalifah	Alzwaime	Senior Financial Analyst	0550459053	2		Legal
	2	Yahya	ALhabboub	Compensation Analyst	0550459022	9	1	Business Development
	3	Adam	Almednai	Financial Advisor	0550459011	9	2	Business Development
	4	Turki	Alabjji	VP Product Management	0550459012	10	1	Services
	5	Muhnnad	AlQhatani	Practitioner	0550459021	5	3	Research and Development
	6	Ibrahim	Alqossabi	Automation Specialist I	0550459099	1	4	Business Development
	7	Hussain	AlUsman	Technical Writer	0550459012	5	2	Research and Development
	8	Sabar	AlAhmad	Financial Analyst	0550459022	4	5	Accounting
	9	Nawaf	AlUmer	manager	0550459011	5	7	Research and Development
	10	Khalid	Aleid	Product Engineer	0550459044	7	3	Human Resources