

Beauty Salon

INTRODUCTION TO DATABASE (CCCS215
PROJECT)

UNIVERSITY OF JEDDAH
COLLEGE OF COMPUTER SCIENCE AND
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THE PROBLEM:

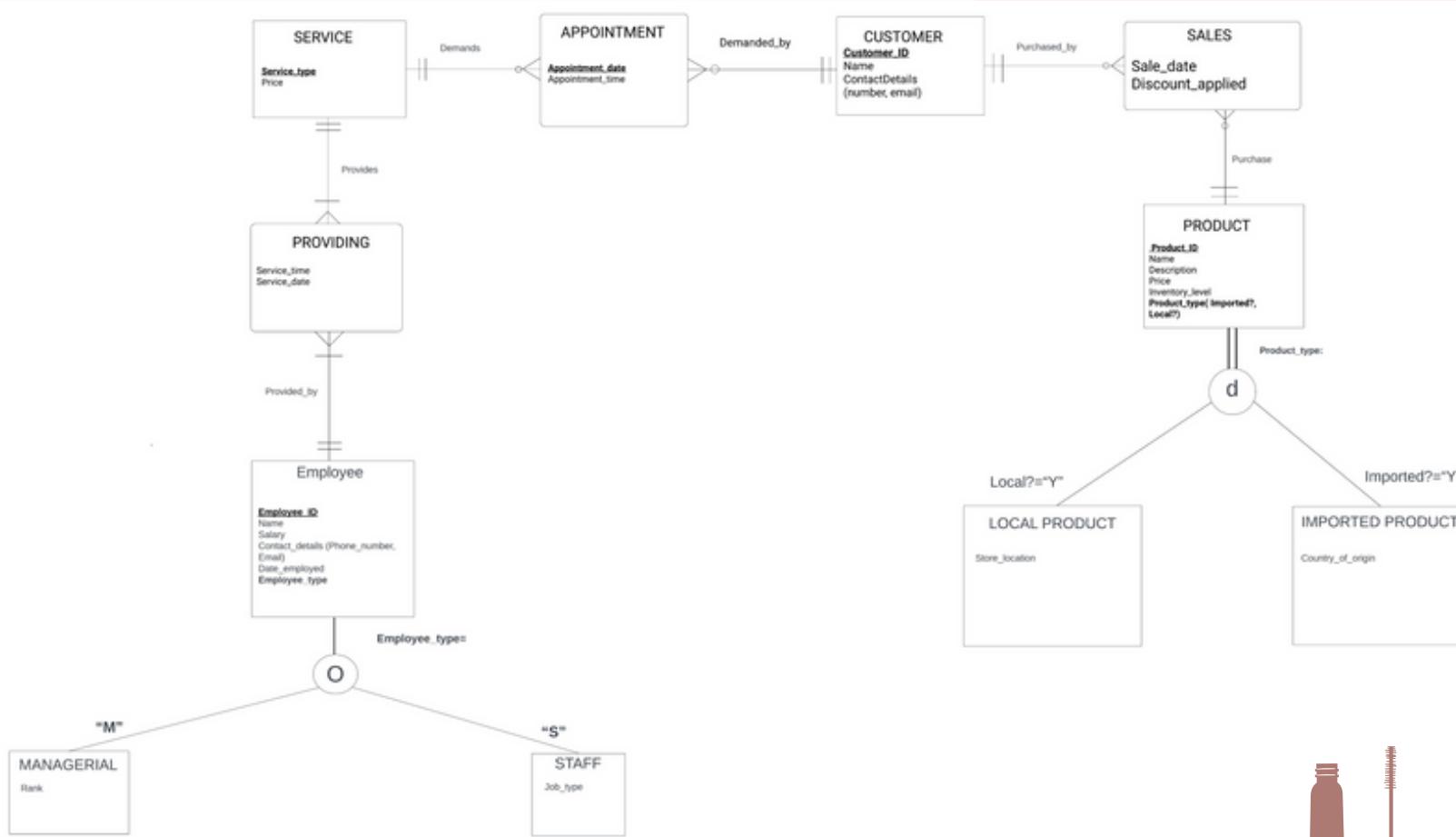
OVERCROWDING AND LONG WAITING TIMES IN BEAUTY SALONS BEFORE EVENTS SUCH AS EID, WEDDINGS AND OTHER SPECIAL OCCASIONS.

THIS ISSUE NEGATIVELY IMPACTS BOTH CLIENTS AND SALON OWNERS, RESULTING IN A POOR CUSTOMER EXPERIENCE AND POTENTIAL LOSS OF BUSINESS.

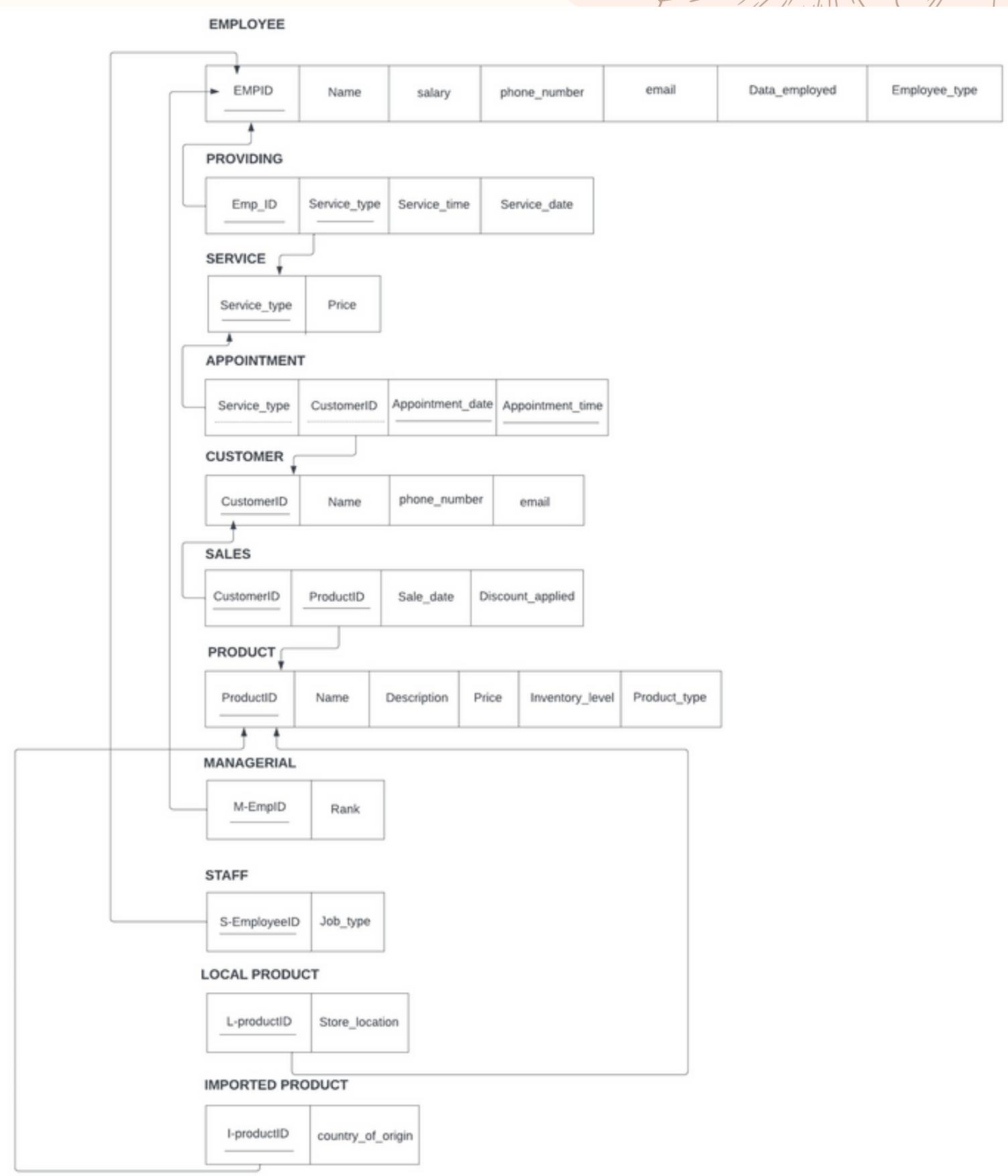
SOLUTION:

TO ADDRESS THIS PROBLEM, A WEB-BASED APPLICATION WILL BE DEVELOPED. THE APPLICATION WILL ALLOW USERS TO VIEW AVAILABLE APPOINTMENTS, SERVICES AND OFFERS, ENABLING THEM TO CHOOSE WHAT SUITS THEM AND BOOK THE APPROPRIATE TIME FOR THEIR APPOINTMENT. MAIN FEATURES AND BENEFITS OF THE PROPOSED APPLICATION

ENTITY RELATIONSHIP MODEL (E-R MODEL)



RELATIONAL MODEL (UNF-R-MODEL)



NORMALIZATION



UNNNORMALIZED

EMPLOYEE(EmplID, Name, salary, phone_number, email, Data_employed, Employee_type)

PROVIDING(EmplID, Service_type, Service_time, Service_date,)

SERVICE(Service_type, Price)

APPOINTMENT(Service_type, CustomerID,
Appointment_date, Appointment_time)

CUSTOMER(CustomerID, Name, phone_number, email)

SALES(CustomerID, ProductID, Sale_date, Discount_applied)

PRODUCT(ProductID, Name, Discription, Price, Inventory_level, Product_type)

MANAGERIAL(M-EMPID, Rank)

STAFF(S-EmployeeID, Job_type)

LOCAL PRODUCT(L-productID, Store_location)

IMPORTED PRODUCT(I-productID, country_of_origin)

1NF

All the relationships mentioned exist in 1NF (First Normal Form)

Atomicity: Each attribute in a relation contains only indivisible values. In other words, attributes cannot be further divided. Looking at the given relationships: In the EMPLOYEE relation, each attribute (EmplID, Name, Salary, etc.) contains only one value, satisfying atomicity.

Unique Rows: Each row in a relation represents a unique combination of values.

Orderless Rows: The order of rows in a relation does not matter, and each row is considered independent. In the given relationships, the order of rows does not affect the relationships or the data they represent.

2NF

ALL RELATIONSHIPS ALREADY EXIST IN 2NF EXCEPT FOR TWO RELATIONSHIPS, NAMELY

- APPOINTMENT BECAUSE THERE IS A PARTIAL DEPENDENCE IN IT AS APPOINTMENT_TIME ONLY DEPENDS ON APPOINTMENT_DATE**

AND ALSO

- SALES BECAUSE THERE IS A PARTIAL DEPENDENCE ON IT, AS DISCOUNT_APPLIED DEPENDS ONLY ON PRODUCTID**

**THE SOLUTION IS DECOMPOSITION
RELATIONSHIP TO TWO, WE'LL SEE THAT
ON THE NEXT PAGE**

2NF

EMPLOYEE(EmpID, Name, salary, phone_number, email,

Data_employed, Employee_type)

PROVIDING(EmpID, Service_type, Service_time,
Service_date)

SERVICE(Service_type, Price)

APPOINTMENT(Service_type, CustomerID,
Appointment_date)

APPOINTMENT_DATE(Appointment_date,
Appointment_time)

CUSTOMER(CustomerID, Name, phone_number, email)

SALES(CustomerID, ProductID, Sale_date)

SALES_DISCOUNT(ProductID, Discount_applied)

PRODUCT(ProductID, Name, Discription, Price,
Inventory_level, Product_type)

MANAGERIAL(M-EMPID, Rank)

STAFF(S-EmployeeID, Job_type)

LOCAL PRODUCT(L-productID, Store_location)

IMPORTED PRODUCT(I-productID,country_of_origin)

3NF

Conditions for 3NF:

1. The schema should be in 2NF.

2. There should be no transitive dependencies where a non-key attribute depends on another non-key attribute.

All relationships already exist in 3NF except

- **PROVIDING** Because there is a non-essential attribute that depends on it

Another non-key attribute is Service_time which depends on Service_date

Also

- **APPOINTMENT** because there is a non-essential attribute that depends on it

Another non-essential attribute is Service_type which depends on CustomerID

The solution is to establish a new relationship

You will see it on the next page

3NF

EMPLOYEE(EmpID, Name, salary, phone_number, email,

Data_employed, Employee_type)

PROVIDING(EmpID, Service_type, Service_time,

Service_date)

SERVICE_DATE(Service_time, Service_date)

SERVICE(Service_type, Price)

APPOINTMENT(Service_type, Appointment_date)

APPOINTMENT_type (Service_type, CustomerID)

APPOINTMENT_DATE(Appointment_date,

Appointment_time)

CUSTOMER(CustomerID, Name, phone_number, email)

SALES(CustomerID, ProductID, Sale_date)

SALES_DISCOUNT(ProductID, Discount_applied)

PRODUCT(ProductID, Name, Description, Price,

Inventory_level, Product_type)

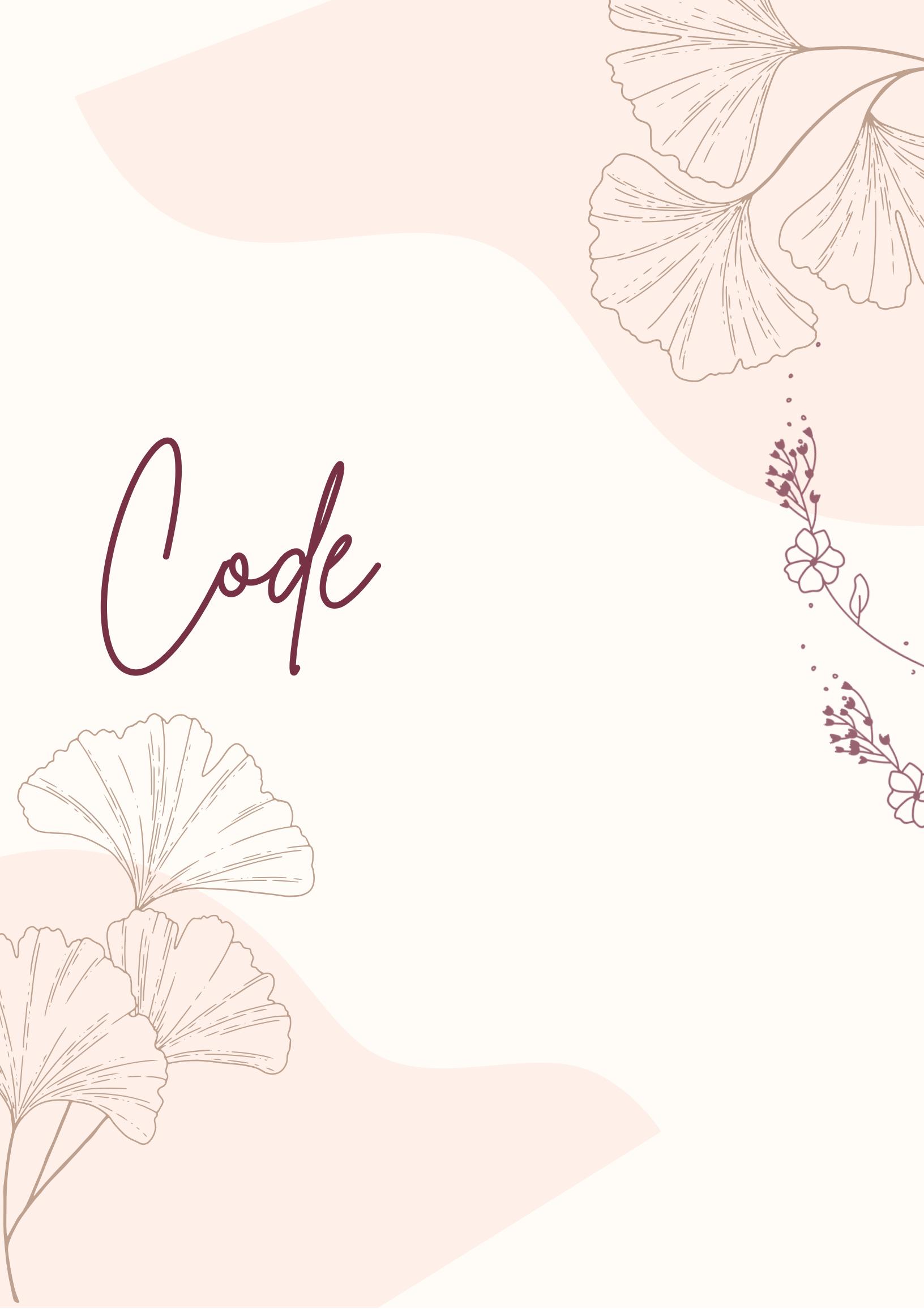
MANAGERIAL(M-EMPID, Rank)

STAFF(S-EmployeeID, Job_type)

LOCAL PRODUCT(L-productID, Store_location)

IMPORTED PRODUCT(I-productID, country_of_origin)

Code



TABLES AND INSERT

```
1 select*from EMPLOYEE;
```

EMPID	NAME	SALARY	PHONE_NUMBER	EMAIL	DATE_EMPLOYED	EMPLOYEE_TYPE
2110115	Jana Alghamdi	60000	1234567890	jana.alghamdi@email.com	01-JAN-23	Manager
2111011	Jana Saleh	55000	9876543210	jana.saleh@email.com	01-FEB-23	Staff
2111985	Maria Jawah	50000	5556667777	maria.jawah@email.com	01-MAR-23	Staff
2119899	Sara	52000	1112223333	sara@email.com	01-APR-23	Staff
21111155	Nouf	48000	4445556666	nouf@email.com	01-MAY-23	Staff
2112222	Darin	70000	1231112222	darin@email.com	01-JUN-23	Manager
2113333	Maya	75000	4564445555	maya@email.com	01-JUL-23	Manager

```
1 select*from Service;
```

SERVICE_TYPE	PRICE
Makeup	600
Hairstyle	700
Haircut	500
Hair Color	800
Nails	550

[Download CSV](#)

5 rows selected.

```
1 select*from APPOINTMENT;
```

```
2
```

SERVICE_TYPE	CUSTOMERID	APPOINTMENT_DATE	APPOINTMENT_TIME
Hair Color	505	25-MAY-23	25-MAY-23 11:00:00.000000 AM
Makeup	501	15-JAN-23	15-JAN-23 10:00:00.000000 AM
Hairstyle	502	20-FEB-23	20-FEB-23 03:30:00.000000 PM
Haircut	503	10-MAR-23	10-MAR-23 12:45:00.000000 PM
Nails	504	05-APR-23	05-APR-23 02:00:00.000000 PM

[Download CSV](#)

5 rows selected.

```
1 select*from CUSTOMER;
```

```
2
```

CUSTOMERID	NAME	PHONE_NUMBER	EMAIL
501	Elaf	5551112222	elaf.customer@email.com
502	Razan	5553334444	razan.customer@email.com
503	Shahad	5555556666	shahad.customer@email.com
504	Lama	5557778888	lama.customer@email.com
505	Joud	5559990000	joud.customer@email.com

[Download CSV](#)

5 rows selected.

```
1 select*from sales;
```

```
2
```

CUSTOMERID	PRODUCTID	DISCOUNT_APPLIED	SALE_DATE
501	111	.1	15-JAN-23
502	112	.05	20-FEB-23
503	113	.2	10-MAR-23
504	114	.15	05-APR-23
505	115	.25	25-MAY-23

[Download CSV](#)

5 rows selected.

TABLES AND INSERT

1
2 select*from prodict;

PRODUCTID	NAME	DESCRIPTION	PRICE	INVENTORY_LEVEL	PRODUCT_TYPE
112	Nails	Long, high-quality, transparent artificial nails	200	100	Local
113	Hair Extension	Natural hair available in long lengths, many dyes and different cuts	600	40	Imported
114	Nail Polish	Nail Polish in Different Colors	50	30	Local
115	Makeup brushes	High quality makeup brushes available in small and large sizes	60	40	Imported
111	Eyelashes	Long and thick false eyelashes	50	100	Imported

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1 select*from Managerial;

1 select*from LocalProduct;

2

L_PRODUCTID	STORE_LOCATION
112	Abhur
114	AL-Safa

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2 rows selected.

1 select*from Staff;

S_EMPLOYEEID	JOB_TYPE
1123	Hair Stylist
1122	Hair Stylist
2110115	Hair Stylist
21111155	Hair Stylist

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4 rows selected.

M_EMPID	RANK
2111011	Manager
2110115	Manager
2111985	Manager

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3 rows selected.

TABLES AND INSERT

```
1 select*from Providing;
```

SERVICE_TYPE	EMP_ID	SERVICE_TIME	SERVICE_DATE
Makeup	2110115	15-JAN-23 10.00.00.000000 AM	15-JAN-23
Hairstyle	2111011	20-FEB-23 03.30.00.000000 PM	20-FEB-23
Haircut	2111985	10-MAR-23 12.45.00.000000 PM	10-MAR-23
Nails	2119899	05-APR-23 02.00.00.000000 PM	05-APR-23
Hair Color	21111155	25-MAY-23 11.00.00.000000 AM	25-MAY-23

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5 rows selected.

```
1 select*from ImportedProduct ;
```

I_PRODUCTID	COUNTRY_OF_ORIGIN
111	France
113	Italy
115	Germany

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3 rows selected.

QUERIES

```
1 v SELECT EMAIL, PHONE_NUMBER, NAME  
2 FROM EMPLOYEE  
3 WHERE EMPID = 2111011;  
4  
5
```

EMAIL	PHONE_NUMBER	NAME
jana.saleh@email.com	9876543210	Jana Saleh

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```
1 v SELECT EMPID, Name, Salary  
2 FROM Employee  
3 ORDER BY Salary DESC;
```

EMPID	NAME	SALARY
2113333	Maya	75000
2112222	Darin	70000
2110115	Jana Alghamdi	60000
2111011	Jana Saleh	55000
2119899	Sara	52000
2111985	Maria Jawah	50000
21111155	Nouf	48000
1123	Darin	41000

QUERIES

```
1 v SELECT ProductID, Name, Description, Price, Inventory_level  
2 FROM product  
3 WHERE Price = 600;
```

PRODUCTID	NAME	DESCRIPTION	PRICE	INVENTORY_LEVEL
113	Hair Extension	Natural hair available in long lengths, many dyes and different cuts	600	40

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SUPQUERIE

```
2 v SELECT Name, Salary  
3 FROM EMPLOYEE  
4 WHERE Salary < (SELECT Salary  
5      FROM EMPLOYEE  
6      WHERE Name = 'Jana Alghamdi');  
7
```

NAME	SALARY
Jana Saleh	55000
Maria Jawah	50000
Sara	52000
Nouf	48000
Darin	41000
Dania	10000

QUERIES

```
16 v SELECT Name, Salary  
17   FROM EMPLOYEE  
18 WHERE Salary = (SELECT MAX(Salary) FROM EMPLOYEE);  
19  
20  
21 v SELECT Name, Salary  
22   FROM EMPLOYEE  
23 WHERE Salary < (SELECT Salary  
24     FROM EMPLOYEE  
25 WHERE Name = 'Lana AlOhamdi');
```

NAME	SALARY
Maya	75000

JOIN

```
1 v SELECT CUSTOMER.Name , APPOINTMENT.Service_type  
2   FROM CUSTOMER JOIN APPOINTMENT  
3   ON CUSTOMER.CustomerID = APPOINTMENT.CustomerID  
4 WHERE CUSTOMER.Name LIKE 'E%';
```

NAME	SERVICE_TYPE
Elaf	Makeup

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QUERIES

AGREGGATE "COUNT"

```
1 v SELECT COUNT(*) AS NUMBER_OF_EMPLOYEES  
2   FROM EMPLOYEE;
```

NUMBER_OF_EMPLOYEES

9

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```
1 v SELECT COUNT(EMPID) AS EMPLOYEE_COUNT , Name  
2   FROM EMPLOYEE  
3   GROUP BY Name;  
4
```

EMPLOYEE_COUNT	NAME
1	Maya
1	Jana Alghamdi
1	Maria Jawah
1	Jana Saleh
1	Sara
1	Nouf
1	Dania
2	Darin

QUERIES PROCEDURES

```
2 AS
3
4 CURSOR executive IS
5 SELECT Name, Salary
6 FROM EMPLOYEE
7 WHERE Salary > MinSalary;
8
9 v BEGIN
10
11 FOR v_cursrec IN executive LOOP
12 dbms_output.put_line (v_cursrec.Name || ' ' || v_cursrec.Salary);
13 END LOOP;
14
15 END Salcheck;
16 EXEC Salcheck (55000);
```

```
Statement processed.
Jana Alghamdi 60000
Darin 70000
Maya 75000
```

QUERIES

SELECT PROCEDURES

SQL Worksheet

```
1 v CREATE OR REPLACE PROCEDURE getEmployeeInfo( EmpID INT ) AS
2 Name VARCHAR2(20);
3 PhoneNum VARCHAR2(10);
4 Email VARCHAR2(50);
5 v BEGIN
6 SELECT Name,Phone_number,Email INTO Name,PhoneNum,Email FROM EMPLOYEE WHERE EMPID =
7 dbms_output.put_line(' ' || EmpID);
8 dbms_output.put_line('Name: ' || Name);
9 dbms_output.put_line('Phone Number: ' || PhoneNum);
10 dbms_output.put_line('Email: ' || Email);
11 END getEmployeeInfo;
12
```

Procedure created.

Statement 104



CALL getEmployeeInfo(1113)

Statement processed.

1113

Name: Jana Saleh
Phone Number: 9876543210
Email: jana.saleh@gmail.com

QUERIES

ABDATE PROCEDURES

SQL Worksheet

```
1 v CREATE OR REPLACE PROCEDURE getEmployeeInfo( EmpID INT ) AS
2 Name VARCHAR2(20);
3 PhoneNum VARCHAR2(10);
4 Email VARCHAR2(50);
5 BEGIN
6 SELECT Name,Phone_number,Email INTO Name,PhoneNum,Email FROM EMPLOYEE WHERE EMPID =
7 dbms_output.put_line(' ' || EmpID);
8 dbms_output.put_line('Name: ' || Name);
9 dbms_output.put_line('Phone Number: ' || PhoneNum);
10 dbms_output.put_line('Email: ' || Email);
11 END getEmployeeInfo;
12
```

Procedure created.

SQL Worksheet

```
1 v CREATE OR REPLACE PROCEDURE UpdateEmployeeSalary (
2     p_EmployeeID IN INT,
3     p_NewSalary IN NUMBER
4 )
5 IS
6 BEGIN
7     UPDATE Employee
8     SET Salary = p_NewSalary
9     WHERE EMPID = p_EmployeeID;
10    COMMIT;
11 END;
12 SELECT Name, EMPID, Salary FROM Employee WHERE EMPID = 2110115;
13 CALL UpdateEmployeeSalary(2110115, 42000);
14 SELECT Name, EMPID, Salary FROM Employee WHERE EMPID = 2110115;
```

NAME	EMPID	SALARY
Jana Alghamdi	2110115	5000000

[Download CSV](#)

Statement processed.

NAME	EMPID	SALARY
Jana Alghamdi	2110115	42000

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SCEMA



APPOINTMENT

Table
Status: Valid

Created 2 hours ago



CUSTOMER

Table
Status: Valid

Created 2 hours ago



EMPLOYEE

Table
Status: Valid

Created 2 hours ago



IMPORTEDPRODUCT

Table
Status: Valid

Created 27 minutes ago



LOCALPRODUCT

Table
Status: Valid

Created 27 minutes ago



MANAGERIAL

Table
Status: Valid

Created 2 hours ago



PRODECT

Table
Status: Valid

Created 29 minutes ago



PROVIDING

Table
Status: Valid

Created 2 hours ago



SALES

Table
Status: Valid

Created 2 hours ago



SERVICE



STAFF

