Database Project

Furniture Shop

Team Members

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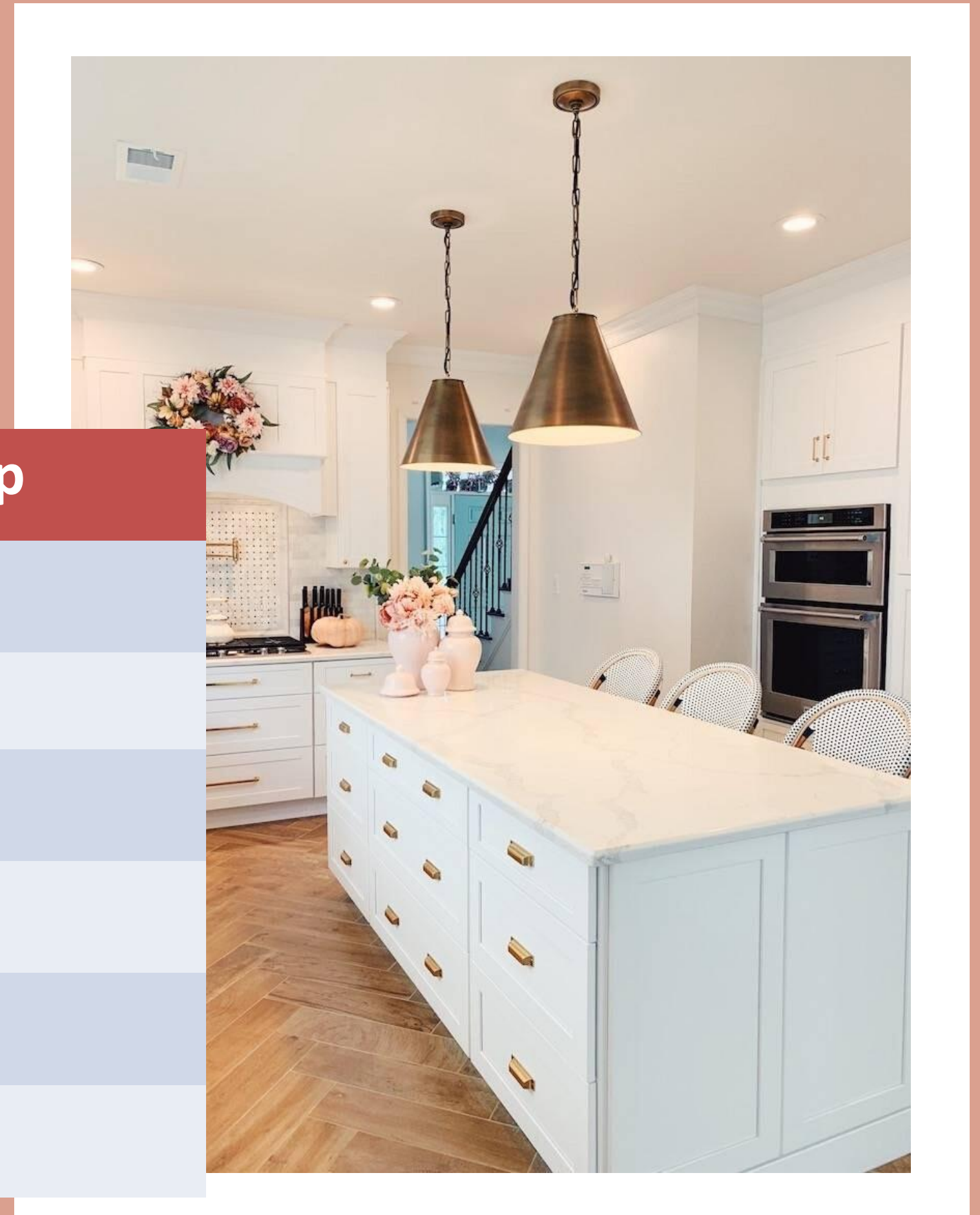
Report Components

1- Description Of Organization

2-EER Diagram

3-Database Schema

4-Normalization

5-Final Tables

6-Implementation

7-Queries

Description Of Organization

The furniture shop keeps information of employees who work for them. Data held about each employee includes the name (first name, middle name, last name), SSN, address, birthday, Sex and salary. An employee may have several degrees.

Employees can be grouped into cashier and marketer. For cashier, computer skills are required. For marketer, the marketer type is recorded.

An employee can also be a manager. A Manger must manage a specific branch. Data held about each branch includes a unique Number, phone, and address.

Each branch enrolls customers. The information of customers is stored, which includes the customer name (first name, middle name, last name), address, ID, email and mobile number.

The customer order a products, we keep track date and quantity for each order. The information of products is stored, which includes the product ID, name and price. Each branch must owns products.

Cont

Products can be grouped into tree, dining table, lighting. For tree, the care type is recorded. For lighting, the lighting power is recorded. For the dining table number of chairs and size are recorded.
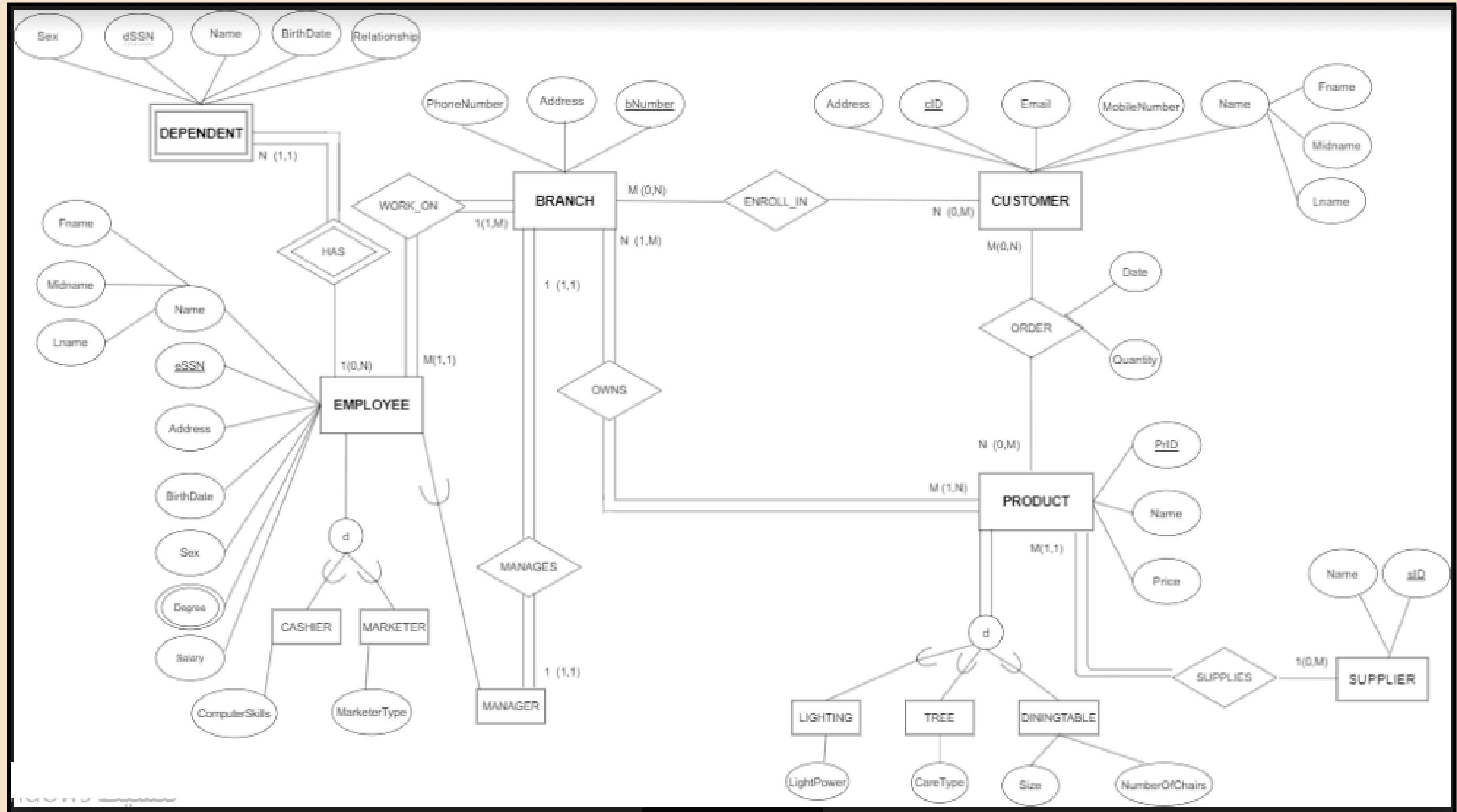
Each product must supplied by a supplier, supplier name and ID are recorded.

The employee has dependents, we keep each dependents name, SSN, birthday, sex and relationship to the employee.

Database Schema

EMPLOYEE(eSSN, Fname, Midname, Lname, Salary, Sex, BirthDate ,Address)

BRANCH(bNumber, PhoneNumber, Address)

CUSTOMER(cID, Fname, Midname, Lname, Email, MobileNumber, Address)

PRODUCT(prID , Price, Name)

SUPPLIER(sID,Name)

DEPENDENT(eSSN, dSSN , Name , BirthDate, Sex, RelationShip)

No 1 to 1 RelationShip

PRODUCT(prID , Price, Name, supplierID)

EMPLOYEE(eSSN, Fname, Midname, Lname, Salary, Sex, BirthDate ,Address, bNo)

ORDER(cID,prID, Date, Quantity)

ENROLL _IN (bNumber, cID)

OWNS (bNumber, prID)

EDEGREE(eSSN , Degree)

No ternary RelationShip

Database Schema

8A

EMPLOYEE(eSSN, Fname, Midname, Lname, Salary, Sex, BirthDate ,Address, bNo)

CASHIER(eSSN,ComputerSkills)

MARKETER(eSSN, MarketerType)

MANGER(eSSN)

_____

PRODUCT(prID , Price, Name,sID)

LIGHTING(prID, LightPower)

TREE(prID, CareType)

DININGTABLE(prID, Size, NumberOfChairs)

Step 2 : No Weak Entity

Step 3 : MANGER(eSSN , bNum)

Step 4 : No 1 to N

Step 5 : No M to N

Step 6 : No Multivalued Attribute

Step 7 : No Ternary RelationShip

No union type

Normalization

BRANCH(bNumber, PhoneNumber, Address)

In 1NF, 2NF ,3NF , BCNF

EMPLOYEE(eSSN, Fname, Midname, Lname, Salary, Sex, BirthDate ,Address, bNo)

In 1NF, 2NF ,3NF , BCNF

EDEGREE(eSSN , Degree)

In 1NF, 2NF ,3NF , BCNF

CASHIER(eSSN,ComputerSkills)

In 1NF, 2NF ,3NF , BCNF

MARKETER(eSSN, MarketerType)

In 1NF, 2NF ,3NF , BCNF

MANGER(eSSN , bNum)

In 1NF, 2NF ,3NF , BCNF

Normalization

DEPENDENT(eSSN, dSSN , Name , BirthDate, Sex, RelationShip)

Not in 2NF , because we have partial dependence

The Name, BirthDate and Sex can be determined by depenedent SSN 'dSSN'

DEPENDENT(eSSN, dSSN,RelationShip)

DEPENDENT_INFORMATION(dSSN, Name , BirthDate, Sex)

In 1NF, 2NF ,3NF , BCNF

CUSTOMER(cID, Fname, Midname, Lname, Email, MobileNumber, Address)

In 1NF, 2NF ,3NF , BCNF

ENROLL _IN (bNumber, cID)

In 1NF, 2NF ,3NF , BCNF

PRODUCT(prID , Price, Name, supplierID)

In 1NF, 2NF ,3NF , BCNF

DININGTABLE(prID, Size, NumberOfChairs)

In 1NF, 2NF ,3NF , BCNF

Normalization

LIGHTING(prID, LightPower)

In 1NF, 2NF ,3NF , BCNF

TREE(prID, CareType)

In 1NF, 2NF ,3NF , BCNF

ORDER(cID,prID, Date, Quantity)

In 1NF, 2NF ,3NF , BCNF

OWNS (bNumber, prID)

In 1NF, 2NF ,3NF , BCNF

SUPPLIER(sID,Name)

In 1NF, 2NF ,3NF , BCNF

Final Tables

BRANCH(bNumber, PhoneNumber, Address)

EMPLOYEE(eSSN, Fname, Midname, Lname, Salary, Sex, BirthDate ,Address, bNo)

EDEGREE(eSSN , Degree)

CASHIER(eSSN,ComputerSkills)

MARKETER(eSSN, MarketerType)

MANGER(eSSN , bNum)

DEPENDENT(eSSN, dSSN,RelationShip)

DEPENDENT_INFORMATION(dSSN, Name , BirthDate, Sex)

CUSTOMER(cID, Fname, Midname, Lname, Email, MobileNumber, Address)

ENROLL _IN (bNumber, cID)

PRODUCT(prID , Price, Name, supplierID)

DININGTABLE(prID, Size, NumberOfChairs)

LIGHTING(prID, LightPower)

TREE(prID, CareType)

ORDER(cID,prID, Date, Quantity)

OWNS (bNumber, prID)

SUPPLIER(sID,Name)

Implementation

branch

	bNumber	PhoneNumber	Address
▶	1	+996501147716	Jeddah
	2	+996583837462	Makkah
	3	+996509883783	Taif
*	NULL	NULL	NULL

edegree

	eSSN	Degree
▶	0032237777	Bachelor's
	0099887765	Master's
	0333322873	Bachelor's
	1112224444	Bachelor's
	1212447777	Master's
	1234226677	Bachelor's
	1234567890	Master's
	8833335555	Bachelor's
	8884443333	Bachelor's
	9997766555	Bachelor's
*	NULL	NULL

employee

	eSSN	Fname	Midname	Lname	Salary	Sex	BirthDate	Address	bNo
▶	0032237777	Naif	R	Alharbi	7000	M	1941-06-20	Taif	3
	0099887765	Maha	A	Alsalmi	2000	F	1969-03-29	Taif	3
	0333322873	Rahaf	N	Alharbi	2000	F	1943-01-11	Taif	3
	1112224444	Rakan	A	Alsalmi	2000	M	1955-12-08	Jeddah	1
	1212447777	Mohammed	J	Alotabi	5000	M	1962-09-15	Jeddah	1
	1234226677	Jassem	Y	Alotabi	1000	M	1944-02-03	Jeddah	1
	1234567890	Ahmed	M	Alharbi	1000	M	1965-01-09	Makkah	2
	4889933221	Rami	T	Alharbi	1000	M	1988-08-01	Taif	NULL
	8833335555	Amal	K	Alharbi	1000	F	1972-07-31	Makkah	2
	8884443333	Waleed	Y	Alfahmi	8000	M	1968-01-19	Makkah	2
	9997766555	Sara	M	Alharbi	3000	F	1937-01-16	Makkah	2
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Cont

cashier

eSSN	ComputerSkills
0099887765	intermediate
1112224444	high
8833335555	intermediate
NULL	NULL

manger

eSSN	bNum
1212447777	1
8884443333	2
0032237777	3
NULL	NULL

marketer

eSSN	MarketerType
0032237777	Brand manager
1112224444	Brand manager
1212447777	content creator
1234226677	market research
1234567890	marketing Assistant
8833335555	market research
8884443333	Brand manager
9997766555	content creator
NULL	NULL

Cont

dependent

eSSN	dSSN	RelationShip
0032237777	1122334493	dughter
1112224444	1932487666	son
1112224444	4333998865	wife
8884443333	3322998822	son
NULL	NULL	NULL

dependent_information

dSSN	Name	BirthDate	Sex
1122334493	Sara	1999-01-11	F
1932487666	Ahmed	1989-02-15	M
3322998822	Khaled	1977-10-10	M
4333998865	Maha	1899-12-01	F
NULL	NULL	NULL	NULL

Cont

customer

	cID	Fname	Midname	Lname	Email	MobileNumber	Address
▶	S12345	Khaled	N	alharbi	kh22@hotmail.com	+966507609669	Makkah
	S43556	Nora	M	alsalmi	No3@hotmail.com	+966558765545	Taif
	S44333	Ahmed	E	alfhmi	Ah43@hotmail.com	+966443399876	Makkah
	S67778	Mohammed	R	alotabi	Mo33@hotmail.com	+966558899765	Jeddah
*	NULL	NULL	NULL	NULL	NULL	NULL	NULL

enroll_in

	bNumber	cID
▶	1	S44333
	2	S12345
	2	S43556
	3	S67778
*	NULL	NULL

Cont

product

prID	Price	Name	supplierID
1001	50.00	lavender	S43678
1002	55.00	dahlia	S43678
1003	100.00	sunflower	S43678
1004	50.00	tulip	S43678
1005	200.00	vangsta	S45676
1006	300.00	lisabo	S45676
1007	500.00	skogsta	S45676
1008	900.00	bjursta	S45676
1009	150.00	lampan	S87367
1010	100.00	tidig	S87367
1011	200.00	fado	S87367
1012	77.00	tertial	S87367
NULL	NULL	NULL	NULL

lighting

prID	LightPower
1009	10 W
1010	12 W
1011	11 W
1012	15 W
NULL	NULL

diningTable

prID	Size	NumberOfChairs
1005	110*100	2
1006	130*260	4
1007	195*390	6
1008	260*520	8
NULL	NULL	NULL

tree

prID	CareType
1001	Indoor
1002	Indoor
1003	Outdoor
1004	Outdoor
NULL	NULL

Cont

order

cID	prID	Date	Quantity
S12345	1001	2020-01-11	2
S12345	1004	2015-01-01	2
S43556	1001	2020-11-03	1
S44333	1004	2020-08-18	3
S67778	1001	2014-07-09	4
S67778	1010	2019-08-06	1
NULL	NULL	NULL	NULL

supplier

sID	Name
S43678	Trees supplier
S45676	Lightings supplier
S87367	Dining tables supplier
NULL	NULL

owns

bNumber	prID
1	1004
1	1005
1	1007
1	1009
2	1002
2	1010
2	1011
3	1001
3	1005
3	1012
NULL	NULL

Queries

Q1

```
SELECT bNumber ,COUNT(*) AS employeeCount, branch.Address  AS branchAddress
FROM branch , employee
WHERE bNumber=bNo AND bNumber=1;
```

bNumber	employeeCount	branchAddress
1	3	Jeddah

Q2

```
SELECT Fname , Lname , bNo , branch.Address AS branchAddress
FROM employee LEFT OUTER JOIN  branch ON bNumber=bNo ORDER BY bNo;
```

Fname	Lname	bNo	branchAddress
Rami	Alharbi	NULL	NULL
Rakan	Alsalmi	1	Jeddah
Mohammed	Alotabi	1	Jeddah
Jassem	Alotabi	1	Jeddah
Ahmed	Alharbi	2	Makkah
Amal	Alharbi	2	Makkah
Waleed	Alfahmi	2	Makkah
Sara	Alharbi	2	Makkah
Naif	Alharbi	3	Taif
Maha	Alsalmi	3	Taif
Rahaf	Alharbi	3	Taif

Q3

```
SELECT Fname
FROM employee
ORDER BY Fname;
```

Fname
Ahmed
Amal
Jassem
Maha
Mohammed
Naif
Rahaf
Rakan
Rami
Sara
Waleed

Cont

Q4

```sql
SELECT Fname , Lname
FROM employee
WHERE salary > ALL ( SELECT salary  FROM employee WHERE bNo=1 );
```

	Fname	Lname
▶	Naif	Alharbi
	Waleed	Alfahmi

Q5

```sql
SELECT Fname , Lname
FROM employee
WHERE BirthDate LIKE '196%' ;
```

	Fname	Lname
▶	Maha	Alsalmi
	Mohammed	Alotabi
	Ahmed	Alharbi
	Waleed	Alfahmi

Cont

Q6

- `SELECT Fname , branch.Address AS branchAddress , manger.eSSN AS branchmangerSSN`
  `FROM employee INNER JOIN branch ON bNumber=bNo INNER JOIN manger ON bNumber=bNum;`

Fname	branchAddress	branchmangerSSN
Rakan	Jeddah	1212447777
Mohammed	Jeddah	1212447777
Jassem	Jeddah	1212447777
Ahmed	Makkah	8884443333
Amal	Makkah	8884443333
Waleed	Makkah	8884443333
Sara	Makkah	8884443333
Naif	Taif	0032237777
Maha	Taif	0032237777
Rahaf	Taif	0032237777

Q7

- `(SELECT bNo`
  `FROM employee`
  `WHERE  eSSN LIKE '1%')`
  `UNION ALL`
  `(SELECT  bNum`
  `FROM manger`
  `WHERE eSSN LIKE '1%') ;`

bNo
1
1
1
2
1

Q8

- `(SELECT Fname`
  `FROM customer`
  `WHERE Fname="Mohammed")`
  `UNION ALL`
  `(SELECT Fname`
  `FROM employee`
  `WHERE Fname="Mohammed");`

Fname
Mohammed
Mohammed

Cont

Q9

```
SELECT bNo , COUNT(*) AS employeeCount , branch.Address AS branchAddress
FROM branch , employee
WHERE bNumber=bNo GROUP BY bNumber ;
```

	bNo	employeeCount	branchAddress
▶	1	3	Jeddah
	2	4	Makkah
	3	3	Taif

Q10

```
SELECT Fname , BirthDate
FROM employee
WHERE NOT Sex='M';
```

	Fname	BirthDate
▶	Maha	1969-03-29
	Rahaf	1943-01-11
	Amal	1972-07-31
	Sara	1937-01-16

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Q11

```
select Fname  , Lname
FROM employee
where eSSN IN (select eSSN
   from manger);
```

	Fname	Lname
▶	Mohammed	Alotabi
	Waleed	Alfahmi
	Naif	Alharbi

instand of intersect

Demo ....
For more illustration of attribute types and foreign keys

- * If the link does not work, please contact the team leader :)

https://drive.google.com/file/d/1D20L1ZLFo8OMaOs419xynzocJCssXA0q/view?usp=sharing

THANK YOU