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# LIBRARY

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# DATABASE

Umm Al-Qura University  
College of Computer Science and information System  
Course name : DataBase  
Section: 2  
Members:

- |                            |           |
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**Supervisor: Dr.Aasmaa Alayed**

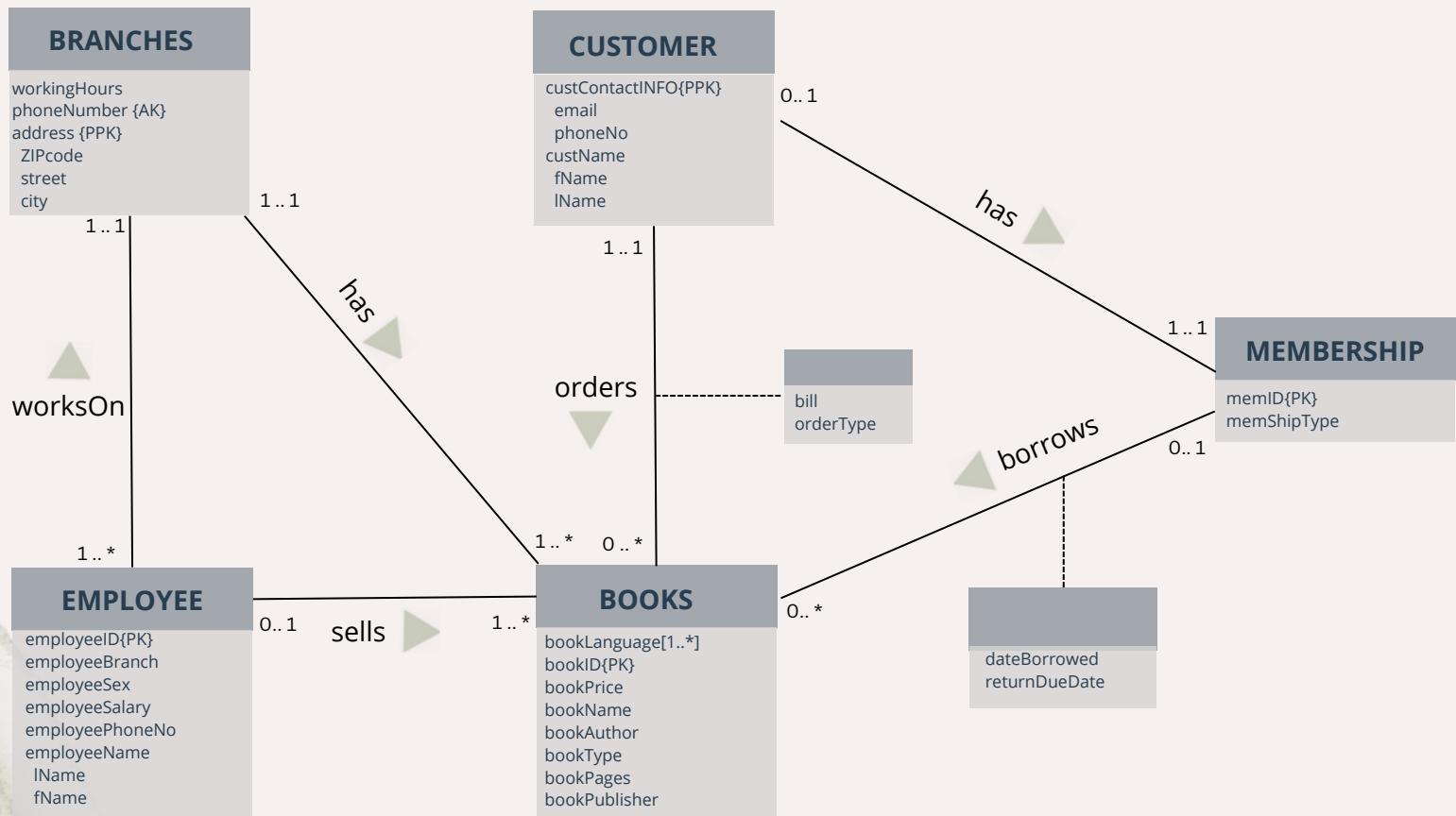
# PHASE 1



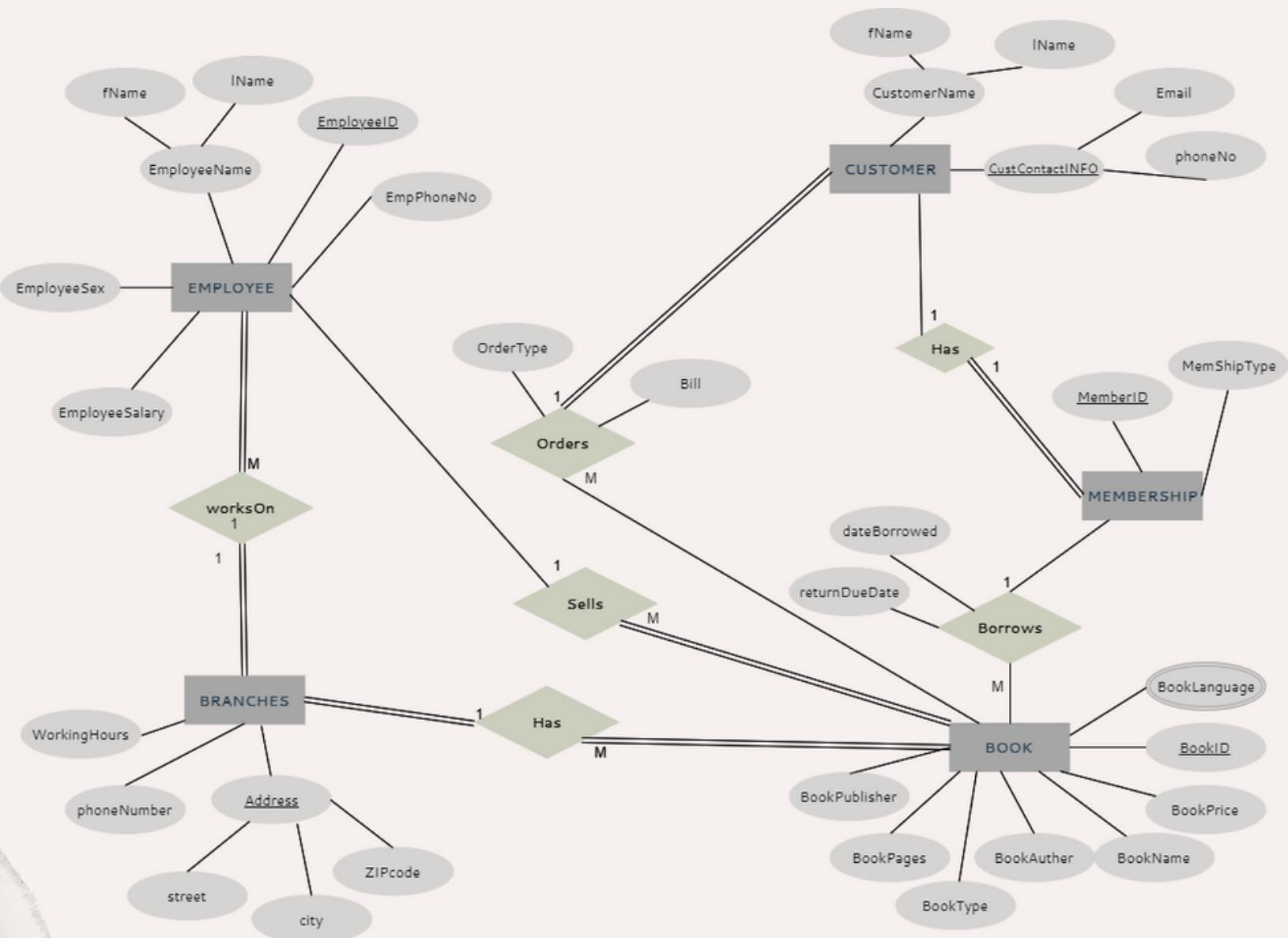
## 1. Project Name: *MagicBook Library Database*

### 2. Business Rules:

- The library has many branches, books and employees.
- Each branch has a unique address (street, city, zip code), a specific number of working hours and a unique contact number.
- Each employee works in a branch and may sell any number of books. An employee has a unique ID, gender, salary, phone number, name (first name, last name) and a branch that they work on.
- -Each book has a unique ID, price, name, languages, author, type, number of pages, and a publishers.
- A customer has a name (first name, last name) and contact information (E-mail, phone number).
- Each customer orders books. The customer may send any number of orders. There is a bill and type for each order.
- A given customer order must request at least one book.
- A customer can have exactly one membership. This membership allows him to borrow any number of books. If a customer borrows a book, there will be a borrow date and a return due date.
- A membership has a unique ID and type.



# CHEN



# TASKS



	RANEEM	GHADA	LAMA	ASMAA	RENAD	MAWDAH
<b>BUSINESS RULES</b>		✓		✓		
<b>CHEN'S NOTATION</b>					✓	✓
<b>UML NOTATION</b>	✓		✓			

# PHASE 2



## Relational schema

### Mapping

#### 1- Mapping regular entities:

Book						
bookID	bookPrice	bookName	bookAuthor	bookType	bookPages	BookPublisher

Customer			
custEmail	custPhoneNo	custFName	custLName

Employee					
emplID	empPhoneNo	empFName	empLName	empSex	empSalary

Branch				
ZIPCode	City	Street	phoneNo	workingHours

MemberShip	
memID	memShipType

#### 2- Mapping Weak Entities: None

#### 3- Mapping one to one relationships:

Customer			
custEmail	custPhoneNo	custFName	custLName

MemberShip			
memID	memShipType	custEmail	custPhoneNo

#### 4- Mapping one to many relationships:



# PHASE 2



5- Mapping many to many relationships: None

6- Mapping multivalued attributes:



7- Mapping n-ary relationships: None

## Final Mapping



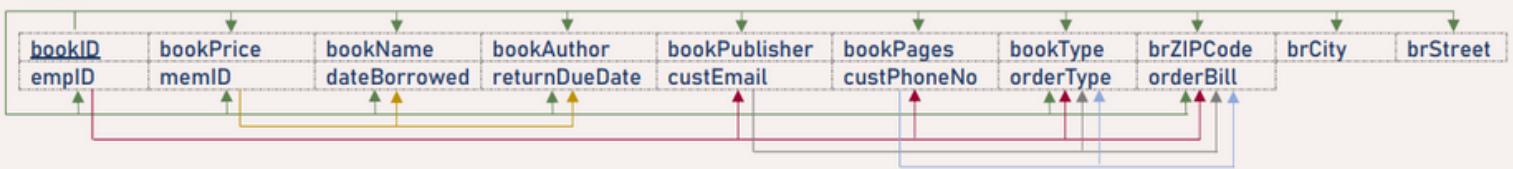
# PHASE 2



## Normalization

### Normalization

**Book**



✓ **1NF:** There aren't any multivalued attributes.

✓ **2NF:** Some of the non-key attributes depend on the primary key (bookID). The others depend on other non-key attributes which will be normalized in the third normal form.

**3NF:** There are no non-key attributes that depend on other non-key attributes. This is called transitive dependency and will be solved by separating these attributes to individual tables.

**Book**

bookID	bookPrice	bookName	bookAuthor	bookPublisher	bookPages	bookType	brZIPCode	brCity	brStreet
bookID	bookPrice	bookName	bookAuthor	bookPublisher	bookPages	bookType	brZIPCode	brCity	brStreet

**Book\_borrowed**

bookID	memID	dateBorrowed	returnDueDate
bookID	memID	dateBorrowed	returnDueDate

**Book\_sold**

bookID	emplID	custEmail	custPhoneNo	orderType	orderBill
bookID	emplID	custEmail	custPhoneNo	orderType	orderBill

✓ **3NF:** The tables now are in the 3NF. There are no non-key attributes that depend on other non-key attributes.

**Customer**

custEmail	custPhoneNo	custFName	custLName
custEmail	custPhoneNo	custFName	custLName

✓ **1NF:** There aren't any multivalued attributes.

✓ **2NF:** All non-key attributes depend on all the primary keys (custEmail, custPhoneNo).

✓ **3NF:** There are no non-key attributes that depend on other non-key attributes.

**Employee**

emplID	empPhoneNo	empFName	empLName	empSex	empSalary	brZIPCode	brCity	brStreet
emplID	empPhoneNo	empFName	empLName	empSex	empSalary	brZIPCode	brCity	brStreet

✓ **1NF:** There aren't any multivalued attributes.

✓ **2NF:** All non-key attributes depend on the primary key (emplID).

✓ **3NF:** There are no non-key attributes that depend on other non-key attributes.

# PHASE 2



- ✓ **1NF:** There aren't any multivalued attributes.
- ✓ **2NF:** All non-key attributes depend on all the primary keys (ZIPCode, city, street).
- ✓ **3NF:** There are no non-key attributes that depend on other non-key attributes.



- ✓ **1NF:** There aren't any multivalued attributes.
- ✓ **2NF:** All non-key attributes depend on all the primary keys (ZIPCode, city, street).
- ✓ **3NF:** There are no non-key attributes that depend on other non-key attributes.

## BookLanguages

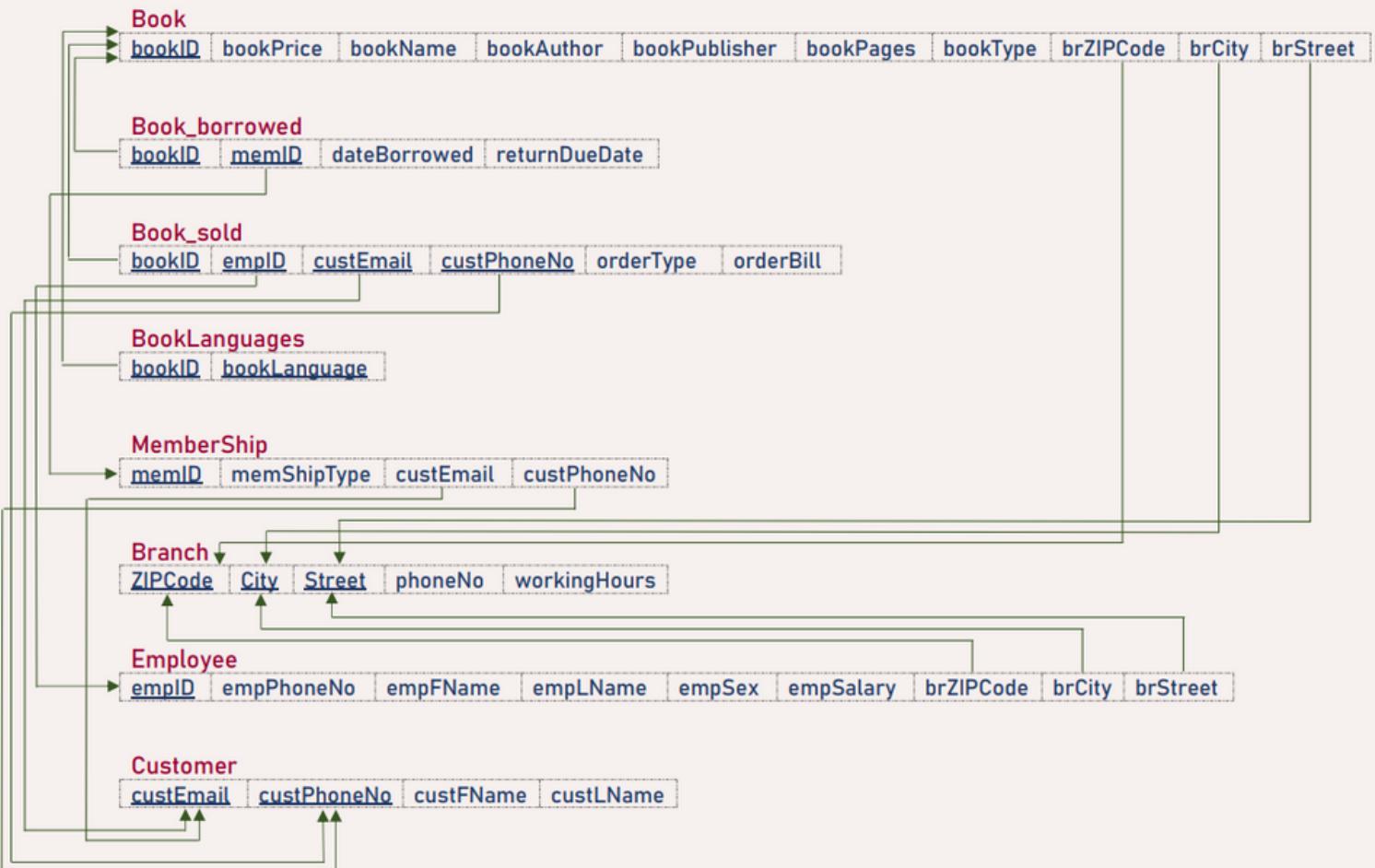
bookID	bookLanguage
--------	--------------

- ✓ **1NF:** There aren't any multivalued attributes.
- ✓ **2NF:** There aren't any non-key attributes, so there will be no partial dependency.
- ✓ **3NF:** There aren't any non-key attributes, so there will be no transitive dependency.

# PHASE 2



## Final Mapping after Normalization

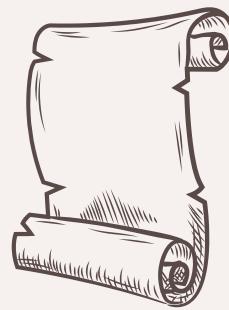


# TASKS



	RANEEM	GHADA	LAMA	ASMAA	RENAD	MAWDAH
RELATIONAL SCHEMA	✓	✓	✓	✓	✓	✓
NORMALIZATION	✓	✓	✓	✓	✓	✓

# PHASE 3



## 1- Create a new schema/database

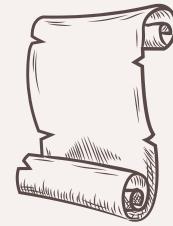
```
1 • CREATE SCHEMA Library;
```

✓	2 01:43:35	CREATE SCHEMA Library	1 row(s) affected
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## 2- Create all the tables

```
CREATE TABLE Branch (
    ZipCode      INT(5) NOT NULL,
    City         VARCHAR(20) NOT NULL,
    Street        VARCHAR(20) NOT NULL,
    PhoneNo      INT(10) UNIQUE,
    WorkingHours  INT,
    constraint Branch_PK PRIMARY KEY (ZipCode, City, Street)
);
```

```
CREATE TABLE Customer (
    CustEmail    VARCHAR(40) NOT NULL,
    CusPhoneNo  INT (10) NOT NULL,
    CustFName    VARCHAR(20),
    CustLName    VARCHAR(20),
    constraint Customer_PK PRIMARY KEY (CustEmail, CusPhoneNo)
);
```



## 2- Create all the tables

```
CREATE TABLE MemberShip (
    MemID      INT(10) NOT NULL,
    MemshipType  VARCHAR(10),
    CustEmail    VARCHAR(40),
    CusPhoneNo   INT(10),

    constraint MemberShip_PK PRIMARY KEY (MemID),
    constraint MemberShip_FK FOREIGN KEY (CustEmail, CusPhoneNo) REFERENCES Customer(CustEmail, CusPhoneNo) ON DELETE CASCADE
);

CREATE TABLE Employee(
    EmpID      INT(10),
    EmpPhoneNo  INT(10),
    EmpFName    VARCHAR(20),
    EmpLName    VARCHAR (20),
    EmpSex      VARCHAR(6),
    EmpSalary    INT,
    ZipCode     INT(5),
    City        VARCHAR (20),
    Street      VARCHAR (20),

    CONSTRAINT Employee_PK PRIMARY KEY (EmpID),
    CONSTRAINT Employee_FK FOREIGN KEY (ZipCode, City, Street) REFERENCES Branch(ZipCode, City, Street) ON DELETE SET NULL
);

CREATE TABLE Book(
    BookID      INT(5) NOT NULL,
    BookPrice    INT,
    BookName    VARCHAR(40),
    BookAuther   VARCHAR(20),
    BookPublisher VARCHAR(20),
    BookPages    INT,
    BookType     VARCHAR(20),
    ZipCode     INT(5),
    City        VARCHAR (20),
    Street      VARCHAR (20),

    CONSTRAINT Book_PK PRIMARY KEY (BookID),
    CONSTRAINT Book_FK FOREIGN KEY (ZipCode, City, Street) REFERENCES Branch(ZipCode, City, Street) ON DELETE SET NULL
);
```



## 2- Create all the tables

```
CREATE TABLE BookBorrowed(
    BooKID      INT(5) NOT NULL,
    MemID       INT(10) NOT NULL,
    DateBorrowed   DATE,
    ReturnDueDate  DATE,
    CONSTRAINT BookBorrowed_PK PRIMARY KEY (BooKID, MemID),
    CONSTRAINT BookBorrowed_FK1 FOREIGN KEY (BooKID) REFERENCES Book(BookID) ON DELETE CASCADE,
    CONSTRAINT BookBorrowed_FK2 FOREIGN KEY (MemID) REFERENCES Membership(MemID) ON DELETE CASCADE
);

CREATE TABLE BookLanguages(
    BookID      INT(5) NOT NULL,
    BookLanguages  VARCHAR(15),
    CONSTRAINT BookLanguages_PK PRIMARY KEY (BookID, BookLanguages),
    CONSTRAINT BookLanguages_FK1 FOREIGN KEY (BookID) REFERENCES Book(BookID) ON DELETE CASCADE
);

CREATE TABLE BookSold(
    BookID      INT(5) NOT NULL,
    EmpID       INT(10) NOT NULL,
    CustEmail    VARCHAR(40) NOT NULL,
    CustPhoneNo  INT(10) NOT NULL,
    OrderType    VARCHAR(15),
    OrederBill   INT,
    CONSTRAINT BookSold_PK PRIMARY KEY (BookID, EmpID, CustEmail, CustPhoneNo),
    CONSTRAINT BookSold_FK1 FOREIGN KEY (BookID) REFERENCES Book(BookID) ON DELETE CASCADE,
    CONSTRAINT BookSold_FK2 FOREIGN KEY (EmpID) REFERENCES Employee(EmpID) ON DELETE CASCADE,
    CONSTRAINT BookSold_FK3 FOREIGN KEY (CustEmail,CustPhoneNo) REFERENCES Customer(CustEmail,CusPhoneNo) ON DELETE CASCADE
);
```

- 3 01:44:36 CREATE TABLE Branch ( ZipCodeINT(5) NOT NULL, CityVARCHAR(20) NOT NULL, Str... 0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated and will be remov...
- 4 01:57:42 CREATE TABLE Customer ( CustEmail VARCHAR(40) NOT NULL, CusPhoneNo INT (1... 0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated and will be remov...
- 5 01:57:48 CREATE TABLE MemberShip ( MemID INT(10) NOT NULL, MemshipType VARCHAR(1... 0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated and will be remov...
- 6 01:57:53 CREATE TABLE Employee( EmpIDINT(10), EmpPhoneNo INT(10), EmpFName VARCHAR... 0 row(s) affected, 3 warning(s): 1681 Integer display width is deprecated and will be remov...
- 7 01:57:58 CREATE TABLE Book( BookID INT(5) NOT NULL, BookPrice INT, BookName VARCHAR... 0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated and will be remov...
- 8 01:57:59 CREATE TABLE BookBorrowed( BooKIDINT(5) NOT NULL, MemID INT(10) NOT NULL,... 0 row(s) affected, 2 warning(s): 1681 Integer display width is deprecated and will be remov...
- 9 01:58:09 CREATE TABLE BookLanguages( BookID INT(5) NOT NULL, BookLanguages VARCH... 0 row(s) affected, 1 warning(s): 1681 Integer display width is deprecated and will be remov...
- 10 01:58:11 CREATE TABLE BookSold( BookID INT(5) NOT NULL, EmpID INT(10) NOT NULL, Cust... 0 row(s) affected, 3 warning(s): 1681 Integer display width is deprecated and will be remov...

### 3- Insert all the data using INSERT.



```
-- insertion process.
```

```
INSERT INTO branch
```

```
VALUES (24356 , 'Mecca' , 'Alhajj' , 0540244317 , 12),  
(43678 , 'Riyadh' , 'Alwaha' , 0537376224 , 12),  
(54372 , 'Jeddah' , 'Alrawadha' , 0537674387 , 8 ),  
(47382 , 'Tabuk' , 'Almoruoj' , 0548737895 , 6 ),  
(34598 , 'Khobar' , 'Alhamraa' , 0567839638 , 12),  
(28391 , 'Baha' , 'Alrabwah' , 0537295224 , 8 ),  
(40281 , 'Taif' , 'Alwesam' , 0519274387 , 8 );
```

```
INSERT INTO membership
```

```
VALUES (384811245 , 'Diamond' , 'Ranomo@gmail.com' , 0548776663),  
(465890328 , 'Bronze' , 'talaa.b556@outlook.com' , 0568342759),  
(756890487 , 'Gold' , 'ahmed.kh@gmail.com' , 0543789245),  
(657483920 , 'Bronze' , 'lele16@hotmail.com' , 0504525520),  
(422704028 , 'Diamond' , 'jejeAhmed@gmail.com' , 0545892634),  
(113690487 , 'Gold' , 'ssk19978@gmail.com' , 0588339850),  
(992183920 , 'Bronze' , 'faaatooo@hotmail.com' , 0503513949),  
(476511395 , 'Gold' , 'loooola11@gmail.com' , 0577833934);
```

```
INSERT INTO customer
```

```
VALUES ('meeemoo2010@hotmail.com' , 0548577637 , 'Lamiaa' , 'Alharbi' ),  
('Ranomo@gmail.com' , 0548776663 , 'Ranim' , 'Alharbi' ),  
('talaa.b556@outlook.com' , 0568342759 , 'Tala' , 'Bukhari' ),  
('lele16@hotmail.com' , 0504525520 , 'Layan' , 'komo' ),  
('ghadamss01@gmail.com' , 0588739820 , 'GHada' , 'Alsharif' ),  
('loooola11@gmail.com' , 0577833934 , 'Lujain' , 'Alamri' ),  
('ahmed.kh@gmail.com' , 0543789245 , 'Ahmed' , 'Aljabry' ),  
('ahmads@gmail.com' , 0503346589 , 'Ahmed' , 'alusaimi' ),  
('faaatooo@hotmail.com' , 0503513949 , 'Fatima' , 'Yahya' ),  
('Ghadoosh@gmail.com' , 0542397463 , 'Ghayda' , 'Felimban' ),  
('talena.girl@outlook.com' , 0559936759 , 'Taleen' , 'Alqurashi'),  
('sahora1990@hotmail.com' , 0504445930 , 'Sahar' , 'Alqasim' ),  
('ssk19978@gmail.com' , 0588339850 , 'Sara' , 'Qadah' ),  
('jejeAhmed@gmail.com' , 0545892634 , 'Jeyan' , 'Almasri' ),  
('boush.16@gmail.com' , 0547704745 , 'Ruba' , 'Assiri' ),  
('DanooBG@gmail.com' , 0544539850 , 'Daniah' , 'Bugnah' ),  
('Faresooo89@Hotmail.com' , 0584492634 , 'Fares' , 'Alsehli' ),  
('memeshoo@gmail.com' , 0542844745 , 'Maha' , 'Shweieer' ),  
('NoonaAs@gmail.com' , 0500084589 , 'Nouf' , 'alamin' );
```

### 3-Insert all the data using INSERT.



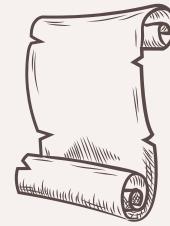
```
INSERT INTO employee
```

```
VALUES (112998745 , 0506383734 , 'Renad' , 'Alsadun' , 'Female' , 11000 , 24356 , 'Mecca' , 'Alhajj' ),  
(536653678 , 0542187024 , 'Lama' , 'Bugis' , 'Female' , 13000 , 24356 , 'Mecca' , 'Alhajj' ),  
(102865829 , 0548476886 , 'Mawdah' , 'Alghuraybi' , 'Female' , 12000 , 24356 , 'Mecca' , 'Alhajj' ),  
(287465936 , 0547783643 , 'Asmaa' , 'Alsuraihi' , 'Female' , 15000 , 24356 , 'Mecca' , 'Alhajj' ),  
(264911462 , 0542187024 , 'Ghada' , 'Alsharif' , 'Female' , 13000 , 43678 , 'Riyadh' , 'Alwaha' ),  
(490302313 , 0506390530 , 'Raneem' , 'Alharbi' , 'Female' , 15000 , 43678 , 'Riyadh' , 'Alwaha' ),  
(119044689 , 0593503553 , 'Turki' , 'Salh' , 'Male' , 11000 , 43678 , 'Riyadh' , 'Alwaha' ),  
(220395729 , 0529035092 , 'Ahmed' , 'Alhazmi' , 'Male' , 8000 , 54372 , 'Jeddah' , 'Alrawadha'),  
(288493729 , 0545908322 , 'Raghad' , 'Albadr' , 'Female' , 10000 , 54372 , 'Jeddah' , 'Alrawadha'),  
(859308721 , 0590395303 , 'Sultan' , 'Yahya' , 'Male' , 9000 , 54372 , 'Jeddah' , 'Alrawadha'),  
(234742923 , 0509302094 , 'Nouf' , 'Assiri' , 'Female' , 11000 , 54372 , 'Jeddah' , 'Alrawadha'),  
(114209202 , 0548350980 , 'Remas' , 'Felimban' , 'Female' , 9000 , 47382 , 'Tabuk' , 'Almoruoj' ),  
(921038742 , 0545987922 , 'Anmar' , 'Beigar' , 'Male' , 15000 , 47382 , 'Tabuk' , 'Almoruoj' ),  
(918479873 , 0561984391 , 'Dalal' , 'Alotaibi' , 'Female' , 13000 , 34598 , 'Khobar' , 'Alhamraa' ),  
(392709857 , 0501498782 , 'Shahad' , 'Albarakati' , 'Female' , 9000 , 34598 , 'Khobar' , 'Alhamraa' ),  
(407402380 , 0592538922 , 'Hussam' , 'Alwafi' , 'Male' , 8000 , 34598 , 'Khobar' , 'Alhamraa' ),  
(348023982 , 0545893403 , 'Adnan' , 'Alshehri' , 'Male' , 10000 , 28391 , 'Baha' , 'Alrabwah' ),  
(184792833 , 0547764094 , 'Assal' , 'Alhazmi' , 'Female' , 15000 , 28391 , 'Baha' , 'Alrabwah' ),  
(214897233 , 0548320925 , 'Muhammad' , 'Hawsawi' , 'Male' , 9000 , 40281 , 'Taif' , 'Alwesam' ),  
(478298892 , 0544509030 , 'Rinad' , 'Khayat' , 'Female' , 12000 , 40281 , 'Taif' , 'Alwesam' );
```

```
INSERT INTO bookborrowed
```

```
VALUES (87648 , 384811245 , '2022-10-25' , '2023-01-25'),  
(68452 , 465890328 , '2022-04-12' , '2022-06-10'),  
(72474 , 756890487 , '2022-02-11' , '2022-02-27'),  
(97804 , 657483920 , '2022-07-09' , '2022-08-05'),  
(92341 , 384811245 , '2022-11-05' , '2023-03-15'),  
(98706 , 992183920 , '2022-10-25' , '2023-01-25'),  
(96960 , 992183920 , '2022-04-12' , '2022-06-10'),  
(97439 , 476511395 , '2022-02-11' , '2022-02-27'),  
(87698 , 476511395 , '2022-07-09' , '2022-08-05'),  
(75959 , 476511395 , '2022-11-05' , '2023-03-15');
```

### 3-Insert all the data using INSERT.



```
INSERT INTO booklanguages
VALUES (87648 , 'English'), (87648 , 'Arabic'),
(68452 , 'English'), (68452 , 'Arabic'), (68452 , 'France'),
(72474 , 'English'),
(97804 , 'English'), (97804 , 'Arabic'), (97804 , 'France'), (97804 , 'Spanish'),
(82416 , 'English'), (82416 , 'Arabic'),
(68450 , 'English'), (68450 , 'Arabic'), (68450 , 'France'),
(92341 , 'English'),
(83451 , 'English'),
(73913 , 'English'),
(89685 , 'English'), (89685 , 'Arabic'), (89685 , 'France'), (89685 , 'Spanish'),
(98274 , 'English'),
(92874 , 'English'), (92874 , 'Arabic'), (92874 , 'France'),
(86848 , 'English'), (86848 , 'Arabic'), (86848 , 'France'), (86848 , 'Spanish'),
(90726 , 'English'), (90726 , 'Arabic'), (90726 , 'France'), (90726 , 'Spanish'),
(87698 , 'English'), (87698 , 'Arabic'), (87698 , 'France'), (87698 , 'Spanish'),
(98600 , 'English'), (98600 , 'Arabic'),
(97609 , 'English'), (97609 , 'Arabic'), (97609 , 'France'),
(98706 , 'English'), (98706 , 'Arabic'), (98706 , 'France'), (98706 , 'Spanish'),
(76396 , 'English'), (76396 , 'Arabic'),
(96960 , 'English'), (96960 , 'Arabic'), (96960 , 'France'), (96960 , 'Spanish'),
(78047 , 'English'), (78047 , 'Arabic'), (78047 , 'France'), (78047 , 'Spanish'),
(69506 , 'English'),
(87596 , 'English'), (87596 , 'Arabic'), (87596 , 'France'), (87596 , 'Spanish'),
(97439 , 'English'),
(75959 , 'English'), (75959 , 'Arabic');
```

### INSERT INTO booksold

```
VALUES (87648 , 264911462 , 'meeeemoo2010@hotmail.com' , 0548577637 , 'Online' , 90),
(72474 , 112998745 , 'Ranomo@gmail.com' , 0548776663 , 'Online' , 55),
(68452 , 536653678 , 'ghadamss01@gmail.com' , 0588739820 , 'Hard Copy' , 50),
(73913 , 287465936 , 'ahmed.kh@gmail.com' , 0543789245 , 'Online' , 65),
(97804 , 102865829 , 'Ranomo@gmail.com' , 0548776663 , 'Hard Copy' , 65),
(89685 , 859308721 , 'Ghadoosh@gmail.com' , 0542397463 , 'Online' , 35),
(90726 , 220395729 , 'NoonaAs@gmail.com' , 0500084589 , 'Online' , 39),
(92874 , 918479873 , 'ssk19978@gmail.com' , 0588339850 , 'Hard Copy' , 49);
```

### 3-Insert all the data using INSERT.



```

165 • INSERT INTO book
166 VALUES (87648, 85, 'The fault in our stars' , 'John Green' , 'Penguin' , 89 , 'Romance' , 24356 , 'Mecca' , 'Alhajj' ),
167 (68452, 45, 'Harry Potter and the Prisoner of Azkaban', 'J.K Rowling' , 'Bloomsbury' , 461 , 'Fantasy' , 24356 , 'Mecca' , 'Alhajj' ),
168 (72474, 49, 'Holding Up The Universe' , 'Jennifer Niven' , 'Penguin' , 423 , 'Drama' , 24356 , 'Mecca' , 'Alhajj' ),
169 (97804, 60, 'Little Women' , 'Louisa May Alcott' , 'New American Library' , 507 , 'drama' , 24356 , 'Mecca' , 'Alhajj' ),
170 (82416, 39, 'All the Bright Places' , 'Jennifer Niven' , 'Penguin' , 452 , 'Drama' , 24356 , 'Mecca' , 'Alhajj' ),
171 (68450, 45, 'Harry Potter and the Philosopher Stone' , 'J.K Rowling' , 'Bloomsbury' , 461 , 'Fantasy' , 24356 , 'Mecca' , 'Alhajj' ),
172 (92341, 85, 'Outlander' , 'Diana Gabaldon' , 'New American Library' , 627 , 'History' , 43678 , 'Riyadh' , 'Alwaha' ),
173 (83451, 55, 'Eleanor Oliphant is Completely Fine' , 'Jennifer Gail' , 'Penguin' , 385 , 'Drama' , 43678 , 'Riyadh' , 'Alwaha' ),
174 (73913, 55, 'A Very Large Expanse of Sea' , 'Tahereh Mafi' , 'Bloomsbury' , 295 , 'Romance' , 43678 , 'Riyadh' , 'Alwaha' ),
175 (89685, 35, 'And Then There Were None' , 'Agatha Christie' , 'Jarir' , 341 , 'Crime' , 54372 , 'Jeddah' , 'Alrawadha' ),
176 (98274, 59, 'Ringer' , 'Lauren Oliver' , 'Bloomsbury' , 513 , 'Action' , 54372 , 'Jeddah' , 'Alrawadha' ),
177 (92874, 49, 'Harry Potter and the Chamber of Secrets' , 'J.K Rowling' , 'Bloomsbury' , 398 , 'Fantasy' , 54372 , 'Jeddah' , 'Alrawadha' ),
178 (86848, 45, 'The Lightning Thief' , 'Rick Riordan' , 'Jarir' , 377 , 'Fantasy' , 54372 , 'Jeddah' , 'Alrawadha' ),
179 (90726, 39, 'The Seven Dials' , 'Agatha Christie' , 'Jarir' , 379 , 'Crime' , 54372 , 'Jeddah' , 'Alrawadha' ),
180 (87698, 49, 'The Titans Curse' , 'Rick Riordan' , 'Jarir' , 423 , 'Fantasy' , 47382 , 'Tabuk' , 'Almoruoj' ),
181 (98600, 55, 'Everything Everything' , 'Nicola Yoon' , 'Penguin' , 431 , 'Drama' , 47382 , 'Tabuk' , 'Almoruoj' ),
182 (97609, 65, 'Harry Potter and the Goblet of Fire' , 'J.K Rowling' , 'Bloomsbury' , 524 , 'Fantasy' , 47382 , 'Tabuk' , 'Almoruoj' ),
183 (98706, 45, 'Why Did not They Ask Enans?' , 'Agatha Christie' , 'Jarir' , 572 , 'Crime' , 47382 , 'Tabuk' , 'Almoruoj' ),
184 (76396, 35, 'The Sun is Also a Star' , 'Nicola Yoon' , 'Penguin' , 624 , 'Romance' , 34598 , 'Khobar' , 'Alhamraa' ),
185 (96960, 45, 'The Battle of the Labyrinth' , 'Rick Riordan' , 'Jarir' , 397 , 'Fantasy' , 34598 , 'Khobar' , 'Alhamraa' ),
186 (78847, 49, 'The Mystery of the Blue Train' , 'Agatha Christie' , 'Jarir' , 497 , 'Crime' , 34598 , 'Khobar' , 'Alhamraa' ),
187 (69506, 50, 'Cinder' , 'Marissa Meyer' , 'Square Fish' , 387 , 'Fantasy' , 28391 , 'Baha' , 'Alrabwah' ),
188 (87596, 39, 'The Murder on the Links' , 'Agatha Christie' , 'Jarir' , 322 , 'Crime' , 28391 , 'Baha' , 'Alrabwah' ),
189 (97439, 45, 'Wonder' , 'R. J. Palacio' , 'Knopf' , 341 , 'Drama' , 28391 , 'Baha' , 'Alrabwah' ),
190 (75959, 20, 'A Little Princess' , 'Frances Hodgson' , 'Puffin Classics' , 293 , 'Drama' , 40281 , 'Taif' , 'Alwesam' );

```

✓	13	21:49:40	INSERT INTO branch VALUES (24356 , 'Mecca' , 'Alhajj' , 0540244317 , 12) (43678 , ... 7 row(s) affected Records: 7 Duplicates: 0 Warnings: 0
✓	14	21:49:42	INSERT INTO customer VALUES ('meeemoo2010@hotmail.com' , 0548577637 , 'Lamiaa' , ... 19 row(s) affected Records: 19 Duplicates: 0 Warnings: 0
✓	15	21:49:47	INSERT INTO membership VALUES (384811245 , 'Diamond' , 'Ranomo@gmail.com' , 0... 8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0
✓	16	21:49:48	INSERT INTO employee VALUES (112998745 , 0506383734 , 'Renad' , 'Alsadun' , 'Fema... 20 row(s) affected Records: 20 Duplicates: 0 Warnings: 0
✓	17	21:49:55	INSERT INTO book VALUES (87648 , 85 , 'The fault in our stars' , 'John Green' , ... 25 row(s) affected Records: 25 Duplicates: 0 Warnings: 0
✓	18	21:50:00	INSERT INTO bookborrowed VALUES (87648 , 384811245 , '2022-10-25' , '2023-01-25') , (... 10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0
✓	19	21:50:04	INSERT INTO booklanguages VALUES (87648 , 'English') , (87648 , 'Arabic') , (68452 , ... 65 row(s) affected Records: 65 Duplicates: 0 Warnings: 0
✓	20	21:50:09	INSERT INTO booksold VALUES (87648 , 264911462 , 'meeemoo2010@hotmail.com' , 05... 8 row(s) affected Records: 8 Duplicates: 0 Warnings: 0



## 4-Display the data after INSERT.

1 • `SELECT * FROM library.customer;`

	CustEmail	CusPhoneNo	CustFName	CustLName
▶	ahmads@gmail.com	503346589	Ahmed	alusaimi
	ahmed.kh@gmail.com	543789245	Ahmed	Aljabry
	boush.16@gmail.com	547704745	Ruba	Assiri
	DanooBG@gmail.com	544539850	Daniah	Bugnah
	faaatoo@hotmail.com	503513949	Fatima	Yahya
	Faresooo89@Hotmail.com	584492634	Fares	Alsehli
	ghadamss01@gmail.com	588739820	GHada	Alsharif
	Ghadoosh@gmail.com	542397463	Ghayda	Felimban
	jejeAhmed@gmail.com	545892634	Jeyan	Almasri
	lele16@hotmail.com	504525520	Layan	komo
	looola11@gmail.com	577833934	Lujain	Alamri
	meeemoo2010@hotmail....	548577637	Lamiaa	Alharbi
	memeshoo@gmail.com	542844745	Maha	Shweieer
	NoonaAs@gmail.com	500084589	Nouf	alamin
	Ranomo@gmail.com	548776663	Ranim	Alharbi
	sahora1990@hotmail.com	504445930	Sahar	Alqasim
	ssk19978@gmail.com	588339850	Sara	Qadah
	talaa.b556@outlook.com	568342759	Tala	Bukhari
*	talena.girl@outlook.com	559936759	Taleen	Alqurashi
	<b>NUL</b>	<b>NUL</b>	<b>NUL</b>	<b>NUL</b>

1 • `SELECT * FROM library.branch;`

	ZipCode	City	Street	PhoneNo	WorkingHours
▶	24356	Mecca	Alhajj	540244317	12
	28391	Baha	Alrabwah	537295224	8
	34598	Khobar	Alhamraa	567839638	12
	40281	Taif	Alwesam	519274387	8
	43678	Riyadh	Alwaha	537376224	12
	47382	Tabuk	Almoruoj	548737895	6
	54372	Jeddah	Alrawadha	537674387	8
	<b>HULL</b>	<b>HULL</b>	<b>HULL</b>	<b>HULL</b>	<b>HULL</b>

1 • `SELECT * FROM library.membership;`

	MemID	MemshipType	CustEmail	CusPhoneNo
▶	113690487	Gold	ssk19978@gmail.com	588339850
	384811245	Diamond	Ranomo@gmail.com	548776663
	422704028	Diamond	jejeAhmed@gmail.com	545892634
	465890328	Bronze	talaa.b556@outlook.com	568342759
	476511395	Gold	looola11@gmail.com	577833934
	657483920	Bronze	lele16@hotmail.com	504525520
	756890487	Gold	ahmed.kh@gmail.com	543789245
	992183920	Bronze	faaatoo@hotmail.com	503513949
*	<b>NUL</b>	<b>NUL</b>	<b>NUL</b>	<b>NUL</b>

## 4-Display the data after INSERT.



1 • `SELECT * FROM library.employee;`

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content

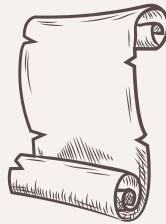
	EmpID	EmpPhoneNo	EmpFName	EmpLName	EmpSex	EmpSalary	ZipCode	City	Street
▶	102865829	548476886	Mawdah	Alghuraybi	Female	12000	24356	Mecca	Alhajj
	112998745	506383734	Renad	Alsadun	Female	11000	24356	Mecca	Alhajj
	114209202	548350980	Remas	Felimban	Female	9000	47382	Tabuk	Almoruoj
	119044689	593503553	Turki	Salh	Male	11000	43678	Riyadh	Alwaha
	184792833	547764094	Assal	Alhazmi	Female	15000	28391	Baha	Alrabwah
	214897233	548320925	Muhannad	Hawsawi	Male	9000	40281	Taif	Alwesam
	220395729	529035092	Ahmed	Alhazmi	Male	8000	54372	Jeddah	Alrawadha
	234742923	509302094	Nouf	Assiri	Female	11000	54372	Jeddah	Alrawadha
	264911462	542187024	Ghada	Alsharif	Female	13000	43678	Riyadh	Alwaha
	287465936	547783643	Asmaa	Alsuraihi	Female	15000	24356	Mecca	Alhajj
	288493729	545908322	Raghad	Albadr	Female	10000	54372	Jeddah	Alrawadha
	348023982	545893403	Adnan	Alshehri	Male	10000	28391	Baha	Alrabwah
	392709857	501498782	Shahad	Albarakati	Female	9000	34598	Khobar	Alhamraa
	407402380	592538922	Hussam	Alwafi	Male	8000	34598	Khobar	Alhamraa
	478298892	544509030	Rinad	Khayat	Female	12000	40281	Taif	Alwesam
	490302313	506390530	Raneem	Alharbi	Female	15000	43678	Riyadh	Alwaha
	536653678	542187024	Lama	Bugis	Female	13000	24356	Mecca	Alhajj
	859308721	590395303	Sultan	Yahya	Male	9000	54372	Jeddah	Alrawadha
	918479873	561984391	Dalal	Alotaibi	Female	13000	34598	Khobar	Alhamraa
	921038742	545987922	Anmar	Beior	Male	15000	47382	Tabuk	Almoruoj

1 • `SELECT * FROM library.bookborrowed;`

Result Grid | Filter Rows: | Edit: |

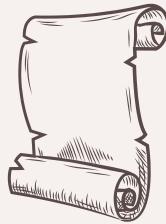
	BooKID	MemID	DateBorrowed	ReturnDueDate
▶	68452	465890328	2022-04-12	2022-06-10
	72474	756890487	2022-02-11	2022-02-27
	75959	476511395	2022-11-05	2023-03-15
	87648	384811245	2022-10-25	2023-01-25
	87698	476511395	2022-07-09	2022-08-05
	92341	384811245	2022-11-05	2023-03-15
	96960	992183920	2022-04-12	2022-06-10
	97439	476511395	2022-02-11	2022-02-27
	97804	657483920	2022-07-09	2022-08-05
	98706	992183920	2022-10-25	2023-01-25
*	NULL	NULL	NULL	NULL

#### **4-Display the data after INSERT.**



1 • **SELECT \* FROM library.book;**

## 4-Display the data after INSERT.



1 • `SELECT * FROM library.booklanguages;`

**Result Grid** | Filter Rows:  Edit:

BookID	BookLanguages
68450	Arabic
68450	English
68450	France
68452	Arabic
68452	English
68452	France
69506	English
72474	English
73913	English
75959	Arabic
75959	English
76396	Arabic
76396	English
78047	Arabic
78047	English
78047	France
78047	Spanish
82416	Arabic
82416	English
83451	English
86848	Arabic
86848	English
86848	French
86848	Spanish
87596	Arabic
87596	English
87596	France
87596	Spanish
87648	Arabic
87648	English
87698	Arabic
87698	English
87698	France
87698	Spanish
89685	Arabic
89685	English
89685	France
89685	Spanish
90726	Arabic
90726	English

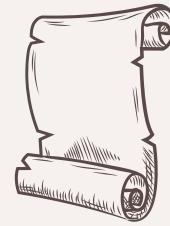
90726	France
90726	Spanish
92341	English
92874	Arabic
92874	English
92874	France
96960	Arabic
96960	English
96960	France
96960	Spanish
97439	English
97609	Arabic
97609	English
97609	France
97804	Arabic
97804	English
97804	France
97804	Spanish
98274	English
98600	English
98706	Arabic
98706	English
98706	France
98706	Spanish
*	NULL
*	NULL

1 • `SELECT * FROM library.booksold;`

**Result Grid** | Filter Rows:  Edit:

BookID	EmpID	CustEmail	CustPhoneNo	OrderType	OrderBill
68452	536653678	ghadamss01@gmail.com	588739820	Hard Copy	50
72474	112998745	Ranomo@gmail.com	548776663	Online	55
73913	287465936	ahmed.kh@gmail.com	543789245	Online	65
87648	264911462	meeee moo2010@hotmail.com	548577637	Online	90
89685	859308721	Ghadoosh@gmail.com	542397463	Online	35
90726	220395729	NoonaAs@gmail.com	500084589	Online	39
92874	918479873	ssk19978@gmail.com	588339850	Hard Copy	49
97804	102865829	Ranomo@gmail.com	548776663	Hard Copy	65
*	NULL	NULL	NULL	NULL	NULL

# 5-SQL Queries using SELECT command



```
246    -- 1. all of Agatha Christie books.  
247 •  SELECT BookName,BookID  
248     FROM Book  
249     WHERE BookAuthor = 'Agatha Christie';  
250
```

BookName	BookID
The Mystery of the Blue Train	78047
The Murder on the Links	87596
And Then There Were None	89685
The Seven Dials	90726
Why Did not They Ask Enans?	98706
*	NULL

```
251    -- 2.show names of costumers who have buy books published by Penguin  
252 •  SELECT CustFName,CustLName  
253     FROM customer  
254     WHERE CustEmail IN (SELECT CustEmail  
255          FROM booksold  
256          WHERE bookid IN (SELECT bookid  
257             FROM book  
258             WHERE bookpublisher ='Penguin'));  
259
```

CustFName	CustLName
Ranim	Alharbi
Lamiaa	Alharbi

```
261    -- 3.all data about memberships in a specific order  
262 •  SELECT *  
263     FROM MemberShip  
264     ORDER BY MemshipType, CustEmail, CusPhoneNo DESC;  
265
```

MemID	MemshipType	CustEmail	CusPhoneNo
992183920	Bronze	faaatoo@hotmail.com	503513949
657483920	Bronze	lele16@hotmail.com	504525520
465890328	Bronze	talaa.b556@outlook.com	568342759
422704028	Diamond	jejeAhmed@gmail.com	545892634
384811245	Diamond	Ranomo@gmail.com	548776663
756890487	Gold	ahmed.kh@gmail.com	543789245
476511395	Gold	looola11@gmail.com	577833934
113690487	Gold	ssk19978@gmail.com	588339850
*	NULL	NULL	NULL



## 5-SQL Queries using SELECT command

```
267    -- 4. number of employee at each city (branch)
268 •  SELECT City, COUNT(EmpID) AS countEMP, SUM(EmpSalary) AS SumSalary
269    FROM Employee
270    GROUP BY City
271    ORDER BY City;
272
```

Result Grid			
	City	countEMP	SumSalary
▶	Baha	2	25000
	Jeddah	4	38000
	Khobar	3	30000
	Mecca	4	51000
	Riyadh	3	39000
	Tabuk	2	24000
	Taif	2	21000

```
273    -- 5. All the books from cheapest to most expensive in alphabetical order.
274 •  SELECT BookName AS "NAME", BookPrice AS 'PRICE'
275    FROM book
276    ORDER BY BookName, BookPrice;
```

Result Grid		
	NAME	PRICE
▶	A Little Princess	20
	A Very Large Expanse of Sea	55
	All the Bright Places	39
	And Then There Were None	35
	Cinder	50
	Eleanor Oliphant is Completely Fine	55
	Everything Everything	55
	Harry Potter and the Chamber of Secrets	49
	Harry Potter and the Goblet of Fire	65
	Harry Potter and the Philosopher Stone	45
	Harry Potter and the Prisoner of Azkaban	45
	Holding Up The Universe	49
	Little Women	60
	Outlander	85
	Ringer	59
	The Battle of the Labyrinth	45
	The fault in our stars	85
	The Lightning Thief	45
	The Murder on the Links	39
	The Mystery of the Blue Train	49
	The Seven Dials	39
	The Sun is Also a Star	35
	The Titans Curse	49
	Why Did not They Ask Enans?	45
	Wonder	45

# 5-SQL Queries using SELECT command



```

279    -- 6.All the books by their languages
280 •  SELECT b.BookID, BookName, BookLanguages
281     FROM Book b, BookLanguages l
282    WHERE b.BookID = l.BookID
283    ORDER BY BookName;
  
```

Result Grid			
	BookID	BookName	BookLanguages
▶	75959	A Little Princess	Arabic
	75959	A Little Princess	English
	73913	A Very Large Expanse of Sea	English
	82416	All the Bright Places	Arabic
	82416	All the Bright Places	English
	89685	And Then There Were None	Arabic
	89685	And Then There Were None	English
	89685	And Then There Were None	France
	89685	And Then There Were None	Spanish
	69506	Cinder	English
	83451	Eleanor Oliphant is Completely Fine	English
	98600	Everything Everything	Arabic
	98600	Everything Everything	English
	92874	Harry Potter and the Chamber of Secrets	Arabic
	92874	Harry Potter and the Chamber of Secrets	English
	92874	Harry Potter and the Chamber of Secrets	France
	97609	Harry Potter and the Goblet of Fire	Arabic
	97609	Harry Potter and the Goblet of Fire	English
	97609	Harry Potter and the Goblet of Fire	France
	68450	Harry Potter and the Philosopher Stone	Arabic
	68450	Harry Potter and the Philosopher Stone	English
	68450	Harry Potter and the Philosopher Stone	France
	68452	Harry Potter and the Prisoner of Azkaban	Arabic
	68452	Harry Potter and the Prisoner of Azkaban	English
	68452	Harry Potter and the Prisoner of Azkaban	France
	72474	Holding Up The Universe	English
	97804	Little Women	Arabic
	97804	Little Women	English
	97804	Little Women	France
	97804	Little Women	Spanish

92341	Outlander	English
98274	Ringer	English
96960	The Battle of the Labyrinth	Arabic
96960	The Battle of the Labyrinth	English
96960	The Battle of the Labyrinth	France
96960	The Battle of the Labyrinth	Spanish
87648	The fault in our stars	Arabic
87648	The fault in our stars	English
86848	The Lightning Thief	Arabic
86848	The Lightning Thief	English
86848	The Lightning Thief	France
86848	The Lightning Thief	Spanish
87596	The Murder on the Links	Arabic
87596	The Murder on the Links	English
87596	The Murder on the Links	France
87596	The Murder on the Links	Spanish
78047	The Mystery of the Blue Train	Arabic
78047	The Mystery of the Blue Train	English
78047	The Mystery of the Blue Train	France
78047	The Mystery of the Blue Train	Spanish
90726	The Seven Dials	Arabic
90726	The Seven Dials	English
90726	The Seven Dials	France
90726	The Seven Dials	Spanish
76396	The Sun is Also a Star	Arabic
76396	The Sun is Also a Star	English
87698	The Titans Curse	Arabic
87698	The Titans Curse	English
87698	The Titans Curse	France
87698	The Titans Curse	Spanish
98706	Why Did not They Ask Enans?	Arabic
98706	Why Did not They Ask Enans?	English
98706	Why Did not They Ask Enans?	France
98706	Why Did not They Ask Enans?	Spanish
97439	Wonder	English

# 5-SQL Queries using SELECT command



```

285      -- 7. the number of books in each language.
286 •  SELECT BookLanguages, COUNT(BookID)
287   FROM BookLanguages
288 GROUP BY BookLanguages;
  
```

Result Grid		Filter Rows:	Export:
BookLanguages	COUNT(BookID)		
Arabic	18		
English	25		
France	13		
Spanish	9		

```

291      -- 8.shows the branches that has less than 4 books Done
292 •  select city ,count(bookid) AS 'number of books'
293   from book
294 group by city
295 having count(bookid)<4;
  
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
city		number of books		
Baha		3		
Khobar		3		
Taif		1		
Riyadh		3		

```

297      -- 9. shows books that are available in 4 languages.
298 •  select bookname AS 'Books that is in 4 languages'
299   from Book
300 where bookid in(select bookid
301   from BookLanguages
302   group by bookid
303   having count(BookLanguages)=4);
304
  
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
Books that is in 4 languages				
The Mystery of the Blue Train				
The Lightning Thief				
The Murder on the Links				
The Titans Curse				
And Then There Were None				
The Seven Dials				
The Battle of the Labyrinth				
Little Women				
Why Did not They Ask Enans?				

```

310      -- 11. All the orders and their types
311 •  select bookid,ordertype
312   from booksold
313 order by ordertype;
  
```

Result Grid		Filter Rows:	Export:
bookid	ordertype		
68452	Hard Copy		
92874	Hard Copy		
97804	Hard Copy		
72474	Online		
73913	Online		
87648	Online		
89685	Online		
90726	Online		

```

306      -- 10. shows all employess names and salaries
307 •  select EmpFName,EmpLName,empsalary
308   from Employee;
309
  
```

Result Grid		Filter Rows:	Export:	Wrap
EmpFName	EmplName	empsalary		
Mawdah	Alghuraybi	12000		
Renad	Alsasadun	11000		
Remas	Felimban	9000		
Turki	Salh	11000		
Assal	Alhazmi	15000		
Muhannad	Hawsawi	9000		
Ahmed	Alhazmi	8000		
Nouf	Assiri	11000		
Ghada	Alsharif	13000		
Asmaa	Alsuraihi	15000		
Raghad	Albadr	10000		
Adnan	Alshehri	10000		
Shahad	Albarakati	9000		
Hussam	Alwafi	8000		
Rinad	Khayat	12000		
Raneem	Alharbi	15000		
Lama	Bugis	13000		
Sultan	Yahya	9000		
Dalal	Alotaibi	13000		
Anmar	Beigar	15000		

## **-SQL Queries using SELECT/UPDATE command**



```
315      -- 12. All the employees' names who has salary between 8000 and 10000
316 •  select EmpFName,EmpLName,empsalary
317   from Employee
318   where empsalary BETWEEN 8000 AND 10000;
```

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	EmpFName	EmpLName	empsalary		
▶	Remas	Felimban	9000		
	Muhannad	Hawsawi	9000		
	Ahmed	Alhazmi	8000		
	Raghad	Albadr	10000		
	Adnan	Alshehri	10000		
	Shahad	Albarakati	9000		
	Hussam	Alwafi	8000		
	Sultan	Yahya	9000		

```
-- increase salary by 5% to all the employees who work more than 8 hours.  
• UPDATE Employee  
SET EmpSalary = EmpSalary * 1.05  
• WHERE ZipCode IN ( SELECT ZipCode  
FROM branch  
WHERE WorkingHours > 8 );  
• select *  
from employee;
```

## **-SQL Queries using DELETE/UPDATE command**



```
333 -- Discount to all of Agatha Christies books!
334 • UPDATE book
335 SET bookPrice = bookprice*0.80
336 WHERE bookauthor = 'Agatha Christie';
337
338 • SELECT *
339 FROM book;
```

```
342 -- Deleting All of John Greens books.  
343 • DELETE FROM book  
344 WHERE BookAuthor = 'John Green';  
345  
346 • SELECT *  
347 FROM book;
```

# TASKS



	RANEEM	GHADA	LAMA	ASMAA	RENAD	MAWDAH
<b>PHASE 2 REFINEMENT</b>			✔			
<b>CREATING SCHEMA/TABLES</b>		✔				
<b>INSERTION</b>	✔	✔	✔	✔	✔	✔
<b>SELECT STATEMENTS</b>	✔	✔	✔	✔	✔	✔
<b>UPDATE/ DELETE STATEMENTS</b>	✔	✔	✔	✔	✔	✔

---

## DIFFICULTIES THAT WE HAVE ENCONTRERED

---



**Lama:** I had some difficulties during writing the code. When we were working on it individually, we had to resend the code again. This took more time than needed especially if there was two who are working simultaneously. I had some difficulty too with the nested select statements, but the more I practice, the better I get in solving it.

**Mawdah:** The difficulty was in the nested select statements and using SQL, but to some extent I did not face many difficulties because I was working with a great team and we were helping each other in understanding with the project work.

**Renad:** The only issue i had was because of copying and pasting the code over and over, some of the statements would work just fine then at other times it would have an error that disappears after dropping the schema and creating everything again.

**Ghadah:** Inserting data and making sure it doesn't match at some attributes and join operations was a little bit confusing for me but I enjoyed every single step in this project with my fabulous team.

**Asmaa:** I did not face any problems in implementing the project, except for the problem of setting a suitable time for meeting with team members, the time of implementation went well and enjoyable.

**Raneem :** The only difficulty I felt was when I took a screenshot of the code and put it in the report. It was a little stressful, but in general, there weren't many difficulties because I work with a wonderful group and I have a doctor who always helped us.