Database Project

Graduate Group 5
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Project question

➢ Setting up a console based system, with MySQL as the backend database. Which includes:

1. Setting up our database with the provided data.

2. Creating a web interface interacting with the backend database. Including info area, input Form, and result area.

3. Correctly Implementing the queries in SQL

1) Setting up database - *Data Exploration*

➢ The file contains data about Books, Customers, Employees, Orders, Order details, Subjects, Supplier and Shipper.

➢ Each of the data has several attributes(fields) and tuples.

➢ Examples: the Book data has 7 columns (BookID, Title, Quantity, Unit Price, Author, SupplierID, SubjectID) and 8 tuples.

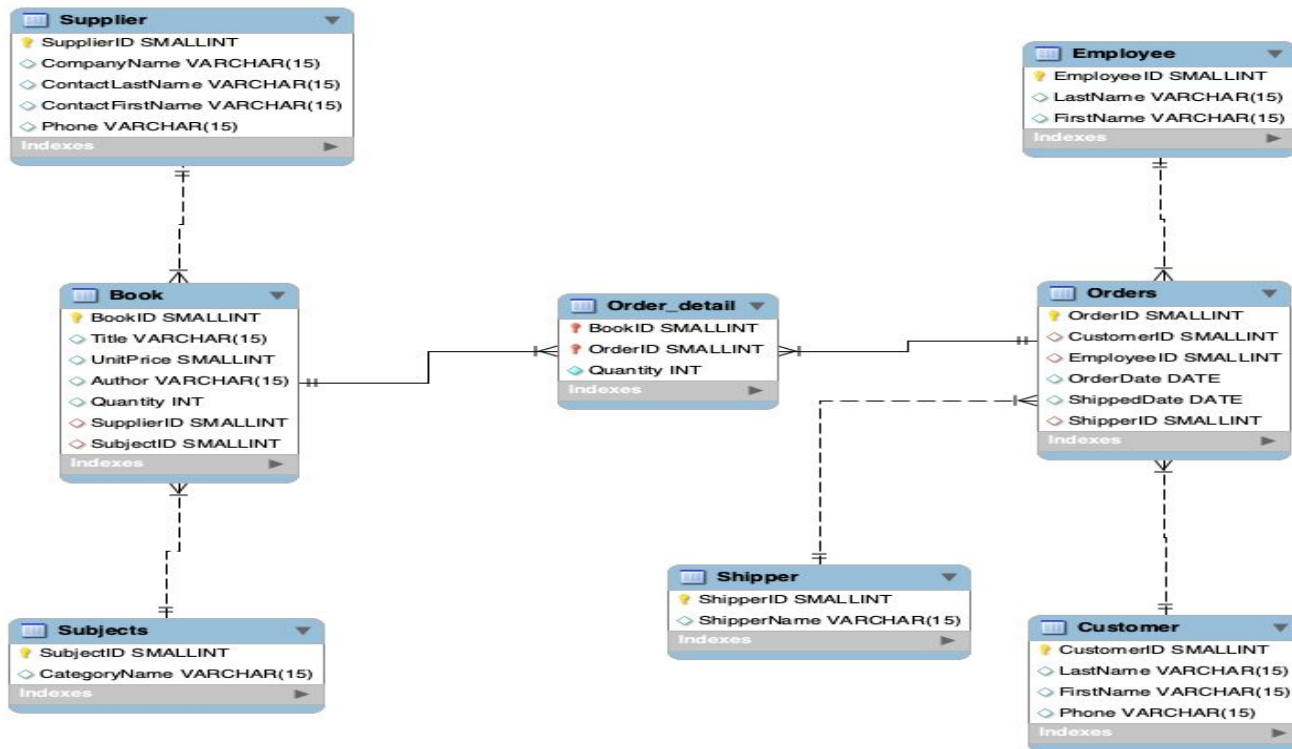# 1) Setting up database - *ER Diagram*
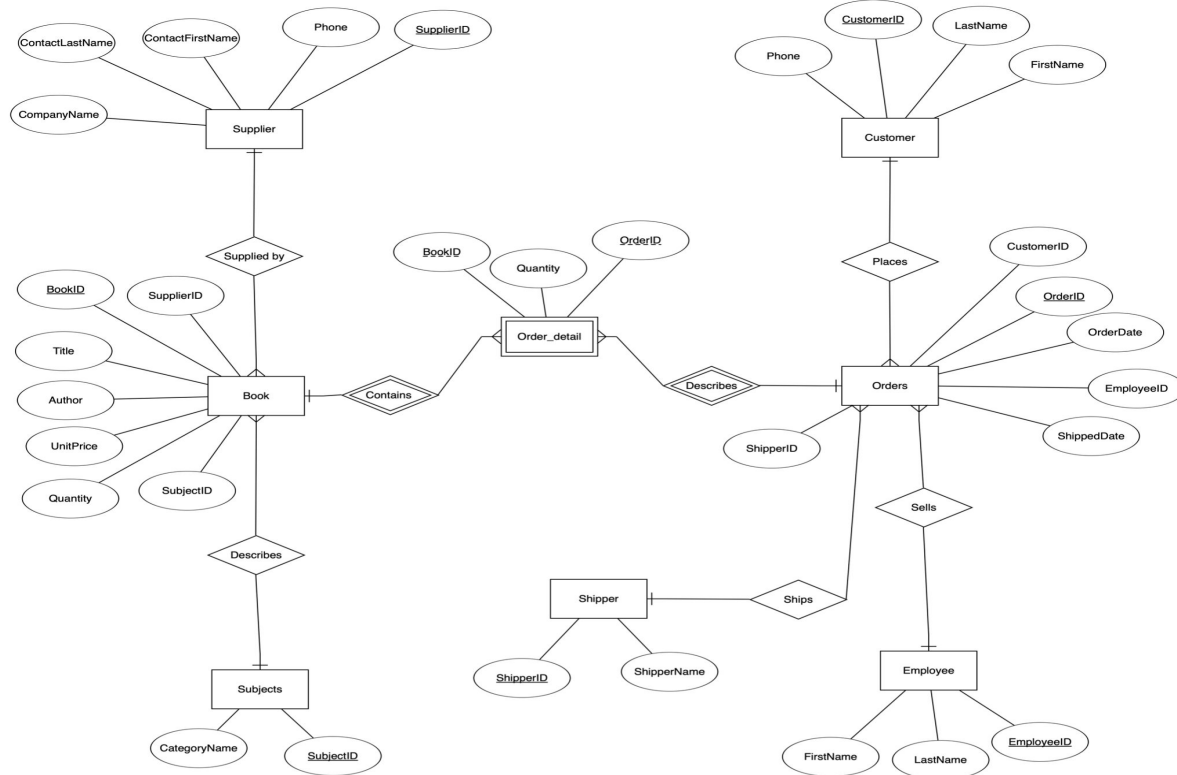
1) Setting up database - *Creating tables* (*Examples*)

CREATE TABLE Customer(

CustomerID SMALLINT NOT NULL,

LastName VARCHAR(15),

FirstName VARCHAR(15),

Phone VARCHAR(15),

PRIMARY KEY(CustomerID));

CREATE TABLE Orders(
OrderID SMALLINT NOT NULL,
CustomerID SMALLINT,
EmployeeID SMALLINT,
OrderDate DATE,
ShippedDate DATE,
ShipperID SMALLINT,
PRIMARY KEY(OrderID),
FOREIGN KEY(CustomerID) REFERENCES
Customer(CustomerID),
FOREIGN KEY(EmployeeID) REFERENCES
Employee(EmployeeID),
FOREIGN KEY(ShipperID) REFERENCES Shipper(ShipperID));

Reverse engineered ER

1) Setting up database -*Inserting values*(*Example*)

INSERT INTO Orders

VALUES ('1','1','1','2016-08-01','2016-08-03','1'),

 ('2','1','2','2016-08-04',NULL,NULL),

 ('3','2','1','2016-08-01','2016-08-04','2'),

 ('4','4','2','2016-08-04','2016-08-04','1'),

 ('5','1','1','2016-08-04','2016-08-05','1'),

 ('6','4','2','2016-08-04','2016-08-05','1'),

 ('7','3','1','2016-08-04','2016-08-04','1');

OrderID	CustomerID	EmployeeID	OrderDate	ShippedDate	ShipperID
1	1	1	2016-08-01	2016-08-03	1
2	1	2	2016-08-04	NULL	NULL
3	2	1	2016-08-01	2016-08-04	2
4	4	2	2016-08-04	2016-08-04	1
5	1	1	2016-08-04	2016-08-05	1
6	4	2	2016-08-04	2016-08-05	1
7	3	1	2016-08-04	2016-08-04	1

2) Web interface

➢ Includes 3 UI components.

1. info area - We printed all the tables in the database on one page.

2. input form - To input SQL statement and submit it to the server to execute.
Our input form doesn't accept drop command.

3. result area, where either error message or the results show.

3) Implementing Queries(*Examples*)

2. Show the name and price of the most expensive book supplied by *supplier3*.

```
• SELECT Title, UnitPrice
     FROM Book
     WHERE UnitPrice IN
              (SELECT  MAX(UnitPrice)
               FROM Book NATURAL JOIN Supplier
               WHERE Supplier.CompanyName='supplier3');
```

19. Show the names of customers who have ordered more than 3 books & their respective telephone numbers.

```
SELECT Customer.FirstName, Customer.LastName, Customer.Phone
From Customer JOIN Orders ON Orders.CustomerID = Customer.CustomerID
              JOIN Order_detail  ON Order_detail.OrderID = Orders.OrderID
GROUP BY Customer.CustomerID
Having SUM(Order_detail.Quantity)>3;
```

Demonstration

Chinedu Eleh:

http://webhome.auburn.edu/~cae0027/database/project.php

Hewan Shemtaga:

http://webhome.auburn.edu/~hms0069/database.php