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Lab 3

Using MySQL Workbench to create Database, Table, Statements related Database.

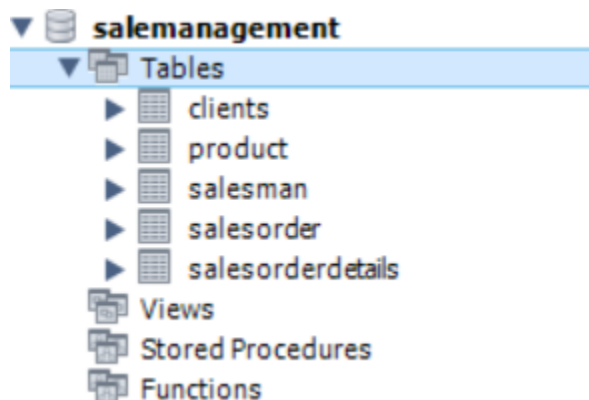
Problem 1: Sale management Database

1. Create the following tables in a new database 'SaleManagerment':

a) Create a new database with the name " SaleManagerment".

```
create database SaleManagement;  
use SaleManagement;
```

b) Create all the tables under this database.



2. Informations Tables:

a) Table Name: **Clients**

b) Table Name: **Product**

c) Table Name: **Salesman**

d) Table Name: **SalesOrder**

e) Table Name: **SalesOrderDetails**

3. Insert Data into following tables:

a) **Clients**

```
INSERT INTO `clients`(`Client_Number`, `Client_Name`, `Address`, `City`, `Pincode`, `Province`, `Amount_Paid`, `Amount_Due`) VALUES
('C101','Mai Xuan','Phu Hoa','Dai An',700001,'Binh Duong',10000,5000),
('C102','Le Xuan','Phu Hoa','Thu Dau Mot',700051,'Binh Duong',18000,3000),
('C103','Trinh Huu','Phu Loi','Da Lat',700051,'Lam Dong ',7000,3200),
('C104','Tran Tuan','Phu Tan','Thu Dau Mot',700080,'Binh Duong',8000,0),
('C105','Ho Nhu','Chanh My','Hanoi',700005,'Hanoi',7000,150),
('C106','Tran Hai','Phu Hoa','Ho Chi Minh',700002,'Ho Chi Minh',7000,1300),
('C107','Nguyen Thanh ','Hoa Phu','Dai An',700023,'Binh Duong',8500,7500),
('C108','Nguyen Sy','Tan An','Da Lat',700032,'Lam Dong ',15000,1000),
('C109','Duong Thanh','Phu Hoa','Ho Chi Minh',700011,'Ho Chi Minh',12000,8000),
('C110','Tran Minh','Phu My','Hanoi',700005,'Hanoi',9000,1000);
```

b) Product

```
INSERT INTO `product`(`Product_Number`, `Product_Name`, `Quantity_On_Hand`, `Quantity_Sell`, `Sell_Price`, `Cost_Price`) VALUES
('P1001','TV',10,30,1000,800),
('P1002','Laptop',12,25,1500,1100),
('P1003','AC',23,10,400,300),
('P1004','Modem',22,16,250,230),
('P1005','Pen',19,13,12,8),
('P1006','Mouse',5,10,100,105),
('P1007','Keyboard',45,60,120,90),
('P1008','Headset',63,75,50,40);
```

c) Salesman

```
INSERT INTO `salesman` VALUES
('S001','Huu','Phu Tan','Ho Chi Minh',700002,'Ho Chi Minh',15000,50,35,'0902361123'),
('S002','Phat','Tan An','Hanoi',700005,'Hanoi',25000,100,110,'0903216542'),
('S003','Khoa','Phu Hoa','Thu Dau Mot',700051,'Binh Duong',17500,40,30,'0904589632'),
('S004','Tien','Phu Hoa','Dai An',700023,'Binh Duong',16500,70,72,'0908654723'),
('S005','Deb','Hoa Phu','Thu Dau Mot',700051,'Binh Duong',13500,60,48,'0903213659'),
('S006','Tin','Chanh My','Da Lat',700032,'Lam Dong',20000,80,55,'0907853497');
```

d) Sales_order

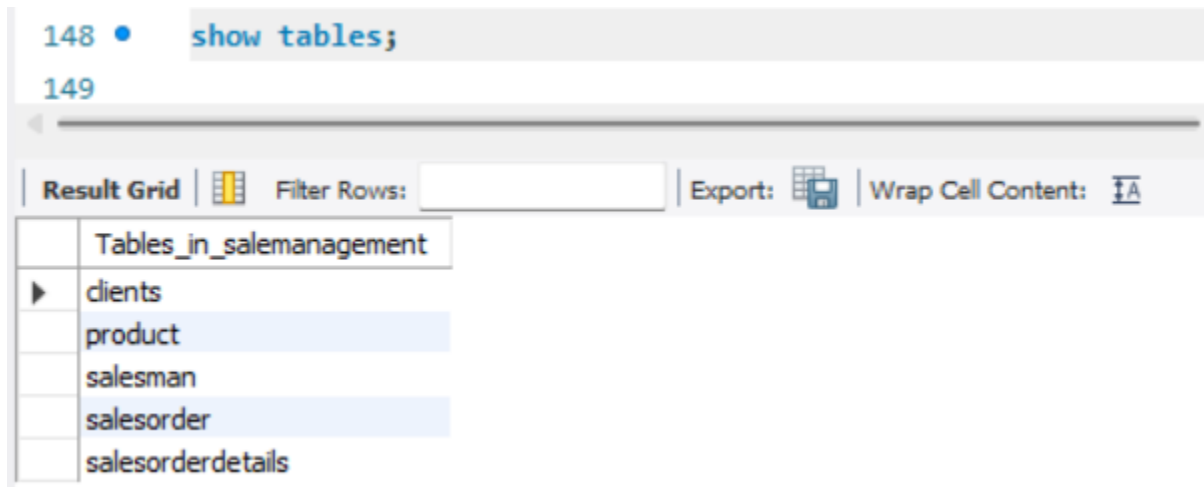
```
INSERT INTO `SalesOrder` VALUES
('020001','2022-01-15','C101','S003','Delivered','2022-02-10','Successful'),
('020002','2022-01-25','C102','S003','Delivered','2022-02-15','Cancelled'),
('020003','2022-01-31','C103','S002','Delivered','2022-04-03','Successful'),
('020004','2022-02-10','C104','S003','Delivered','2022-04-23','Successful'),
('020005','2022-02-18','C101','S003','On Way',null,'Cancelled'),
('020006','2022-02-22','C105','S005','Ready to Ship',null,'In Process'),
('020007','2022-04-03','C106','S001','Delivered','2022-05-08','Successful'),
('020008','2022-04-16','C102','S006','Ready to Ship',null,'In Process'),
('020009','2022-04-24','C101','S004','On Way',null,'Successful'),
('020010','2022-04-29','C106','S006','Delivered','2022-05-08','Successful'),
('020011','2022-05-08','C107','S005','Ready to Ship',null,'Cancelled'),
('020012','2022-05-12','C108','S004','On Way',null,'Successful'),
('020013','2022-05-16','C109','S001','Ready to Ship',null,'In Process'),
('020014','2022-05-16','C110','S001','On Way',null,'Successful');
```

e) Sales_Order_Details

```
INSERT INTO `SalesOrderDetails` VALUES
('020001','P1001',5),
('020001','P1002',4),
('020002','P1007',10),
('020003','P1003',12),
('020004','P1004',3),
('020005','P1001',8),
('020005','P1008',15),
('020005','P1002',14),
('020006','P1002',5),
('020007','P1005',6),
('020008','P1004',8),
('020009','P1008',2),
('020010','P1006',11),
('020010','P1001',9),
('020011','P1007',6),
('020012','P1005',3),
('020012','P1001',2),
('020013','P1006',10),
('020014','P1002',20);
```

4. Write SQL queries for following operations:

a) Show the schema of “Clients”, “Product”, “Salesman”, “Salesorder”, “SalesOrderDetails” tables.



b) Display the content of “Clients”, “Product”, “Salesman”, “Salesorder”, “SalesOrderDetails” tables.

- Clients

1 • `SELECT * FROM salemanagement.clients;`

Result Grid Filter Rows: <input type="text"/> Edit: Export/Import: Wrap Cell Content:								
	Client_Number	Client_Name	Address	City	Pincode	Province	Amount_Paid	Amount_Due
▶	C101	Mai Xuan	Phu Hoa	Dai An	700001	Binh Duong	10000.0000	5000.0000
	C102	Le Xuan	Phu Hoa	Thu Dau Mot	700051	Binh Duong	18000.0000	3000.0000
	C103	Trinh Huu	Phu Loi	Da Lat	700051	Lam Dong	7000.0000	3200.0000
	C104	Tran Tuan	Phu Tan	Thu Dau Mot	700080	Binh Duong	8000.0000	0.0000
	C105	Ho Nhu	Chanh My	Hanoi	700005	Hanoi	7000.0000	150.0000
	C106	Tran Hai	Phu Hoa	Ho Chi Minh	700002	Ho Chi Minh	7000.0000	1300.0000
	C107	Nguyen Thanh	Hoa Phu	Dai An	700023	Binh Duong	8500.0000	7500.0000
	C108	Nguyen Sy	Tan An	Da Lat	700032	Lam Dong	15000.0000	1000.0000
	C109	Duong Thanh	Phu Hoa	Ho Chi Minh	700011	Ho Chi Minh	12000.0000	8000.0000
	C110	Tran Minh	Phu My	Hanoi	700005	Hanoi	9000.0000	1000.0000
✱	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- Product

1 • `SELECT * FROM salemanagement.product;`

Result Grid Filter Rows: <input type="text"/> Edit: Export/Import:						
	Product_Number	Product_Name	Quantity_On_Hand	Quantity_Sell	Sell_Price	Cost_Price
	P1001	TV	10	30	1000.0000	800.0000
	P1002	Laptop	12	25	1500.0000	1100.0000
	P1003	AC	23	10	400.0000	300.0000
	P1004	Modem	22	16	250.0000	230.0000
	P1005	Pen	19	13	12.0000	8.0000
	P1006	Mouse	5	10	100.0000	105.0000
	P1007	Keyboard	45	60	120.0000	90.0000
	P1008	Headset	63	75	50.0000	40.0000
	NULL	NULL	NULL	NULL	NULL	NULL

- Salesman

1 • `SELECT * FROM salemanagement.salesman;`

Salesman_Number	Salesman_Name	Address	City	Pincode	Province	Salary	Sales_Target	Target_Achieved	Phone
S001	Huu	Phu Tan	Ho Chi Minh	700002	Ho Chi Minh	15000.0000	50	35	0902361123
S002	Phat	Tan An	Hanoi	700005	Hanoi	25000.0000	100	110	0903216542
S003	Khoa	Phu Hoa	Thu Dau Mot	700051	Binh Duong	17500.0000	40	30	0904589632
S004	Tien	Phu Hoa	Dai An	700023	Binh Duong	16500.0000	70	72	0908654723
S005	Deb	Hoa Phu	Thu Dau Mot	700051	Binh Duong	13500.0000	60	48	0903213659
S006	Tin	Chanh My	Da Lat	700032	Lam Dong	20000.0000	80	55	0907853497
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL




- Salesorder

1 • `SELECT * FROM salemanagement.salesorder;`

Order_Number	Order_Date	Client_Number	Salesman_Number	Delivery_Status	Delivery_Date	Order_Status
O20001	2022-01-15	C101	S003	Delivered	2022-02-10	Successful
O20002	2022-01-25	C102	S003	Delivered	2022-02-15	Cancelled
O20003	2022-01-31	C103	S002	Delivered	2022-04-03	Successful
O20004	2022-02-10	C104	S003	Delivered	2022-04-23	Successful
O20005	2022-02-18	C101	S003	On Way	NULL	Cancelled
O20006	2022-02-22	C105	S005	Ready to Ship	NULL	In Process
O20007	2022-04-03	C106	S001	Delivered	2022-05-08	Successful
O20008	2022-04-16	C102	S006	Ready to Ship	NULL	In Process
O20009	2022-04-24	C101	S004	On Way	NULL	Successful
O20010	2022-04-29	C106	S006	Delivered	2022-05-08	Successful
O20011	2022-05-08	C107	S005	Ready to Ship	NULL	Cancelled
O20012	2022-05-12	C108	S004	On Way	NULL	Successful
O20013	2022-05-16	C109	S001	Ready to Ship	NULL	In Process
O20014	2022-05-16	C110	S001	On Way	NULL	Successful
NULL	NULL	NULL	NULL	NULL	NULL	NULL

- SalesOrderDetails

1 • **SELECT * FROM** salemanagement.salesorderdetails;

Result Grid   Filter Rows: <input type="text"/> Export:  Wrap C			
	Order_Number	Product_Number	Order_Quantity
▶	O20001	P1001	5
	O20001	P1002	4
	O20002	P1007	10
	O20003	P1003	12
	O20004	P1004	3
	O20005	P1001	8
	O20005	P1008	15
	O20005	P1002	14
	O20006	P1002	5
	O20007	P1005	6
	O20008	P1004	8
	O20009	P1008	2
	O20010	P1006	11
	O20010	P1001	9
	O20011	P1007	6
	O20012	P1005	3
	O20012	P1001	2
	O20013	P1006	10
	O20014	P1002	20

Problem 2: Human Resources Management Database

1. Give the Database Schema below:

EMPLOYEES (employeeID, lastName, middle Name, firstName, dateOfBirth, gender, salary, address, managerID, departmentID)

DEPARTMENT (departmentID, departmentName, managerID, dateOfEmployment)

DEPARTMENTADDRESS (departmentID, address)

PROJECTS (projectID, projectName, projectAddress, departmentID)

ASSIGNMENT (employeeID, projectID, workingHour)

RELATIVE (employeeID, relativeName, gender, dateOfBirth, relationship)

2. Explaining data type of attributes in the table:

a) **EMPLOYEES** (employeeID, lastName, firstName, middle Name, dateOfBirth, gender, salary, managerID, departmentID)

```
create table EMPLOYEE(  
    employeeID varchar(3) primary key,  
    lastName varchar(20) not null,  
    middleName varchar(20),  
    firstName varchar(20) not null,  
    dateOfBirth date not null,  
    gender varchar(5) not null,  
    salary decimal not null,  
    address varchar(100) not null,  
    managerID varchar(3),  
    departmentID int not null  
);  
  
INSERT INTO EMPLOYEE VALUES  
(123, 'Dinh', 'Ba', 'Tien', '1995-01-09', 'Nam', 30000, '731 Tran Hung Dao Q1 TPHCM', 333, 5),  
(333, 'Nguyen', 'Thanh', 'Tung', '1945-12-08', 'Nam', 40000, '638 Nguyen Van Cu Q5 TPHCM', 888, 5),  
(453, 'Tran', 'Thanh', 'Tam', '1962-07-31', 'Nam', 25000, '543 Mai Thi Luu Ba Dinh Ha Noi', 333, 5),  
(666, 'Nguyen', 'Manh', 'Hung', '1952-09-15', 'Nam', 38000, '975 Le Lai P3 Vung Tau', 333, 5),  
(777, 'Tran', 'Hong', 'Quang', '1959-03-29', 'Nam', 25000, '980 Le Hong Phong Vung Tau', 987, 4),  
(888, 'Vuong', 'Ngoc', 'Quyen', '1927-10-10', 'Nu', 55000, '450 Trung Vuong My Tho TG', NULL, 1),  
(987, 'Le', 'Thi', 'Nhan', '1931-06-20', 'Nu', 43000, '291 Ho Van Hue Q.PN TPHCM', 888, 4),  
(999, 'Bui', 'Thuy', 'Vu', '1958-07-19', 'Nam', 25000, '332 Nguyen Thai Hoc Quy Nhon', 987, 4);  
  
1 • SELECT * FROM managementproject.employee;
```

employeeID	lastName	middleName	firstName	dateOfBirth	gender	salary	address	managerID	departmentID
123	Dinh	Ba	Tien	1995-01-09	Nam	30000	731 Tran Hung Dao Q1 TPHCM	333	5
333	Nguyen	Thanh	Tung	1945-12-08	Nam	40000	638 Nguyen Van Cu Q5 TPHCM	888	5
453	Tran	Thanh	Tam	1962-07-31	Nam	25000	543 Mai Thi Luu Ba Dinh Ha Noi	333	5
666	Nguyen	Manh	Hung	1952-09-15	Nam	38000	975 Le Lai P3 Vung Tau	333	5
777	Tran	Hong	Quang	1959-03-29	Nam	25000	980 Le Hong Phong Vung Tau	987	4
888	Vuong	Ngoc	Quyen	1927-10-10	Nu	55000	450 Trung Vuong My Tho TG	NULL	1
987	Le	Thi	Nhan	1931-06-20	Nu	43000	291 Ho Van Hue Q.PN TPHCM	888	4
999	Bui	Thuy	Vu	1958-07-19	Nam	25000	332 Nguyen Thai Hoc Quy Nhon	987	4
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

- `alter table EMPLOYEE`
`add foreign key (managerID) references employee (employeeID);`
- `alter table EMPLOYEE`
`add foreign key (departmentID) references department (departmentID);`

b) **DEPARTMENT** (departmentID, departmentName, managerID, dateOfEmployment)

- `create table DEPARTMENT(`
 `departmentID int primary key,`
 `departmentName varchar(10) not null,`
 `managerID varchar(3) not null,`
 `dateOfEmployment date not null,`
 `foreign key (managerID) references EMPLOYEE (employeeID)`
`);`
- `INSERT INTO department (departmentID, departmentName, managerID, dateOfEmployment) VALUES`
 `(1, 'Quan ly', '888', '1971-06-19'),`
 `(4, 'Dieu hanh', '777', '1985-01-01'),`
 `(5, 'Nghien cuu', '333', '1978-05-22');`

1 • `SELECT * FROM managementproject.department;`

departmentID	departmentName	managerID	dateOfEmployment
1	Quan ly	888	1971-06-19
4	Dieu hanh	777	1985-01-01
5	Nghien cuu	333	1978-05-22
NULL	NULL	NULL	NULL

c) **DEPARTMENTADDRESS** (departmentID, address)

- ```
create table DEPARTMENTADDRESS (
 departmentID int not null,
 address varchar(30),
 primary key (departmentID, address),
 foreign key (departmentID) references DEPARTMENT (departmentID)
);
```
- ```
INSERT INTO departmentaddress (departmentID, address) VALUES
(1, 'TP HCM'),
(4, 'HA NOI'),
(5, 'NHA TRANG'),
(5, 'TP HCM'),
(5, 'VUNG TAU');
```
- 1 •

```
SELECT * FROM managementproject.departmentaddress;
```

departmentID	address
1	TP HCM
4	HA NOI
5	NHA TRANG
5	TP HCM
5	VUNG TAU
NULL	NULL

d) **PROJECTS** (projectID, projectName, projectAddress, departmentID)

- ```
create table PROJECTS(
 projectID int primary key,
 projectName varchar(30) not null,
 projectAddress varchar(100) not null,
 departmentID int not null,
 foreign key (departmentID) references DEPARTMENT (departmentID)
);
```
- ```
INSERT INTO projects (projectID, projectName, projectAddress, departmentID) VALUES
(1, 'San pham X', 'VUNG TAU', 5),
(2, 'San pham Y', 'NHA TRANG', 5),
(3, 'San pham Z', 'TP HCM', 5),
(10, 'Tin hoc hoa', 'HA NOI', 4),
(20, 'Cap Quang', 'TP HCM', 1),
(30, 'Dao tao', 'HA NOI', 4);
```

1 • `SELECT * FROM managementproject.projects;`

projectID	projectName	projectAddress	departmentID
1	San pham X	VUNG TAU	5
2	San pham Y	NHA TRANG	5
3	San pham Z	TP HCM	5
10	Tin hoc hoa	HA NOI	4
20	Cap Quang	TP HCM	1
30	Dao tao	HA NOI	4
NULL	NULL	NULL	NULL

e) ASSIGNMENT (employeeID, projectID, workingHour)

- ```
create table ASSIGNMENT (
 employeeID varchar(3) not null,
 projectID int not null,
 workingHour float not null,
 primary key (employeeID, projectID),
 foreign key (employeeID) references employee (employeeID),
 foreign key (projectID) references projects (projectID)
);
```

- ```
INSERT INTO ASSIGNMENT (employeeID, projectID, workingHour) VALUES  
(123, 1, 22.5),  
(123, 2, 7.5),  
(123, 3, 10),  
(333, 10, 10),  
(333, 20, 10),  
(453, 1, 20),  
(453, 2, 20),  
(666, 3, 40),  
(888, 20, 0),  
(987, 20, 15);
```





1 • `SELECT * FROM managementproject.assignment;`

employeeID	projectID	workingHour
123	1	22.5
123	2	7.5
123	3	10
333	10	10
333	20	10
453	1	20
453	2	20
666	3	40
888	20	0
987	20	15
NULL	NULL	NULL

f) **RELATIVE** (employeeID, relativeName, gender, dateOfBirth, relationship)

- `create table RELATIVE (`
`employeeID varchar(3),`
`relativeName varchar(50),`
`gender varchar(5) not null,`
`dateOfBirth date null,`
`relationship varchar(30) not null,`
`primary key (employeeID, relativeName),`
`foreign key (employeeID) references employee(employeeID)`
`);`
- `INSERT INTO RELATIVE (employeeID, relativeName, gender, dateOfBirth, relationship) VALUES`
`(123, 'Chau', 'Nu', '1978-12-31', 'Con gai'),`
`(123, 'Duy', 'Nam', '1978-01-01', 'Con trai'),`
`(123, 'Phuong', 'Nu', '1957-05-05', 'Vo chong'),`
`(333, 'Duong', 'Nu', '1948-05-03', 'Vo chong'),`
`(333, 'Quang', 'Nu', '1976-04-05', 'Con gai'),`
`(333, 'Tung', 'Nam', '1973-10-25', 'Con trai'),`
`(987, 'Dang', 'Nam', '1932-02-29', 'Vo chong');`

1 • `SELECT * FROM managementproject.relative;`

result Grid		 Filter Rows:	<input type="text"/>	Edit:		
employeeID	relativeName	gender	dateOfBirth	relationship		
123	Chau	Nu	1978-12-31	Con gai		
123	Duy	Nam	1978-01-01	Con trai		
123	Phuong	Nu	1957-05-05	Vo chong		
333	Duong	Nu	1948-05-03	Vo chong		
333	Quang	Nu	1976-04-05	Con gai		
333	Tung	Nam	1973-10-25	Con trai		
987	Dang	Nam	1932-02-29	Vo chong		
NULL	NULL	NULL	NULL	NULL		