Summer 2022 COMP 122 (SEC 006) Assignment #4

Group 6:

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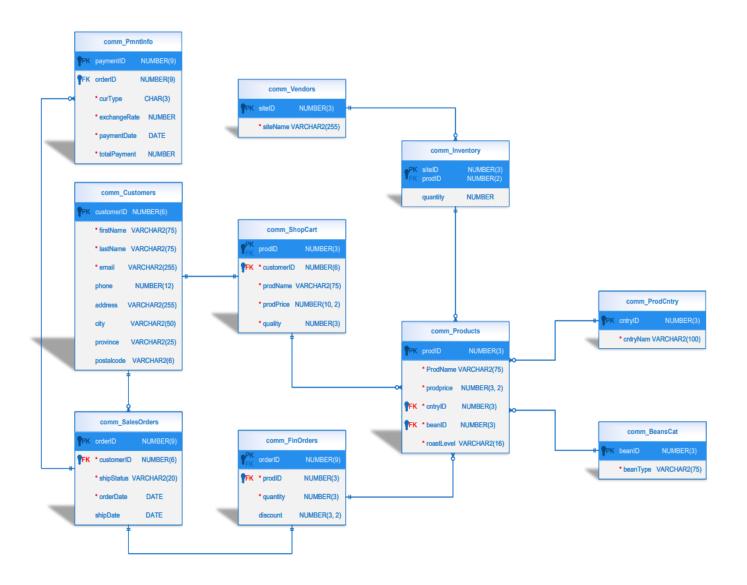
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Assignment #4

Deliverable #1

ER MODEL



Deliverable #2

Table Description

comm_Customers				
Field name	Original name	Data type	Constraint	Default value
customerID		NUMBER(6)	PRIMARY KEY	
firstName		VARCHAR2(75)	NOT NULL	
lastName		VARCHAR2(75)	NOT NULL	
email		VARCHAR2(255)	NOT NULL	
phone		NUMBER(12)		
address		VARCHAR2(255)		
City		VARCHAR2(50)		
Province		VARCHAR2(25)		
postalCode		VARCHAR2(6)		

comm_Vendors				
Field name	Original name	Data type	Constraint	Default value
siteID		NUMBER(3)	PRIMARY KEY	
siteName		VARCHAR2(255)	NOT NULL	

comm_BeansCat (BeansCategory)				
Field name	Original name	Data type	Constraint	Default value
beanID		NUMBER(3)	PRIMARY KEY	
beanType		VARCHAR2(75)	NOT NULL	
			CHECK IN	
			('Robusta',	
			'Excelsa',	
			'Liberica',	
			'Arabica',	
			'Unknown')	

comm_ProdCntry (ProductionCountry)					
Field name	Original name	Data type	Constraint	Default value	
cntryID	countryID	NUMBER(3)	PRIMARY KEY		
cntryName	countryName	VARCHAR2(100)	NOT NULL		
			CHECK IN		
			('BRAZIL',		
			'VIETNAM',		

'COLOMBIA',
'INDONESIA',
'HONDURAS',
'ETHIOPIA',
'PERU', 'INDIA',
'GUATEMALA',
'UGANDA')

comm_Produc	comm_Products				
Field name	Original name	Data type	Constraint	Default value	
prodID	productID	NUMBER(3)	PRIMARY KEY		
prodName	productName	VARCHAR2(75)	NOT NULL		
			CHECK IN		
			('Odacio',		
			'Melozio',		
			'Stormio',		
			'Intenso', 'Elvazio',		
			'Giorno', 'Altesso',		
			'Monaro')		
prodPrice	productPrice	NUMBER(3, 2)	NOT NULL		
cntryID	countryID	NUMBER(3)	NOT NULL		
			FOREIGN KEY		
			(REFERENCE TO		
			comm_ProdCntry)		
beanID		NUMBER(3)	NOT NULL		
			FOREIGN KEY		
			(REFERENCE TO		
			comm_BeanCat)		
roastLevel		VARCHAR2(16)	NOT NULL		
			CHECK IN		
			('light', 'medium',		
			'dark', 'black')		

comm_ShopCart (ShoppingCart)				
Field name	Original name	Data type	Constraint	Default value
customerID		NUMBER(6)	NOT NULL	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_Customers)	
prodID	productId	NUMBER(3)	PRIMARY KEY	

			FOREIGN KEY	
			(REFERENCE TO	
			comm_Products)	
prodName	productName	VARCHAR2(75)	NOT NULL	
prodPrice	productPrice	NUMBER(10, 2)	NOT NULL	
quantity		NUMBER(3)	NOT NULL	
status		VARCHAR2(20)	NOT NULL	
			CHECK IN	
			('Y', 'N')	

comm_SalesOrders				
Field name	Original name	Data type	Constraint	Default value
orderID		NUMBER(9)	PRIMARY KEY	
customerID		NUMBER(6)	NOT NULL	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_Customers)	
shipStatus		VARCHAR2(20)	NOT NULL	
			CHECK IN	
			('pending',	
			'processing', 'sent',	
			'delivered')	
orderDate		DATE	NOT NULL	
shipDate		DATE	NOT NULL	

comm_FinOrders (FinishedOrders)				
Field name	Original name	Data type	Constraint	Default value
orderID		NUMBER(9)	PRIMARY KEY	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_SalesOrders)	
prodID		NUMBER(3)	NOT NULL	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_Products)	
quantity		NUMBER(3)	NOT NULL	
discount		NUMBER(3, 2)	DEFAULT	0

comm_PmntIn	fo (PaymentInform	mation)		
Field name	Original name	Data type	Constraint	Default value

paymentID		NUMBER(9)	PRIMARY KEY	
orderID		NUMBER(9)	NOT NULL	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_SalesOrders)	
curType	currencyType	CHAR(3)	NOT NULL	
			CHECK IN	
			('USD', 'CAD', 'CNY',	
			'EUR', 'MXN', 'YEN',	
			'WON', 'AUD')	
exchangeRate		NUMBER	NOT NULL	0
			DEFAULT	
paymentDate		DATE	NOT NULL	
totalPayment		NUMBER	NOT NULL	

comm_Inventory				
Field name	Original name	Data type	Constraint	Default value
siteID		NUMBER(3)	PRIMARY KEY	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_Vendors)	
prodID		NUMBER(2)	PRIMARY KEY	
			FOREIGN KEY	
			(REFERENCE TO	
			comm_Products)	
quantity		NUMBER		

Deliverable #3

Table Creation

```
CREATE TABLE comm_Customers (
customerID NUMBER(6) PRIMARY KEY,
        firstName VARCHAR2(75) NOT NULL,
        lastName VARCHAR2(75) NOT NULL,
email VARCHAR2(255) NOT NULL,
phone NUMBER(12),
address VARCHAR2(255),
city VARCHAR2(50),
        province VARCHAR2(25),
        postalCode VARCHAR2(6)
);
INSERT INTO comm_Customers
VALUES (103458, 'John', 'Doe', 'johndoe@gmail.com', 6472175632, '123 Royal Lane', 'Toronto', 'Ontario', 'P6A4G5');
INSERT INTO comm_Customers
VALUES (110928, 'Kate', 'Bishop', 'katebishop@gmail.com', 4163450873, '45 Blaze Street', 'Toronto', 'Ontario',
'K4A1J2');
INSERT INTO comm Customers
VALUES (125326, 'Samuel', 'Harris', 'samharris@hotmail.com', 4168983344, '227 Anago Crescent', 'Brampton',
'Ontario', 'H3R5T7');
INSERT INTO comm_Customers
VALUES (134972, 'Lionel', 'Richie', 'lionelrichie@gmail.com', 9056728419, '641 Mavs Crescent', 'Milton', 'Ontario',
'J9E2K3');
INSERT INTO comm Customers
VALUES (144519, 'Kristen', 'Bell', 'kristenbell@hotmail.com', 4168983344, '391 Historic Trail', 'Mississauga',
'Ontario', 'L5P1S4');
INSERT INTO comm_Customers
VALUES (153229, 'Jack', 'Reacher', 'jackreacher@gmail.com', 9056761254, '873 Mantle Way', 'Oakville', 'Ontario',
'O4J1S6');
```

```
CREATE TABLE comm_Vendors (
       siteID NUMBER(3) PRIMARY KEY,
       siteName VARCHAR(255) NOT NULL
);
INSERT INTO comm_Vendors
VALUES (001, 'beansemporium.com');
INSERT INTO comm_Vendors
VALUES (002, 'coffeekulture.com');
INSERT INTO comm_Vendors
VALUES (003, 'kellyscoffee.com');
INSERT INTO comm_Vendors
VALUES (004, 'clevercoffee.com');
INSERT INTO comm_Vendors
VALUES (005, 'southbeanco.com');
CREATE TABLE comm_BeansCat (
        beanID NUMBER(3) PRIMARY KEY,
        beanType VARCHAR2(75) NOT NULL,
CONSTRAINT comm_BeansCat_beanType_ck CHECK (beanType IN ('Robusta', 'Excelsa', 'Liberica', 'Arabica',
'Unknown'))
);
INSERT INTO comm_BeansCat
VALUES (001, 'Robusta');
INSERT INTO comm_BeansCat
VALUES (002, 'Excelsa');
INSERT INTO comm_BeansCat
VALUES (003, 'Liberica');
INSERT INTO comm_BeansCat
```

```
VALUES (004, 'Arabica');
INSERT INTO comm_BeansCat
VALUES (005, 'Unknown');
CREATE TABLE comm_ProdCntry (
        cntryID NUMBER(3) PRIMARY KEY,
        cntryName VARCHAR2(100) NOT NULL,
        CONSTRAINT comm_ProdCntry_cntryName_ck CHECK (cntryName IN ('BRAZIL', 'VIETNAM', 'COLOMBIA',
'INDONESIA', 'HONDURAS', 'ETHIOPIA', 'PERU', 'INDIA', 'GUATEMALA', 'UGANDA'))
);
INSERT INTO comm_ProdCntry
VALUES (001, 'BRAZIL');
INSERT INTO comm_ProdCntry
VALUES (002, 'COLOMBIA');
INSERT INTO comm_ProdCntry
VALUES (003, 'ETHIOPIA');
INSERT INTO comm_ProdCntry
VALUES (004, 'GUATEMALA');
INSERT INTO comm_ProdCntry
VALUES (005, 'HONDURAS');
INSERT INTO comm_ProdCntry
VALUES (006, 'INDIA');
INSERT INTO comm_ProdCntry
VALUES (007, 'INDONESIA');
INSERT INTO comm_ProdCntry
VALUES (008, 'PERU');
INSERT INTO comm_ProdCntry
VALUES (009, 'UGANDA');
INSERT INTO comm_ProdCntry
```

```
CREATE TABLE comm_Products (
        prodID NUMBER(10),
        prodName VARCHAR2(75) NOT NULL,
        prodPrice NUMBER(10, 2) NOT NULL,
        cntryID NUMBER(3) NOT NULL,
        beanID NUMBER(3) NOT NULL,
        roastLevel VARCHAR2(16) NOT NULL,
PRIMARY KEY (prodID),
CONSTRAINT comm_BeansCat_beanID_fk FOREIGN KEY (beanID) REFERENCES comm_BeansCat (beanID),
CONSTRAINT comm_ProdCntry_cntryID_fk FOREIGN KEY (cntryID) REFERENCES comm_ProdCntry (cntryID),
CONSTRAINT comm_Products_prodName_ck CHECK (prodName IN ('Odacio', 'Melozio', 'Stormio', 'Intenso',
'Elvazio', 'Giorno', 'Altesso', 'Monaro')),
CONSTRAINT comm_Products_roastLevel_ck CHECK (roastLevel IN ('light', 'medium', 'dark', 'black'))
);
INSERT INTO comm_Products
VALUES (001, 'Odacio', 12.50, 002, 003, 'medium');
INSERT INTO comm_Products
VALUES (002, 'Melozio', 15.00, 005, 004, 'light');
INSERT INTO comm Products
VALUES (003, 'Stormio', 17.50, 008, 002, 'dark');
INSERT INTO comm Products
VALUES (004, 'Intenso', 20.00, 010, 005, 'black');
INSERT INTO comm_Products
VALUES (005, 'Elvazio', 14.00, 003, 001, 'light');
INSERT INTO comm_Products
VALUES (006, 'Giorno', 16.00, 006, 003, 'medium');
INSERT INTO comm Products
```

VALUES (010, 'VIETNAM');

```
VALUES (007, 'Altesso', 18.50, 004, 002, 'dark');
INSERT INTO comm Products
VALUES (008, 'Monaro', 22.25, 007, 001, 'black');
CREATE TABLE comm_ShopCart (
        customerID NUMBER(6) NOT NULL,
        prodID NUMBER(10),
        prodName VARCHAR2(75) NOT NULL,
        prodPrice NUMBER(10, 2) NOT NULL,
        quantity NUMBER(3) NOT NULL,
        status VARCHAR2(20) NOT NULL,
        PRIMARY KEY (prodID),
         CONSTRAINT comm_ShopCart_customerID_fk FOREIGN KEY (customerID) REFERENCES comm_Customers
(customerID),
         CONSTRAINT comm_ShopCart_prodID_fk FOREIGN KEY (prodID) REFERENCES comm_Products (prodID),
         CONSTRAINT comm_ShopCart_status_ck CHECK (status IN ('Y', 'N'))
);
INSERT INTO comm_ShopCart
VALUES (103458, 001, 'Odacio', 12.50, 4, 'Y');
INSERT INTO comm_ShopCart
VALUES (110928, 003, 'Stormio', 17.50, 3, 'N');
INSERT INTO comm_ShopCart
VALUES (125326, 004, 'Intenso', 20.00, 5, 'Y');
INSERT INTO comm_ShopCart
VALUES (134972, 006, 'Giorno', 16.00, 2, 'Y');
```

```
INSERT INTO comm_ShopCart
VALUES (144519, 008, 'Monaro', 22.25, 3, 'Y');
CREATE TABLE comm_SalesOrders (
        orderID NUMBER(9) PRIMARY KEY,
        customerID NUMBER(6) NOT NULL,
        shipStatus VARCHAR2(20) NOT NULL,
        orderDate DATE NOT NULL,
        shipDate DATE,
                       comm_SalesOrders_customerID_fk
                                                                      KEY
                                                                             (customerID)
        CONSTRAINT
                                                           FOREIGN
                                                                                            REFERENCES
comm_Customers (customerID),
CONSTRAINT comm_salesorders_shipStatus_ck CHECK (shipStatus IN ('pending', 'processing', 'sent', 'delivered'))
);
INSERT INTO comm_SalesOrders
             (00000001,
                                                                      TO DATE('11-AUG-22','DD-MON-YY'),
VALUES
                               103458,
                                              'processing'
TO_DATE('13-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
VALUES (000000002, 110928, 'sent', TO_DATE('08-AUG-22','DD-MON-YY'), TO_DATE('10-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
VALUES
              (00000003,
                                125326,
                                               'pending'
                                                                      TO_DATE('10-AUG-22','DD-MON-YY'),
TO_DATE('12-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
              (000000004,
VALUES
                                134972,
                                               'pending'
                                                                      TO_DATE('12-AUG-22','DD-MON-YY'),
TO DATE('14-AUG-22', 'DD-MON-YY'));
INSERT INTO comm_SalesOrders
VALUES
              (00000005,
                                144519,
                                              'delivered'
                                                                      TO DATE('06-AUG-22','DD-MON-YY'),
TO_DATE('08-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
              (000000006,
                                              'delivered'
                                                                      TO_DATE('05-AUG-22','DD-MON-YY'),
                                134972,
TO_DATE('07-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
```

```
VALUES
              (000000007,
                                125326,
                                              'delivered'
                                                                      TO DATE('02-AUG-22','DD-MON-YY'),
TO_DATE('04-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
VALUES
             (000000008,
                                              'delivered'
                                                                      TO_DATE('01-AUG-22','DD-MON-YY'),
                                110928,
TO_DATE('03-AUG-22','DD-MON-YY'));
INSERT INTO comm_SalesOrders
              (000000009,
                                               'delivered'
                                                                       TO_DATE('30-JUL-22','DD-MON-YY'),
VALUES
                                103458,
TO_DATE('01-AUG-22','DD-MON-YY'));
INSERT INTO comm SalesOrders
VALUES
              (00000010,
                                144519,
                                               'delivered'
                                                                       TO DATE('29-JUL-22','DD-MON-YY'),
TO_DATE('31-JUL-22','DD-MON-YY'));
CREATE TABLE comm FinOrders (
        orderID NUMBER(9),
        prodId NUMBER(10) NOT NULL,
        quantity NUMBER(3) NOT NULL,
        discount NUMBER(10, 2) DEFAULT 0,
        PRIMARY KEY (orderID),
        CONSTRAINT comm_FinOrders_orderID_fk FOREIGN KEY (orderID) REFERENCES comm_SalesOrders
(orderID),
        CONSTRAINT comm_FinOrders_prodID_fk FOREIGN KEY (prodID) REFERENCES comm_Products (prodID)
);
INSERT INTO comm_FinOrders
VALUES (000000005, 003, 3, 5.00);
INSERT INTO comm FinOrders
VALUES (000000006, 007, 2, 8.00);
INSERT INTO comm FinOrders
VALUES (000000007, 008, 6, 12.50);
INSERT INTO comm_FinOrders
VALUES (000000008, 004, 2, 2.50);
```

```
INSERT INTO comm FinOrders
VALUES (000000009, 006, 4, 7.50);
INSERT INTO comm_FinOrders
VALUES (000000010, 002, 5, 10.00);
CREATE TABLE comm PmntInfo (
       paymentID NUMBER(9) PRIMARY KEY,
       orderID NUMBER(9),
       curType CHAR(3),
       exchangeRate NUMBER DEFAULT 0 NOT NULL,
       paymentDate DATE NOT NULL,
       totalPayment NUMBER NOT NULL,
       CONSTRAINT comm_PmntInfo_orderID_fk FOREIGN KEY (orderID) REFERENCES comm_SalesOrders
(orderID),
       CONSTRAINT comm_PmntInfo_curType_ck CHECK (curType IN ('USD', 'CAD', 'CNY', 'EUR', 'MXN', 'YEN',
'WON', 'AUD'))
);
INSERT INTO comm_PmntInfo
VALUES (000000005, 000000005, 'CAD', 0, TO DATE('05-AUG-22', 'DD-MON-YY'), 47.50);
INSERT INTO comm PmntInfo
VALUES (000000006, 000000006, 'CAD', 0, TO DATE('04-AUG-22', 'DD-MON-YY'), 29.00);
INSERT INTO comm_PmntInfo
VALUES (000000007, 000000007, 'USD', 1.29, TO DATE('01-AUG-22', 'DD-MON-YY'), 216.01);
INSERT INTO comm_PmntInfo
VALUES (000000008, 000000008, 'EUR', 1.31, TO_DATE('30-JUL-22','DD-MON-YY'), 49.12);
INSERT INTO comm_PmntInfo
VALUES (000000009, 000000009, 'CAD', 0, TO_DATE('29-JUL-22','DD-MON-YY'), 56.50);
```

```
CREATE TABLE comm_Inventory (
        siteID NUMBER(3),
        prodID NUMBER (10),
        quantity NUMBER,
        PRIMARY KEY (siteID, prodID),
        CONSTRAINT comm_Inventory_siteID_fk FOREIGN KEY (siteID) REFERENCES comm_Vendors (siteID),
        CONSTRAINT comm_Inventory_prodID_fk FOREIGN KEY (prodID) REFERENCES comm_Products (prodID)
);
INSERT INTO comm_Inventory
VALUES (001, 002, 250);
INSERT INTO comm_Inventory
VALUES (001, 005, 250);
INSERT INTO comm_Inventory
VALUES (002, 001, 300);
INSERT INTO comm_Inventory
VALUES (002, 006, 300);
INSERT INTO comm_Inventory
VALUES (003, 003, 350);
INSERT INTO comm_Inventory
VALUES (003, 007, 350);
INSERT INTO comm_Inventory
VALUES (004, 004, 275);
INSERT INTO comm Inventory
VALUES (005, 008, 375);
```

Deliverable #4

Query

```
-- Customers table queries
SELECT * FROM comm Customers;
SELECT FIRSTNAME, LASTNAME, PHONE, CITY FROM comm Customers WHERE CITY = 'Toronto' OR CITY =
'Brampton' ORDER BY firstName;
SELECT FIRSTNAME, LASTNAME FROM comm_Customers WHERE LASTNAME LIKE '_i%';
SELECT postalCode, SUBSTR(postalCode, 1, 3) FROM comm Customers;
SELECT firstName, INSTR(firstName, 't') "First t" FROM comm Customers;
SELECT LOWER(firstName), lastname FROM comm Customers WHERE LOWER(lastName) = 'doe';
SELECT firstName, lastName, CONCAT(firstName, lastName) FROM comm Customers;
-- Vendors table queries
SELECT * FROM comm Vendors;
SELECT * FROM comm_Vendors WHERE SITEID <= 3;</pre>
SELECT siteName, LPAD(siteName, 30, '*') FROM comm_Vendors;
SELECT siteName, LTRIM(siteName, 'c') FROM comm_Vendors WHERE siteName LIKE 'c%';
SELECT comm_Inventory.quantity,comm_vendors.siteName FROM comm_vendors INNER JOIN comm_Inventory
ON comm_Vendors.siteID = comm_Inventory.siteID;
--Beans Categories table queries
SELECT * FROM comm BeansCat;
SELECT * FROM comm_BeansCat WHERE BEANTYPE != 'Unknown';
SELECT beanType, TRANSLATE(beanType, 'a', 'ara') from comm_beansCat;
-- Production countries table queries
SELECT * FROM comm_ProdCntry;
SELECT * FROM comm ProdCntry WHERE CNTRYNAME LIKE '%U%';
SELECT cntryName, LENGTH(cntryName) FROM comm prodCntry;
SELECT c.cntryID, p.prodName FROM comm_prodCntry c, comm_Products p WHERE prodName = 'Odacio';
-- Products table queries
SELECT * FROM comm Products;
SELECT * FROM comm Products WHERE PRODPRICE BETWEEN 15 AND 20 AND ROASTLEVEL LIKE 'dark';
SELECT * FROM comm_Products WHERE PRODNAME LIKE '%io';
SELECT prodPrice, ROUND(prodPrice, 1), TRUNC(prodPrice) FROM comm_Products where prodPrice > 20;
--Shop cart table queries
SELECT * FROM comm_Shopcart;
```

SELECT CUSTOMERID FROM comm Shopcart WHERE QUANTITY = 5;

SELECT customerID, AVG(prodPrice) FROM comm_shopCart GROUP BY customerID HAVING AVG(prodPrice) > 15;

SELECT AVG(SUM(quantity)) FROM comm_shopCart GROUP BY customerID;

SELECT prodPrice, customerID, beanType FROM comm_beansCat NATURAL JOIN comm_shopCart;

--Sales orders table queries

SELECT * FROM comm_SalesOrders;

SELECT * FROM comm SalesOrders WHERE SHIPDATE < '01-AUG-22';

SELECT * FROM comm_SalesOrders WHERE ORDERDATE BETWEEN '01-AUG-22' AND '15-AUG-22';

SELECT * FROM comm SalesOrders WHERE SHIPSTATUS LIKE 'pending';

SELECT orderDate, sysDate, ABS(ROUND(orderDate-sysDate)) FROM comm_salesOrders WHERE orderDate > '10-AUG-22';

SELECT months_between(orderDate, shipDate), add_months(orderDate, 4), next_day(shipDate, 'tuesday') from comm_salesOrders;

--Fin orders table queries

SELECT * FROM comm FinOrders;

SELECT ORDERID, PRODID, DISCOUNT FROM comm_FinOrders WHERE DISCOUNT >= 10;

SELECT COUNT(discount) from comm_finorders;

SELECT prodName, discount from comm_Products p, comm_finOrders f WHERE p.prodID(+) = f.prodID ORDER BY prodName;

SELECT comm_FinOrders.quantity, comm_SalesOrders.orderDate, comm_Products.cntryid FROM ((comm_FinOrders INNER JOIN comm_SalesOrders ON comm_FinOrders.orderID = comm_SalesOrders.orderID) INNER JOIN comm_Products ON comm_FinOrders.prodID = comm_Products.prodID);

--Payment Info table queries

SELECT * FROM comm PmntInfo;

SELECT * FROM comm PmntInfo WHERE CURTYPE = 'CAD';

SELECT * FROM comm PmntInfo WHERE TOTALPAYMENT < 200;

SELECT DISTINCT curType FROM comm_pmntInfo p JOIN comm_salesOrders using (orderID);

SELECT exchangeRate, orderid FROM comm_pmntInfo p LEFT OUTER JOIN comm_finOrders USING (orderID) ORDER BY discount;

--Inventory Info table queries

SELECT * FROM comm_Inventory;

SELECT * FROM comm_Inventory WHERE SITEID = 1 AND QUANTITY < 300;

SELECT * FROM comm_Inventory WHERE PRODID = 2 OR PRODID = 4;

SELECT SUM(quantity), AVG(quantity) FROM comm_Inventory;