**Database: CST8215\_310\_314**

**Activity: Assignment1**

**Computer Programmer Spring 2020**

**Students: Marcelo Monteiro da Silva and Janio Mendonça Junior**

1. **ER Diagram reversed engineered**

**A picture containing screenshot

Description automatically generated**

Figure 1: ERD InventoryII databases

1. Add City\_T and Country\_T to the DROP TABLE list

****

**Figure 2: Drop table statements**

**A picture containing bird

Description automatically generated**

**Figure 3: Drop table output error**

**Explanation of error SQL state 2BP01:**

Country\_T cannot be dropped before the City\_T table because of the constraint dependency. Cntry\_code in the City\_T is a foreign key constraint which essentially says that this column is a reference from Cntry\_code in the Country\_T table, then column Cntry\_code from Country\_T must exist.

1. **DELETE Statements**

****

**Figure 4: Delete statements**

**A screenshot of a cell phone

Description automatically generated**

**Figure 5: Delete statement output error**

**Explanation of error SQL state 23503:**

Deleting the entire ROW from Product\_T, results in delete prod\_code which is a foreign key in table invoice\_line\_t; the reason we are unable to delete Cntry\_Origin = ‘RUS’ is because prod\_code from Cntry\_Origin = ‘RUS’ exists on invoice\_line\_t. The system is trying to maintain integrity of the database by preventing from deleting a prod\_cod affiliated with invoice\_line\_t.

1. JOINS Write two joins. You may use RIGHT JOIN and/or LEFT JOIN
   1. Write a SQL statement to list countries that do not have any Customers

A picture containing drawing

Description automatically generated

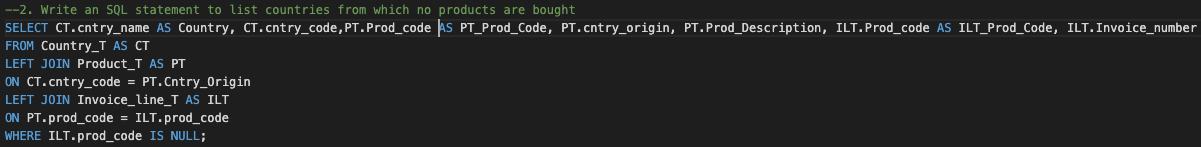
**Figure 6: JOIN 1**

**A screenshot of a cell phone

Description automatically generated**

**Figure 7: JOIN 1 output**

* 1. Write an SQL statement to list countries from which no products are bought

**Figure 8: JOIN 2**

**A screenshot of a cell phone

Description automatically generated**

**Figure 9: JOIN 2 output**

1. **Select statements to verify the tables content**
   1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 10: Country\_T table**

* 1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 11: City\_T table**

* 1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 12: Customer\_T table**

* 1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 13: Product\_T table**

* 1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 14: Invoice\_T table**

* 1. ****

**A screenshot of a computer

Description automatically generated**

**Figure 15: Invoice\_Live\_T table**

* 1. ****

**A screenshot of a cell phone

Description automatically generated**

**Figure 16: Countries\_V view**

* 1. ****

**A screenshot of a social media post

Description automatically generated**

**Figure 17: Countries\_prod\_V view**

1. **mont0371-mend0152-DDL.sql**

-- FileName: mont0371-mend0152-DDL.sql

-- Description: Modified script to create InventoryII database, create TABLEs

-- Author: S Terai

-- Year: 2018

-- Last Modified: 17 Jun 2020

-- Modified by: Marcelo Monteiro da Silva and Janio Mendonça Junior

-----------------------------------------

-- Database: CST8215\_310\_314

-- Activity: Assignment1

-- Computer Programmer Spring 2020

-- Students: Marcelo Monteiro da Silva and Janio Mendonça Junior

--Add: Dropping VIEWs

DROP VIEW IF EXISTS Countries\_V;

DROP VIEW IF EXISTS Countries\_Prod\_V;

DROP TABLE IF EXISTS Invoice\_Line\_T;

DROP TABLE IF EXISTS Product\_T;

DROP TABLE IF EXISTS Invoice\_T;

DROP TABLE IF EXISTS Customer\_T;

DROP TABLE IF EXISTS Country\_T; --Add: Dropping Country\_T table

DROP TABLE IF EXISTS City\_T; --Add: Dropping City\_T table

CREATE TABLE Country\_T (

Cntry\_Code CHAR( 3 ),

Cntry\_Name VARCHAR( 30 ) NOT NULL,

Cntry\_Population BIGINT DEFAULT NULL,

CONSTRAINT PK\_Cntry\_Code PRIMARY KEY( Cntry\_Code )

);

CREATE TABLE City\_T (

City\_ID INTEGER,

City\_Name VARCHAR( 30 ) NOT NULL,

Cntry\_Code CHAR( 3 ),

City\_Population BIGINT DEFAULT NULL,

CONSTRAINT PK\_City\_ID PRIMARY KEY( City\_ID ),

CONSTRAINT FK\_Cntry\_Code FOREIGN KEY( Cntry\_Code ) REFERENCES Country\_T( Cntry\_Code )

);

CREATE TABLE Customer\_T (

Cust\_Id CHAR( 4 ),

Cust\_Fname VARCHAR( 30 ) NULL,

Cust\_Lname VARCHAR( 30 ) NOT NULL,

Cust\_Phone VARCHAR( 15 ) NOT NULL,

Cust\_Address VARCHAR( 20 ) NOT NULL,

Cust\_City VARCHAR( 15 ) NOT NULL,

Cust\_Prov CHAR( 2 ) NULL,

Cust\_PostCode CHAR( 6 ) NOT NULL,

Cust\_Country CHAR( 3 ), --Add: column acording to "Modify Customer\_T table"

Cust\_Balance DECIMAL( 9, 2 ),

CONSTRAINT PK\_Customer PRIMARY KEY( Cust\_Id ),

CONSTRAINT FK\_Cntry\_Code FOREIGN KEY( Cust\_Country ) REFERENCES Country\_T( Cntry\_Code ) --Add: country table FK acording to "Modify Customer\_T table"

);

CREATE TABLE Invoice\_T (

Invoice\_Number CHAR( 6 ),

Cust\_Id CHAR( 4 ) NOT NULL,

Invoice\_Date DATE DEFAULT NOW(),

CONSTRAINT PK\_Invoice PRIMARY KEY( Invoice\_Number ),

CONSTRAINT FK\_Cust\_ID FOREIGN KEY( Cust\_Id ) REFERENCES Customer\_T( Cust\_ID )

);

CREATE TABLE Product\_T (

Prod\_Code CHAR( 5 ),

Cntry\_Origin CHAR( 3 ), --Add column acording to "Modify Product\_T table"

Prod\_Description VARCHAR( 60 ) NOT NULL,

Prod\_Indate DATE NOT NULL DEFAULT NOW(),

Prod\_QOH INTEGER NOT NULL,

Prod\_Min INTEGER,

Prod\_Price DECIMAL( 5, 2 ) NOT NULL,

Prod\_Discount INTEGER,

CONSTRAINT PK\_Product PRIMARY KEY( Prod\_Code ),

CONSTRAINT FK\_Cntry\_Code FOREIGN KEY( Cntry\_Origin ) REFERENCES Country\_T( Cntry\_Code ) --Add country table FK acording to "Modify Product\_T table"

);

CREATE TABLE Invoice\_Line\_T (

Invoice\_Number CHAR( 6 ),

Invoice\_Line INTEGER,

Prod\_Code CHAR( 5 ) NOT NULL,

Line\_Unit INTEGER NOT NULL,

Line\_Price DECIMAL( 9, 2 ) NOT NULL,

CONSTRAINT PK\_Invoice\_Line PRIMARY KEY( Invoice\_Number, Invoice\_Line ),

CONSTRAINT FK1\_Invoice\_Line FOREIGN KEY( Invoice\_Number ) REFERENCES Invoice\_T( Invoice\_Number ),

CONSTRAINT FK2\_Invoice\_Line FOREIGN KEY( Prod\_Code ) REFERENCES Product\_T( Prod\_Code )

);

-- Add:create view for listing Cities, Country and Population

CREATE VIEW Countries\_V AS

SELECT City\_name, Country\_T.Cntry\_name AS Country, City\_Population AS Population

FROM City\_T, Country\_T

WHERE city\_T.Cntry\_Code IN ('BRA', 'CAN', 'MEX', 'CHN')

AND Country\_T.Cntry\_code = City\_T.Cntry\_code

ORDER BY Country\_T.Cntry\_Code;

-- Add: create a view to list product count in each country from WHERE clause

CREATE VIEW Countries\_Prod\_V AS

SELECT Country\_T.Cntry\_name AS Country, COUNT (Product\_T.Cntry\_Origin) AS Product\_Per\_Country

FROM Country\_T, Product\_T

WHERE Country\_T.Cntry\_Code IN ('BRA', 'CHN', 'MEX', 'RUS','CAN')

AND Product\_T.Cntry\_origin = Country\_T.Cntry\_code

GROUP BY Country\_T.Cntry\_Code;

-- eof: mont0371-mend0152-DDL.sql

**A screenshot of a cell phone

Description automatically generated**

**Figure 18: DDL output**

1. **mont0371-mend0152-DML.sql**

-- Filename: mont0371-mend0152-DML.sql

-- Description: script to populate Inventory Database

-- CST 8215

-- Author: S Terai

-- Year: 2018

-- Last Modified: 17 Jun 2020

-- Modified by: Marcelo Monteiro da Silva and Janio Mendonça Junior

-----------------------------------------

-- Database: CST8215\_310\_314

-- Activity: Assignment1

-- Computer Programmer Spring 2020

-- Students: Marcelo Monteiro da Silva and Janio Mendonça Junior

--Dropping Tables

DELETE FROM Invoice\_Line\_T;

DELETE FROM Product\_T;

DELETE FROM Invoice\_T;

DELETE FROM Customer\_T;

DELETE FROM City\_T; --Add: Dropping City\_T table

DELETE FROM Country\_T; --Add: Dropping Country\_T table

-- Add: Insert Country data

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('RUS','Russian Federation', 144192450 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('MEX','Mexico', 119530753 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('CAN','Canada', 36155487 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('DZA','Algeria', 40400000 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('CHN','China', 1376049000 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('CHL','Chile', 18006407 );

INSERT INTO Country\_T( Cntry\_Code, Cntry\_Name, Cntry\_Population )

VALUES('BRL','Brazil', 210000000 );

-- Add Insert City data

INSERT INTO City\_T ( City\_ID, City\_Name, Cntry\_Code, City\_Population)

VALUES('1', 'Recife', 'BRL', '1555000');

INSERT INTO City\_T ( City\_ID, City\_Name, Cntry\_Code, City\_Population)

VALUES('2', 'Ottawa', 'CAN', '994837');

INSERT INTO City\_T ( City\_ID, City\_Name, Cntry\_Code, City\_Population)

VALUES('3', 'Cancun', 'MEX', '740000');

INSERT INTO City\_T ( City\_ID, City\_Name, Cntry\_Code, City\_Population)

VALUES('4', 'Vladivostok', 'RUS', '598927');

INSERT INTO City\_T ( City\_ID, City\_Name, Cntry\_Code, City\_Population)

VALUES('5', 'Hong Kong', 'CHN', '7451000');

-- Add Customer data

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C001', 'Marcelo', 'Monteiro', '111-111-1111', '111 Street', 'Recife', 'PE', '11111', 'BRL', 100 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C002', 'Lennox', 'Bain', '222-222-2222', '2685 Iris St', 'Ottawa', 'ON', 'K2C3S4', 'CAN', 200 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C003', 'Arjan', 'Tyler', '333-333-3333', '333 Manuel Gonzales', 'Cancun', 'CM', 'K33333', 'MEX', 300 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C004', 'John', 'King', '444-444-4444', '444 Av Agamenon', 'Recife', 'PE', 'K44444', 'BRL', 400 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C005', 'Jackie', 'Chan', '555-555-5555', '555 Kwun Tong Rd', 'Hong Kong', 'HK', 'K55555', 'CHN', 500 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C006', 'Cayson', 'Mosley', '613-727-4723', '1385 Woodroffe Ave' , 'Ottawa', 'ON', 'K2G1V8', 'CAN', 600 );

INSERT INTO Customer\_T( Cust\_Id, Cust\_Fname, Cust\_Lname, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C090', 'Raul', 'Vargas', '999-000-9090', '9090 Bermudas Avenue' , 'Chileno', 'CH', 'K90909', 'CHL', 600 );

-- mandatory data for Customer table

INSERT INTO Customer\_T( Cust\_ID, Cust\_FName, Cust\_LName, Cust\_Phone, Cust\_Address, Cust\_City, Cust\_Prov, Cust\_PostCode, Cust\_Country, Cust\_Balance )

VALUES( 'C097', 'Aze', 'Balai', '7-731-707-7243', 'Ulitsa Aleutskaya','Valdivostok', 'VL','VL7SK4', 'RUS', 0 );

-- Add Invocie data

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23001', 'C001', '2011-02-15' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23002', 'C001', '2011-04-25' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23003', 'C004', '2011-06-12' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23004', 'C002', '2011-07-08' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23005', 'C005', '2011-08-24' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23006', 'C006', '2011-09-07' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23007', 'C006', '2010-12-28' );

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I23008', 'C006', '2011-12-15' );

-- mandatory data for Invoice table

INSERT INTO Invoice\_T( Invoice\_Number, Cust\_Id, Invoice\_Date )

VALUES( 'I88001', 'C097', '2018-01-15' );

-- Add Product data

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2011', 'CAN', 'Compac Presario', '2011-02-14', 20, 5, 499.99, 0 );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2012', 'CHN', 'HP laptop', '2010-09-25', 40, 5, 529.99, 0 );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2013', 'RUS', 'Samsung LCD', '2010-02-15', 22, 8, 329.99, 0 );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2014', 'BRL', 'Brother Network All-In-One Laser Printer', '2010-10-10', 50, 10, 159.99, 0 );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2015', 'MEX', 'Western Digital External Hard drive', '2010-04-08', 30, 10, 149.99, NULL );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2016', 'CAN', 'Apple iPad 2 with Wi-Fi + 3G', '2011-02-23', 90, 200, 849.00, 0 );

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2017', 'CAN', 'iPAD 2 Smart Cover', '2011-02-14', 70, 10, 45.00, 10 );

-- Add product from Chile

INSERT INTO Product\_T( Prod\_Code, Cntry\_Origin, Prod\_Description, Prod\_Indate, Prod\_QOH, Prod\_Min, Prod\_Price, Prod\_Discount )

VALUES( 'P2021', 'CHL', 'Logitech Mx Keys', '2011-02-18', 50, 10, 159.99, 0 );

-- mandatory data for Product table

INSERT INTO Product\_T( Prod\_Code, Prod\_Description, Prod\_InDate, Prod\_QOH, Prod\_Min, Cntry\_Origin, Prod\_Price, Prod\_Discount )

VALUES( 'P2119', 'Organic Chard', '2018-01-14', 240, 100, 'RUS', 15.00, 5 );

INSERT INTO Product\_T( Prod\_Code, Prod\_Description, Prod\_InDate, Prod\_QOH, Prod\_Min, Cntry\_Origin, Prod\_Price, Prod\_Discount )

VALUES( 'P2020', 'Organic Collard Green', '2018-01-14', 140, 110, 'RUS', 11.00, 5 );

-- Add Invoice Line Data

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23001', 1, 'P2011', 1, 650.75 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23001', 2, 'P2014', 3, 159.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23002', 1, 'P2012', 1, 529.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23003', 1, 'P2015', 3, 140.75 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23004', 1, 'P2014', 1, 159.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23005', 1, 'P2016', 1, 798.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23006', 1, 'P2011', 1, 499.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23007', 1, 'P2012', 1, 529.99 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23008', 1, 'P2016', 3, 689.00 );

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I23008', 2, 'P2017', 3, 35.99 );

-- mandatory data for Invoice\_Line Table

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I88001', 1, 'P2119', 3, 15.00 );

-- mandatory data for Invoice\_Line Table

INSERT INTO Invoice\_Line\_T( Invoice\_Number, Invoice\_Line, Prod\_Code, Line\_Unit, Line\_Price )

VALUES( 'I88001', 2, 'P2020', 3, 11.00 );

-- eof: mont0371-mend0152-DML.sql

A screenshot of a social media post

Description automatically generated

**Figure 19: DML output**