05. DB-Basics-Table-Relations-Exercises

/\* 01OneToOneRelationship\*/

CREATE TABLE Persons

(

PersonID INT NOT NULL,

FirstName VARCHAR(50) NOT NULL,

Salary DECIMAL(15, 2),

PassportID INT NOT NULL

)

CREATE TABLE Passports

(

PassportID INT NOT NULL,

PassportNumber NVARCHAR(50)

)

INSERT INTO Persons

VALUES

(1, 'Roberto', 43300.00, 102),

(2, 'Tom', 56100.00, 103),

(3, 'Yana', 60200.00, 101)

INSERT INTO Passports

VALUES

(101, 'N34FG21B'),

(102, 'K65LO4R7'),

(103, 'ZE657QP2')

ALTER TABLE Persons

ADD CONSTRAINT PK\_PersonID PRIMARY KEY(PersonID)

ALTER TABLE Passports

ADD CONSTRAINT UQ\_PassportID UNIQUE(PassportID)

ALTER TABLE Passports

ADD CONSTRAINT PK\_PassportID PRIMARY KEY(PassportID)

ALTER TABLE Persons

ADD CONSTRAINT FK\_Persons\_Passports FOREIGN KEY(PassportID) REFERENCES Passports(PassportID)

/\* 02OneToManyRelationship\*/

CREATE TABLE Manufacturers

(

ManufacturerID INT NOT NULL PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL,

EstablishedOn DATE NOT NULL

)

CREATE TABLE Models

(

ModelID INT NOT NULL PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL,

ManufacturerID INT NOT NULL,

CONSTRAINT FK\_Models\_Manufacturers FOREIGN KEY(ManufacturerID) REFERENCES Manufacturers(ManufacturerID)

)

INSERT INTO Manufacturers

VALUES

(1, 'BMV', '07/03/1916'),

(2, 'Tesla', '01/01/2003'),

(3, 'Lada', '01/05/1966')

INSERT INTO Models

VALUES

(101, 'X1', 1),

(102, 'i6', 1),

(103, 'ModelS', 1),

(104, 'ModelX', 2),

(105, 'Model3', 2),

(106, 'Nova', 3)

/\* 03ManyToManyRelationShip\*/

CREATE TABLE Students

(

StudentID INT NOT NULL PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL

)

CREATE TABLE Exams

(

ExamID INT NOT NULL PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL

)

CREATE TABLE StudentsExams

(

StudentID INT NOT NULL,

ExamID INT NOT NULL,

CONSTRAINT PK\_StudentsExams PRIMARY KEY(StudentID, ExamID),

CONSTRAINT FK\_StudentEsams\_Students FOREIGN KEY(StudentID) REFERENCES Students(StudentID),

CONSTRAINT FK\_StudentExams\_Exams FOREIGN KEY(ExamID) REFERENCES Exams(ExamID)

)

INSERT INTO Students

VALUES

(1, 'Mila'),

(2, 'Toni'),

(3, 'Ron')

INSERT INTO Exams

VALUES

(101, 'SpringMVC'),

(102, 'Neo4j'),

(103, 'Oracle 11g')

INSERT INTO StudentsExams

VALUES

(1, 101),

(1, 102),

(2, 101),

(3, 103),

(2, 102),

(2, 103)

/\* 04SelfReferencing\*/

CREATE TABLE Teachers

(

TeacherID INT NOT NULL CONSTRAINT PK\_Teachers\_TeacherID PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL,

ManagerID INT CONSTRAINT FK\_Teachers\_ManagerID FOREIGN KEY REFERENCES Teachers(TeacherID)

)

INSERT INTO Teachers

VALUES

(101, 'John', NULL),

(102, 'Maya', 106),

(103, 'Silvia', 106),

(104, 'Ted', 105),

(105, 'Mark', 101),

(106, 'Greta', 101)

/\* 05OnlineStoreDatabase\*/

CREATE DATABASE OnlineStore

--In Judge must be paste without this above

CREATE TABLE ItemTypes

(

ItemTypeID INT NOT NULL CONSTRAINT PK\_ItemTypes PRIMARY KEY,

[Name] VARCHAR(50) NOT NULL

)

CREATE TABLE Items

(

ItemID INT NOT NULL CONSTRAINT PK\_Items PRIMARY KEY,

[Name] VARCHAR(50) NOT NULL,

ItemTypeID INT NOT NULL CONSTRAINT FK\_Items\_ItemTypes FOREIGN KEY REFERENCES ItemTypes(ItemTypeID)

)

CREATE TABLE Cities

(

CityID INT NOT NULL CONSTRAINT PK\_Cities PRIMARY KEY,

[Name] VARCHAR(50) NOT NULL

)

CREATE TABLE Customers

(

CustomerID INT NOT NULL CONSTRAINT PK\_Customers PRIMARY KEY,

[Name] VARCHAR(50) NOT NULL,

Birthday DATE NOT NULL,

CityID INT NOT NULL CONSTRAINT FK\_Customers\_Cities FOREIGN KEY REFERENCES Cities(CityID)

)

CREATE TABLE Orders

(

OrderID INT NOT NULL CONSTRAINT PK\_Orders PRIMARY KEY,

CustomerID INT NOT NULL CONSTRAINT FK\_Orders\_Customers FOREIGN KEY REFERENCES Customers(CustomerID)

)

CREATE TABLE OrderItems

(

OrderID INT NOT NULL,

ItemID INT NOT NULL,

CONSTRAINT PK\_OrderItems PRIMARY KEY(OrderID, ItemID),

CONSTRAINT FK\_OrderItems\_Orders FOREIGN KEY(OrderID) REFERENCES Orders(OrderID),

CONSTRAINT FK\_OrderItems\_Items FOREIGN KEY(ItemID) REFERENCES Items(ItemID)

)

/\* 06UniversityDatabase\*/

CREATE DATABASE University

--In Judge must be paste without this above

CREATE TABLE Subjects

(

SubjectID INT NOT NULL CONSTRAINT PK\_Subjects PRIMARY KEY,

SubjectName NVARCHAR(50) NOT NULL

)

CREATE TABLE Majors

(

MajorID INT NOT NULL CONSTRAINT PK\_Majors PRIMARY KEY,

[Name] NVARCHAR(50) NOT NULL

)

CREATE TABLE Students

(

StudentID INT NOT NULL CONSTRAINT PK\_Students PRIMARY KEY,

StudentNumber NVARCHAR(50) NOT NULL,

StudentName NVARCHAR(50) NOT NULL,

MajorID INT NOT NULL CONSTRAINT FK\_Sudents\_Majors FOREIGN KEY REFERENCES Majors(MajorID)

)

CREATE TABLE Agenda

(

StudentID INT NOT NULL,

SubjectID INT NOT NULL,

CONSTRAINT PK\_Agenda PRIMARY KEY(StudentID, SubjectID),

CONSTRAINT FK\_Agenda\_Students FOREIGN KEY(StudentID) REFERENCES Students(StudentID),

CONSTRAINT FK\_Agenda\_Subjects FOREIGN KEY(SubjectID) REFERENCES Subjects(SubjectID)

)

CREATE TABLE Payments

(

PaymentID INT NOT NULL CONSTRAINT PK\_Payments PRIMARY KEY,

PaymentDate DATETIME NOT NULL,

PaymentAmount DECIMAL(15, 2) NOT NULL,

StudentID INT NOT NULL CONSTRAINT FK\_Payments\_Students FOREIGN KEY REFERENCES Students(StudentID)

)

/\* 07SoftUniDesign\*/

--If right click on "Database Diagrams" then select "New Database Diagram" throws error:

--New query:

--EXEC sp\_changedbowner 'sa'

/\* 08GeographyDesign\*/

--If right click on "Database Diagrams" then select "New Database Diagram" throws error:

--New query:

--EXEC sp\_changedbowner 'sa'

/\* 09PeaksInRila\*/

SELECT m.MountainRange, p.PeakName, p.Elevation

FROM Mountains AS m

JOIN Peaks AS p ON p.MountainId = m.Id

WHERE MountainRange = 'Rila'

ORDER BY p.Elevation DESC