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-- tables

-- Table: Class

CREATE TABLE Class (

id int NOT NULL,

name varchar(50) NOT NULL,

startDate date NOT NULL,

Teacher\_id int NOT NULL,

Course\_id int NOT NULL,

CONSTRAINT Class\_pk PRIMARY KEY (id)

) ;

-- Table: Class\_Student

CREATE TABLE Class\_Student (

Student\_id int NOT NULL,

Class\_id int NOT NULL,

CONSTRAINT Class\_Student\_pk PRIMARY KEY (Student\_id,Class\_id)

) ;

-- Table: Course

CREATE TABLE Course (

id int NOT NULL,

mathLessons int NOT NULL,

description varchar(300) NOT NULL,

Math\_Topics\_id int NOT NULL,

Level\_Math\_id int NOT NULL,

CONSTRAINT Course\_pk PRIMARY KEY (id)

) ;

-- Table: Level\_Math

CREATE TABLE Level\_Math (

id int NOT NULL,

name varchar(50) NOT NULL,

levels varchar(5) NOT NULL,

CONSTRAINT Level\_Math\_pk PRIMARY KEY (id)

) ;

-- Table: Math\_Topics

CREATE TABLE Math\_Topics (

id int NOT NULL,

name varchar(50) NOT NULL,

Teacher\_id int NOT NULL,

CONSTRAINT Math\_Topics\_pk PRIMARY KEY (id)

) ;

-- Table: Person\_Account

CREATE TABLE Person\_Account (

id int NOT NULL,

login varchar(50) NOT NULL,

password varchar(50) NOT NULL,

firstName varchar(50) NOT NULL,

lastName varchar(20) NOT NULL,

birthDate date NOT NULL,

email varchar(50) NOT NULL,

CONSTRAINT Person\_Account\_pk PRIMARY KEY (id)

) ;

-- Table: Student

CREATE TABLE Student (

id int NOT NULL,

Person\_Account\_id int NOT NULL,

CONSTRAINT Student\_pk PRIMARY KEY (id)

) ;

-- Table: Teacher

CREATE TABLE Teacher (

id int NOT NULL,

Person\_Account\_id int NOT NULL,

CONSTRAINT Teacher\_pk PRIMARY KEY (id)

) ;

-- foreign keys

-- Reference: Class\_Course (table: Class)

ALTER TABLE Class ADD CONSTRAINT Class\_Course

FOREIGN KEY (Course\_id)

REFERENCES Course (id);

-- Reference: Class\_Student\_Class (table: Class\_Student)

ALTER TABLE Class\_Student ADD CONSTRAINT Class\_Student\_Class

FOREIGN KEY (Class\_id)

REFERENCES Class (id);

-- Reference: Class\_Student\_Student (table: Class\_Student)

ALTER TABLE Class\_Student ADD CONSTRAINT Class\_Student\_Student

FOREIGN KEY (Student\_id)

REFERENCES Student (id);

-- Reference: Class\_Teacher (table: Class)

ALTER TABLE Class ADD CONSTRAINT Class\_Teacher

FOREIGN KEY (Teacher\_id)

REFERENCES Teacher (id);

-- Reference: Course\_Level\_Math (table: Course)

ALTER TABLE Course ADD CONSTRAINT Course\_Level\_Math

FOREIGN KEY (Level\_Math\_id)

REFERENCES Level\_Math (id);

-- Reference: Course\_Math\_Topics (table: Course)

ALTER TABLE Course ADD CONSTRAINT Course\_Math\_Topics

FOREIGN KEY (Math\_Topics\_id)

REFERENCES Math\_Topics (id);

-- Reference: Math\_Topics\_Teacher (table: Math\_Topics)

ALTER TABLE Math\_Topics ADD CONSTRAINT Math\_Topics\_Teacher

FOREIGN KEY (Teacher\_id)

REFERENCES Teacher (id);

-- Reference: Student\_Person\_Account (table: Student)

ALTER TABLE Student ADD CONSTRAINT Student\_Person\_Account

FOREIGN KEY (Person\_Account\_id)

REFERENCES Person\_Account (id);

-- Reference: Teacher\_Person\_Account (table: Teacher)

ALTER TABLE Teacher ADD CONSTRAINT Teacher\_Person\_Account

FOREIGN KEY (Person\_Account\_id)

REFERENCES Person\_Account (id);

-- End of file.

DROP TABLE Class\_Student;

DROP TABLE Class;

DROP TABLE Course;

DROP TABLE Level\_Math;

DROP TABLE Math\_Topics;

DROP TABLE Student;

DROP TABLE Teacher;

DROP TABLE Person\_Account;

INSERT INTO Person\_Account(id, login, password, firstName, lastName, birthDate, email) VALUES ( 201, 'Beyzuk', 'shc637gq' , 'Beyzuk', 'Sonmez', CONVERT(DATETIME,'2003-07-01'), 'beyzu7.gmail.com' );

INSERT INTO Person\_Account(id, login, password, firstName, lastName, birthDate, email) VALUES ( 202, 'Arzuk', 'c63gq' , 'Arzu', 'Kilic', CONVERT(DATETIME,'2002-08-01'), 'arzu123.gmail.com' );

INSERT INTO Person\_Account(id, login, password, firstName, lastName, birthDate, email) VALUES ( 203, 'Aduk', 'ac637gq' , 'Adam', 'Levis',CONVERT(DATETIME,'1980-01-02'), 'adam677.gmail.com' );

INSERT INTO Student(id, Person\_Account\_id) VALUES ( 25729, 201);

INSERT INTO Student(id, Person\_Account\_id) VALUES (25701, 202);

INSERT INTO Student(id, Person\_Account\_id) VALUES (20431, 203);

INSERT INTO Teacher(id, Person\_Account\_id) VALUES ( 3000, 201);

INSERT INTO Teacher(id, Person\_Account\_id) VALUES ( 3001, 202);

INSERT INTO Teacher(id, Person\_Account\_id) VALUES ( 3002, 203);

INSERT INTO Math\_Topics(id, name, Teacher\_id) VALUES ( 133, 'Limit', 3000);

INSERT INTO Math\_Topics(id, name, Teacher\_id) VALUES ( 144, 'Integral', 3001);

INSERT INTO Math\_Topics(id, name, Teacher\_id) VALUES ( 155, 'Logic', 3002);

INSERT INTO Level\_Math(id, name, levels) VALUES ( 123, 'Beginner', 'A');

INSERT INTO Level\_Math(id, name, levels) VALUES ( 124, 'Intermediate', 'B');

INSERT INTO Level\_Math(id, name, levels) VALUES ( 125, 'Advanced', 'C');

INSERT INTO Course(id, mathLessons, description, Math\_Topics\_id, Level\_Math\_id) VALUES ( 765, 30, 'Algebratci equations', 133, 123);

INSERT INTO Course(id, mathLessons, description, Math\_Topics\_id, Level\_Math\_id) VALUES ( 800, 12, 'Calculus 1', 144, 124);

INSERT INTO Course(id, mathLessons, description, Math\_Topics\_id, Level\_Math\_id) VALUES ( 986, 6, 'Discrete Math and logic', 155, 125);

INSERT INTO Class(id, name, startDate,Teacher\_id ,Course\_id) VALUES ( 1100, 'Algebra', CONVERT(DATETIME,'2021-09-01'), 3000, 765);

INSERT INTO Class(id, name, startDate,Teacher\_id ,Course\_id) VALUES ( 1200, 'Calculus', CONVERT(DATETIME,'2022-03-05'), 3001, 800);

INSERT INTO Class(id, name, startDate,Teacher\_id ,Course\_id) VALUES ( 2400, 'Discrete Math', CONVERT(DATETIME,'2022-04-02'), 3002, 986);

INSERT INTO Class\_Student(Student\_id, Class\_id) VALUES ( 25729, 1100);

INSERT INTO Class\_Student(Student\_id, Class\_id) VALUES ( 25701, 1200);

INSERT INTO Class\_Student(Student\_id, Class\_id) VALUES ( 20431, 2400);

Trigger 1

CREATE TRIGGER LimitationsTrig ON Course FOR UPDATE, DELETE AS BEGIN

IF EXISTS(SELECT 1 FROM inserted ins INNER JOIN deleted del ON ins.id = del.id WHERE ins.mathLessons < del.mathLessons) BEGIN

THROW 51003, 'Cannot reduce the number of classes', 1;

ROLLBACK;

END;

IF EXISTS(SELECT 1 FROM deleted del WHERE NOT EXISTS(SELECT 1 FROM inserted ins WHERE del.id=ins.id)) BEGIN

THROW 51004, 'Cannot remove classes', 1;

ROLLBACK;

END;

END;

UPDATE Course SET mathLessons = mathLessons - 1;

DELETE FROM Class\_Student where Student\_id=25729;

DELETE FROM CLASS where Course\_id=765;

DELETE FROM Course where id = 765;

Trigger 2

CREATE TRIGGER DontDeleteTeachers ON Teacher INSTEAD OF DELETE AS THROW 51001, 'Teachers cannot be deleted', 1;

DROP TRIGGER DontDeleteTeachers;

DELETE FROM TEACHER WHERE id =3000;

Procedure 1

CREATE PROCEDURE DisplayNumStudent AS BEGIN

SET NOCOUNT ON;

DECLARE @numStudents INTEGER;

SELECT @numStudents = COUNT(1) FROM Student;

PRINT CONCAT('There are ', @numStudents, ' employees');

END;

drop procedure DisplayNumStudent;

Execute DisplayNumStudent;

Procedure 2

CREATE PROCEDURE ModifyNumOfMathLessons AS BEGIN

DECLARE cur CURSOR FOR SELECT mathLessons, id FROM Course;

DECLARE @numLesson INTEGER, @courseId INTEGER;

OPEN cur;

FETCH NEXT FROM cur INTO @numLesson, @courseId;

WHILE @@FETCH\_STATUS = 0 BEGIN

DECLARE @newNumLesson INTEGER;

SET @newNumLesson = @numLesson;

IF @numLesson < 15 BEGIN

SET @newNumLesson = @numLesson\*2;

END;

IF @numLesson <> @newNumLesson BEGIN

PRINT(CONCAT('Changing numOfLesson from ', @numLesson, ' to ', @newNumLesson));

UPDATE Course SET mathLessons = @newNumLesson WHERE id = @courseId;

END;

FETCH NEXT FROM cur INTO @numLesson, @courseId;

END;

CLOSE cur;

DEALLOCATE cur;

END;

drop procedure ModifyNumOfMathLessons;

execute ModifyNumOfMathLessons;