

```
CREATE DATABASE Seminar6
```

```
GO
```

```
USE Seminar6
```

```
GO
```

```
--a)
```

```
CREATE TABLE TrainTypes(  
typeId INT PRIMARY KEY,  
typeName VARCHAR(50)  
);
```

```
INSERT INTO TrainTypes VALUES
```

```
(1, 'abur'),
```

```
(2, 'electric');
```

```
CREATE TABLE Trains(  
trainId int PRIMARY KEY,  
name VARCHAR(50),  
typeId INT FOREIGN KEY REFERENCES TrainTypes(typeId)  
);
```

```
INSERT INTO Trains VALUES
```

```
(1, 'train1', 1),
```

```
(2, 'train2', 2),
```

```
(3, 'train3', 1),
```

```
(4, 'train4', 2);
```

```
CREATE TABLE Stations(  
stationId INT PRIMARY KEY,  
stationName VARCHAR(50) UNIQUE  
);
```

```
INSERT INTO Stations VALUES  
(1, 'Cluj'),  
(2, 'Mures'),  
(3, 'Bucuresti'),  
(4, 'Iasi');
```

```
CREATE TABLE Routes(  
routeId INT PRIMARY KEY,  
routeName VARCHAR(50) UNIQUE,  
trainId INT FOREIGN KEY REFERENCES Trains(trainId)  
);
```

```
INSERT INTO Routes VALUES  
(3, 'Cluj-Iasi-Bucuresti',3)  
(1, 'Cluj-Iasi', 1),  
(2,'Cluj-Bucuresti', 2);
```

```
CREATE TABLE StationRoutes(  
routeId INT FOREIGN KEY REFERENCES Routes(routeId),  
stationId INT FOREIGN KEY REFERENCES Stations(stationId),  
arrival TIME,  
departure TIME,  
CONSTRAINT pk_stationRoutes PRIMARY KEY (routeId, stationId)
```

```
);
```

```
--b)
```

```
--DROP PROCEDURE add_station_to_route
```

```
GO
```

```
CREATE PROCEDURE add_station_to_route(
```

```
@routeName VARCHAR(50),
```

```
@stationName VARCHAR(50),
```

```
@arrival TIME,
```

```
@departure TIME)
```

```
AS
```

```
BEGIN
```

```
DECLARE @nr INT, @rId INT, @sId INT;
```

```
SELECT @rId = routeId FROM Routes WHERE routeName = @routeName
```

```
SELECT @sId = stationId FROM Stations WHERE stationName = @stationName
```

```
SELECT @nr = COUNT(*) FROM StationRoutes WHERE routeId = @rId AND stationId = @sId
```

```
IF @nr = 0
```

```
BEGIN
```

```
INSERT INTO StationRoutes VALUES (@rId, @sId, @arrival, @departure)
```

```
END
```

```
ELSE
```

```
BEGIN
```

```
UPDATE StationRoutes
```

```
SET arrival = @arrival, departure = @departure
```

```
WHERE @rId = routeId AND @sId = stationId
```

END

END

GO

DELETE FROM StationRoutes

add_station_to_route 'Cluj-Iasi', 'Cluj', '6:00:00', '7:00:00';

add_station_to_route 'Cluj-Iasi', 'Mures', '8:00:00', '8:10:00';

add_station_to_route 'Cluj-Iasi', 'Iasi', '10:00:00', '10:10:00';

add_station_to_route 'Cluj-Bucuresti', 'Cluj', '11:00:00', '11:30:00';

add_station_to_route 'Cluj-Bucuresti', 'Mures', '12:00:00', '12:10:00';

add_station_to_route 'Cluj-Bucuresti', 'Bucuresti', '16:00:00', '16:20:00';

add_station_to_route 'Cluj-Iasi-Bucuresti', 'Cluj', '11:00:00', '11:30:00';

add_station_to_route 'Cluj-Iasi-Bucuresti', 'Mures', '12:00:00', '12:10:00';

add_station_to_route 'Cluj-Iasi-Bucuresti', 'Iasi', '16:00:00', '16:20:00';

add_station_to_route 'Cluj-Iasi-Bucuresti', 'Bucuresti', '20:00:00', '20:30:00';

--c)

SELECT * FROM StationRoutes

ORDER BY routeId, Arrival

CREATE VIEW RoutesNames AS

SELECT routeName

FROM Routes R

WHERE (SELECT COUNT (*) FROM Stations) =

(SELECT COUNT(*) FROM StationRoutes RS WHERE R.routeId = RS.routeId)

```
SELECT * FROM RoutesNames
```

```
--d)
```

```
GO
```

```
CREATE FUNCTION stationsWithRRoutes (@R INT)
```

```
RETURNS TABLE
```

```
AS
```

```
RETURN
```

```
SELECT stationName
```

```
FROM StationRoutes SR INNER JOIN Stations S ON SR.stationId = S.stationId
```

```
GROUP BY S.stationName
```

```
HAVING COUNT(*) > @R
```

```
GO
```

```
SELECT * FROM stationsWithRRoutes(3)
```

