

```
1 CREATE DATABASE Seminar6
2 GO
3 USE Seminar6
4 GO
5
6 --a)
7
8 CREATE TABLE TrainTypes(
9     typeId INT PRIMARY KEY,
10    typeName VARCHAR(50)
11 );
12
13 INSERT INTO TrainTypes VALUES
14 (1, 'abur'),
15 (2, 'electric');
16
17 CREATE TABLE Trains(
18     trainId int PRIMARY KEY,
19     name VARCHAR(50),
20     typeId INT FOREIGN KEY REFERENCES TrainTypes(typeId)
21 );
22
23 INSERT INTO Trains VALUES
24 (1, 'train1', 1),
25 (2, 'train2', 2),
26 (3, 'train3', 1),
27 (4, 'train4', 2);
28
29
30 CREATE TABLE Stations(
31     stationId INT PRIMARY KEY,
32     stationName VARCHAR(50) UNIQUE
33 );
34
35 INSERT INTO Stations VALUES
36 (1, 'Cluj'),
37 (2, 'Mures'),
38 (3, 'Bucuresti'),
39 (4, 'Iasi');
40
41 CREATE TABLE Routes(
42     routeId INT PRIMARY KEY,
43     routeName VARCHAR(50) UNIQUE,
44     trainId INT FOREIGN KEY REFERENCES Trains(trainId)
45 );
46
47 INSERT INTO Routes VALUES
48 (3, 'Cluj-Iasi-Bucuresti', 3)
49 (1, 'Cluj-Iasi', 1),
50 (2, 'Cluj-Bucuresti', 2);
51
52
```

```
53 CREATE TABLE StationRoutes(  
54     routeId INT FOREIGN KEY REFERENCES Routes(routeId),  
55     stationId INT FOREIGN KEY REFERENCES Stations(stationId),  
56     arrival TIME,  
57     departure TIME,  
58     CONSTRAINT pk_stationRoutes PRIMARY KEY (routeId, stationId)  
59 );  
60  
61  
62 --b)  
63 --DROP PROCEDURE add_station_to_route  
64 GO  
65 CREATE PROCEDURE add_station_to_route(  
66     @routeName VARCHAR(50),  
67     @stationName VARCHAR(50),  
68     @arrival TIME,  
69     @departure TIME)  
70 AS  
71 BEGIN  
72     DECLARE @nr INT, @rId INT, @sId INT;  
73  
74     SELECT @rId = routeId FROM Routes WHERE routeName = @routeName  
75     SELECT @sId = stationId FROM Stations WHERE stationName = @stationName  
76  
77     SELECT @nr = COUNT(*) FROM StationRoutes WHERE routeId = @rId AND stationId =  
78         @sId  
79  
80     IF @nr = 0  
81     BEGIN  
82         INSERT INTO StationRoutes VALUES (@rId, @sId, @arrival, @departure)  
83     END  
84     ELSE  
85     BEGIN  
86         UPDATE StationRoutes  
87         SET arrival = @arrival, departure = @departure  
88         WHERE @rId = routeId AND @sId = stationId  
89     END  
90 END  
91 GO  
92 DELETE FROM StationRoutes  
93  
94 add_station_to_route 'Cluj-Iasi', 'Cluj', '6:00:00', '7:00:00';  
95 add_station_to_route 'Cluj-Iasi', 'Mures', '8:00:00', '8:10:00';  
96 add_station_to_route 'Cluj-Iasi', 'Iasi', '10:00:00', '10:10:00';  
97  
98 add_station_to_route 'Cluj-Bucuresti', 'Cluj', '11:00:00', '11:30:00';  
99 add_station_to_route 'Cluj-Bucuresti', 'Mures', '12:00:00', '12:10:00';  
100 add_station_to_route 'Cluj-Bucuresti', 'Bucuresti', '16:00:00', '16:20:00';  
101  
102 add_station_to_route 'Cluj-Iasi-Bucuresti', 'Cluj', '11:00:00', '11:30:00';  
103 add_station_to_route 'Cluj-Iasi-Bucuresti', 'Mures', '12:00:00', '12:10:00';  
104 add_station_to_route 'Cluj-Iasi-Bucuresti', 'Iasi', '16:00:00', '16:20:00';
```

```
104 add_station_to_route 'Cluj-Iasi-Bucuresti', 'Bucuresti', '20:00:00', '20:30:00';
105
106 --c)
107
108 SELECT * FROM StationRoutes
109 ORDER BY routeId, Arrival
110
111 CREATE VIEW RoutesNames AS
112     SELECT routeName
113     FROM Routes R
114     WHERE (SELECT COUNT(*) FROM Stations) =
115           (SELECT COUNT(*) FROM StationRoutes RS WHERE R.routeId = RS.routeId)
116
117 SELECT * FROM RoutesNames
118
119
120 --d)
121 GO
122 CREATE FUNCTION stationsWithRRoutes (@R INT)
123 RETURNS TABLE
124 AS
125 RETURN
126     SELECT stationName
127     FROM StationRoutes SR INNER JOIN Stations S ON SR.stationId = S.stationId
128     GROUP BY S.stationName
129     HAVING COUNT(*) > @R
130 GO
131
132 SELECT * FROM stationsWithRRoutes(3)
```