

# Introduction to Databases

## Homework no. 2: SQL

1. The following relations are given (primary keys are underlined):

TOUR-GUIDE (GuideCode, Name, Surname, Nationality)  
TYPE-OF-TOUR (TourTypeCode, Monument, Duration, City)  
GROUP (GroupCode, NumberOfParticipants, Language)  
GUIDED-TOUR-CARRIED-OUT (GroupCode, Date, StartTime, TourTypeCode, GuideCode)

Write the following query in SQL

- (a) For each tour guide who has *never* guided a type of tour for French-speaking groups, show name and surname and, for each date, the total number of type of tours guided and their total duration.
- (b) Among the monuments for which at least 10 guided tours have been carried out, show the monuments visited by the greatest number of participants.

2. The following relations are given (primary keys are underlined):

STUDENT(StudentID, Name, Surname, DegreeCourse)  
LABORATORY(LabID, LabName, Capacity)  
DEVICE(DeviceID, DeviceName, Type, LabID)  
EXPERIMENT(DeviceID, StudentID, Date, Description, Category)

Write the following query in SQL

- (a) For each device that has been used in at least 10 experiments, show the name of the device, the name of the laboratory where the device is located and, for each student who has used the device, the number of experiments performed by the student with that device.
- (b) Considering the laboratories where only students enrolled in the 'Computer Engineering' degree course have performed experiments, for each laboratory, show the laboratory ID, the name of the laboratory and the date of each experiment with category 'Electronics' carried out during the month of June 2019.

3. The following relations are given (primary keys are underlined):

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TEENAGER(SSN, Name, Surname, BirthDate, CityOfResidence, Sex)
ACTIVITY(ActivityCode, AName, Description, Category)
SUMMER-CAMP(CampCode, CampName, City)
SUBSCRIPTION-TO-ACTIVITY-IN-SUMMER-CAMP(SSN, ActivityCode, CampCode,
SubscriptionDate)
```

Write the following query in SQL

- (a) For each summer camp to which at least 15 teenagers subscribed to carry out activities related to at least 3 different categories, show the name of the summer camp, the city where the camp takes place, and for each activity carried out in the camp the total number of subscribed teenagers.
- (b) For each teenager, born before 2005, who subscribed to activities organized by at least 5 different summer camps, show name, surname, birth date of the teenager and the name of each summer camp to which the teenager subscribed to *all* the different activities organized by the camp.