4. Latin dances

The students of Latin Dance School study Latin dances, these are as follows: cha-cha, salsa, rumba, samba, jive, tango, bachata.

The students had a demonstration at the end of the school year. During the demonstration each dance was shown only once, but the dances were danced by several couples simultaneously. The dance programme of the end-of-year demonstration is given in file *danceprogramme.txt*. The file contains the dances in the actual order of the demonstrations. For each dance three lines belong to one couple, these contain the dance, the first name of the girl and the first name of the boy in the couple, respectively:

```
cha-cha
Katalin
Bertalan
cha-cha
Adrienn
Lajos
salsa
Katalin
Bertalan
```

According to the above example cha-cha was danced by two couples, Katalin and Bertalan, and Adrienn and Lajos, and the dance after cha-cha was salsa. A person can dance the different dances with different partners, but you can assume that no two dancers have the same name.

The file contains at most 140 dances and dancing couples, and we know that at most 20 boys and at most 20 girls participated in the demonstration. Create a program that uses the data in file *danceprogramme.txt* to answer the following questions. Save the source code of the program as *danceschool*. (When writing the program, you do not have to check the accuracy and the validity of the data given by the user, you can assume that the available data are in accordance with the description.)

Before displaying the exercise parts that require writing on the screen display the exercise number on the screen (for example: `Exercise 3:`). If you request data from the user, display the data expected. Displaying without accents is acceptable.

1. Read the data from file *danceprogramme.txt* and solve the following exercises using them.

2. Display the name of the first and the last dance on the screen.

3. How many couples danced samba? Display the answer on the screen.

4. Display the dances that Vilma participated in on the screen.

5. Request the name of a dance from the user and then display the name of Vilma's couple in the given dance on the screen. For example, if the entered dance is samba and Vilma's couple was Bertalan, then display text "`In dance samba Vilma's couple was Bertalan.`" on the screen. If Vilma did not participate in the given dance, then display text "`Vilma did not dance samba.`" on the screen.

6. Create a list of the boys and girls who participated in the demonstration. Save the list in text file *participants.txt* in the following format: the names should be separated by commas, but there should not be a comma after the last name. For example:

```
Girls: Lujza, Katalin, Andrea, Emma
Boys: Ferenc, Ambrus, Andor, Kelemen, Bertalan
```

7. Display the name of the boy who danced the most dances among the boys and the name of the girl who danced the most dances among the girls on the screen. If several boys or several girls correspond to these criteria, then display the name of each boy and girl.

45 marks

Sources:

1. Széchenyi Bath

http://www.széchenyifürdő.hu/

3. Olympics measured in metres

http://www.olympic.org/olympic-results
http://www.sports-reference.com/olympics/athletes/
http://en.wikipedia.org/wiki/List_of_Olympic_medalists_in_athletics_%28men%29
http://en.wikipedia.org/wiki/List_of_Olympic_medalists_in_athletics_%28women%29
The use of names is based on page www.olympic.org, the years of birth and death are mostly from the English wikipedia pages related to the competitors.