**1st computer-based test**

Create an object-oriented C++ solution for the given problem according to the following rules:

* loops are based on the learnt algorithmic patterns (name the theorem in comment),
* use a class to read the text file,
* you can open the file only once and you cannot store the contents of more than one line in a variable,
* make a user-friendly program,
* Create a working algorithm for the correct input files and handle the empty file and non-existing file cases.

***Accepted level*** (grade 3): Data of blackholes are stored in a text file. Each line of the file starts with the ID of a blackhole (string without whitespace), which is followed by measurements. A measurement consists of a date (YYYY.MM.DD format, string), the weight (in billion tonns, int) and the distance from the Earth (in thousand light year, int). In one line, data is separated by tabs or whitespace. We can assume that data of one blackhole can be found in only one line of the file. The dates in one line are in ascending order. The weight of one blackhole increases by time.

**Sample input file:**

CX896 NASA 1984.03.12 6000 3000 2003.11.23 8500 2500

SH231 SOYUZ 1986.10.17 6000 3000 2003.04.17 8500 2500 2008.11.03 9800 2800

***Give a blackhole (ID) the last weight of which is the highest from those which were measured anytime to be closer than 2700 thousand light years from the Earth.***

***Excellent level*** (grade 5): Consider the previous input file with the following modifications: Several stations can make measurements of the same blackhole; thus, the lines of the file consist of the followings: blackhole ID, station ID, measurements. Like this, measurements of one blackhole can be present in more than one line, but measurements of one station of one blackhole can be found in only one line. The file is ordered by blackhole ID.

**Sample input file:**

CX896 SOYUZ 1978.09.22 6000 3000 1999.04.17 8500 2500 2003.11.03 9800 2800

CX896 NASA 1984.03.12 6000 3000 2003.11.23 8500 2500

SH231 SOYUZ 1986.10.17 6000 3000 2003.04.17 8500 2500 2008.11.03 9800 2800

***List the average weight of those blackholes that were measured to be closer than 2700 thousand light years by every station (that has made measurements of that blackhole) at least once. Average weight is calculated from the last measured weights made by the stations.***

You do not have to solve the Accepted level to submit the Excellent level, but it is advised to start with the Accepted level. If you think that you are done, please show your work to one of the teachers.

After showing your code and being accepted, upload it in neptun.zip: on Windows to the [\\nas1.inf.elte.hu\ZH1\Programozas](../../../..//nas1.inf.elte.hu/ZH1/Programozas), on Linux to the **smb://nas1.inf.elte.hu/ZH1/Programozas** library. Hand this paper to one of the teachers.