

## University Secretary's Office

Analyze, design and implement in Java a software system which manages the information about the students from a university department.

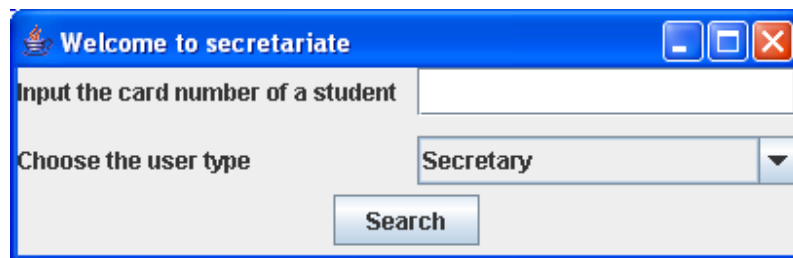
Any user (secretary, professor, student) which has access to the system can ask it to show information about students. The information will be differentiated depending on the rights of who uses the system. We are assuming that the secretary may see all the information about a student, naming: last name, first name of his/her father, first name, the specialization which he/she follows and the general average from the previous year. A professor may see last and first names of the student and the specialization. A student may see first and last name and the general average from the previous year.

The information about all the students are memorized in the file named "students.txt" with the following format:

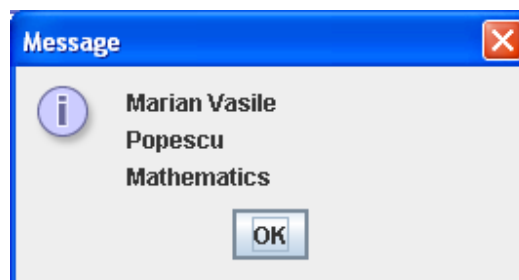
```
firstName_lastName_ firstNameOfHis/HerFather_Specialization_GeneralAverage
```

The file content will be read and the system will create a dynamic collection with objects by type Student. This collection will be used whenever the information about a student is requested.

The system provides the following main graphical interface:



Every user will insert a card number of the student on which she/he is interested and choose a type: secretary, professor or student. After that, she/he clicks on the button "Search". In this moment, the system will search in the collection of Student objects after the card number. If the system finds the object, it will display information in a frame like this:



The user clicks the OK button and may insert another card number in the main GUI of the system.

If a user inputs an invalid card number, the system will display an error message.

Hint. Use the following design patterns: Controller, Delegation, Interface, Protection Proxy, ObjectPool, Iterator, Singleton