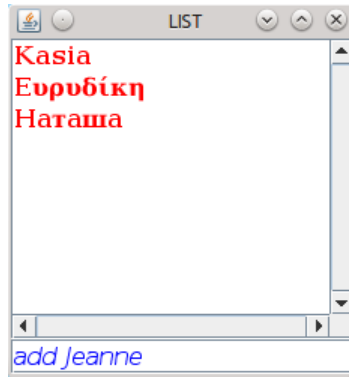


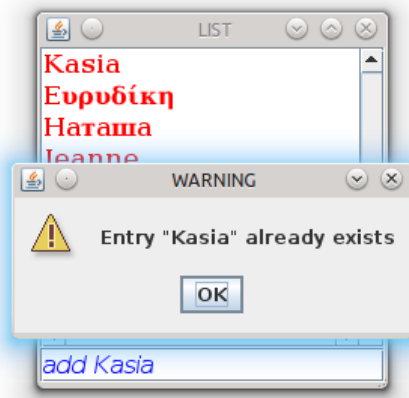
**Problem 1**

Write a program displaying a list (object of class **JList** ‘embedded’ in a **JScrollPane**) and, below, a text field (**TextField**).



The user can type in the text field:

1. **add word**: the word appears in the list, if it was not there; if it was, a warning is displayed and the word is *not* added again;



2. **del word**: the word is removed from the list if it was there, if it was not, a warning is displayed;
3. **quit**: closes the application.

Use your own class extending **AbstractListModel** and implementing abstract methods **getElementAt** and **getSize**; provide methods for adding and removing elements (not forgetting about calling **fireIntervalAdded** and **fireIntervalRemoved**).

**Problem 2**

Write a program which reads data from a text file (in UTF-8 encoding) – for example

Joanna	Kowalska	1983-9-12	255,255,153	170	60
Jan	Kowalski	1980-2-7	255,0,153	182	99
Michał	Nowak	1988-8-13	0,0,153	177	73
Zofia	Michalska	1971-6-12	255,0,51	162	53
Łukasz	Gwóźdź	1975-3-23	0,0,255	178	47
Tomasz	Wójcik	1965-1-7	102,0,0	180	50
Beata	Szczęśniak	2000-8-28	51,102,0	160	70
Anna	Pękala	1979-2-17	0,204,255	164	54
Robert	Tarski	1971-11-2	255,102,0	176	70

which contains, white-space separated, fields with

- first name;
- last name;
- date of birth (three numbers – year, month, day – separated with a dash);
- favorite color (three numbers – red, green, blue – comma separated);
- height in cm;
- weight in kg.

The program displays this data in the form of a table, for example like this:

Imie	Nazwisko	Dzień ur.	Ulub. kolor	Wzrost[cm]	Waga[kg]	BMI
Joanna	Kowalska	mercredi		170	60	21
Jan	Kowalski	vendredi		182	99	30
Michał	Nowak	mardi		177	73	23
Zofia	Michalska	lundi		162	53	20
Łukasz	Gwóźdź	mercredi		178	47	15
Tomasz	Wójcik	dimanche		180	50	15
Beata	Szczęśniak	jeudi		160	70	27
Anna	Pękala	samedi		164	54	20
Robert	Tarski	jeudi		176	70	23

In the column with the birth date only the name of a week day should be displayed (for example in French). In the column with the favorite color, the background should be in this color. In the BMI column we show *bmi* – *body mass index* – i.e., weight in kg divided by height (in meters) squared; the background should be red for overweight persons (*bmi* above 25) and yellow for underweight persons (*bmi* below 18).

You should create a class representing a model for **JTable**, i.e., extending **AbstractTableModel** from `javax.swing.table` package and defining appropriate methods. In order to get proper rendering of data in columns, you will have to create cell renderers, that is objects of classes implementing **TableCellRenderer** interface from the same package.

The type of data in columns should be **String** (first and last name), **java.util.Date** for birth date, **java.awt.Color** for favorite color and **Integer** for height, weight and BMI.