Bills, bills, bills

Emily needs to manage her list of ever-growing bills. Each Bill has a *company name*, a *serial number,* a *sum* and an *isPaid* field that illustrates whether the bill was paid. Create a file that contains at least 5 bills. See below a few examples:

Digi Sport; 0A33455X; 75.00; false
E-On; EED36677; 122.00; true
Orange; X990TTRR; 46.00; true
Vodafone; 1234RR55; 23.00; false
Tcomm; TRE3EERR; 10.00; true

Write a bill manager application with a **graphical user interface (use the Qt framework)** which allows to:

1. Visualize all the bills in a list (QListWidget or QListView). The list will display the company name and the sum. When the application starts, the list is populated automatically **(2.5p)** and the elements are sorted by company name **(1p)**.
2. Show all unpaid bills with a red background in the list **(1p)**. Allow the user to filter the list by paid/unpaid bills (e.g. use a QCheckBox or a QLineEdit) **(1.5p)**.
3. Calculate the total of unpaid bills, for a given company. Input the name of the company in a QLineEdit and when the button "Calculate total" is clicked, show the total sum of the unpaid bills (either in a QLineEdit or using a QLabel) **(2p)**. Show an error message if there are no such companies **(1p)**.

Obs.

- **If the data are not read from the file, 0.5 points are subtracted from the indicated score for each functionality.**
- **The application must use layered architecture in order for functionalities to be graded.**
- **No score is awarded for a console-based user interface.**

You may use Qt Designer, as well as the following sites for documentation:
- http://doc.qt.io/qt-6/
- http://en.cppreference.com/w/
- http://www.cplusplus.com/

Time: 60 minutes.
1p - of