COVID CHARTS

Kalinina Darya 202-1
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Rudakov K.A.

PROBLEM STATEMENT

The project was about the development of C++ program using Qt libraries, which allows the user to interact with a database of a certain structure through graphical user interface. The work was to be done through the Master-View(Controller) paradigm, and the interface itself needed to be aligned with the Master-Detail pattern.

INDIVIDUAL PROBLEM SPECIFICATION

COVID-19 statistic.

Brief description:

This project will be very helpful to track the number of diseases and death in a particular country. Thus, it will be possible to understand how different countries coped with the coronavirus.

Detailed explanation:

The data set (I attach a link in case the hyperlink does not work: https://corgis-edu.github.io/corgis/csv/covid/)contains daily reports of Covid-19 cases and deaths in countries worldwide. The data also shows the country's population and the number of cases per 100,000 people on a rolling 14 day average. Below there are description of columns:

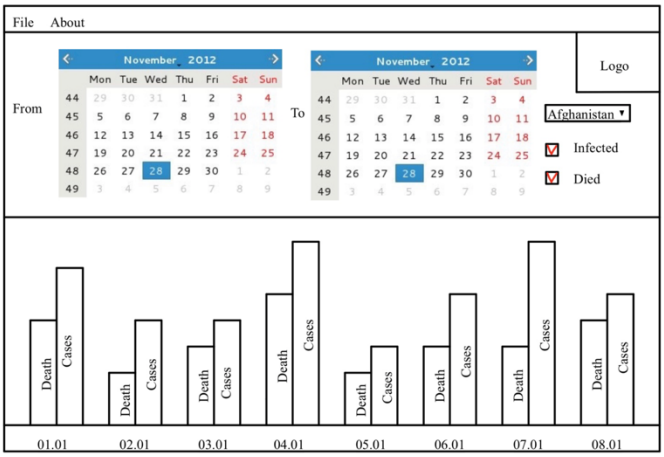
- Date.Day (The day of the month for this report)
- Date.Month (The month of the year for this report)
- Date.Year (The year of this report)
- Date.Cases (Number of new cases reported)
- Data.Deaths (Number of new deaths reported)
- Location.Country (Name of country for this report (e.g., "United_States_of_America"))
- Location.Code (Three letter country code (e.g., :USA"))
- Date.Population (Population of the country in 2019)
- Location.Continent (Continent of country (e.g., "Asia", "Europe", "America"))
- Data.Rate (Cumulative number of cases reported for 14 days per 100000 people)

Your Task:

Will be to create a program where user can choose the period of time he/she wants. Then he/she should be able to select a specific country from the list. At the discretion of the user, he/she should be able to choose what exactly user wants to know: the number of infected or the number of deaths, or maybe both columns with this information. Also do not forget about logo, it must look similar to the coronavirus bacterium.

Interface:

Main window:



In the left-hand Calendar it should be possible to choose the beginning date (the point where bar chart would start). In the right-hand Calendar should be possible to choose the end date (the point where our program would stop working). In the top right corner there is a place for logo where you must try to make bacterium of coronavirus (it should somehow remind it).

In the top right window user would have to choose a country form the list. Under the window "country" user must select which column he/she wants to see: the column of infected or the column of death. Because of this the number of columns in the result bar chart can change from 1 to 2.

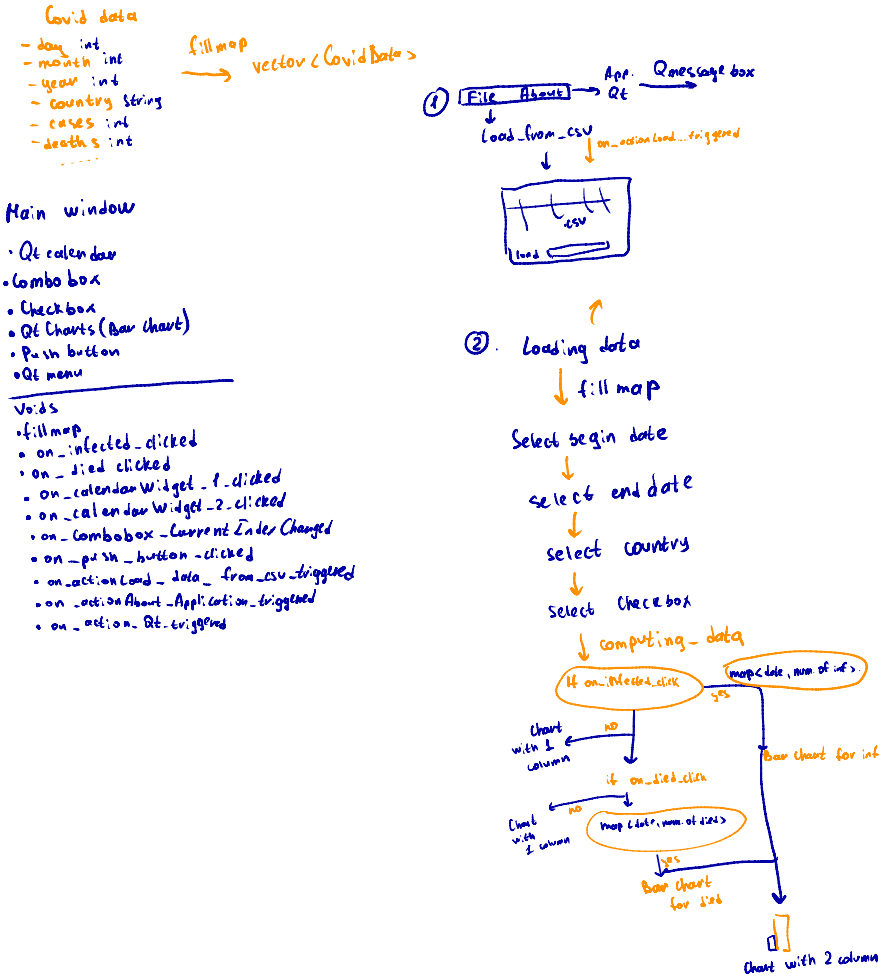
Requirement for "File":

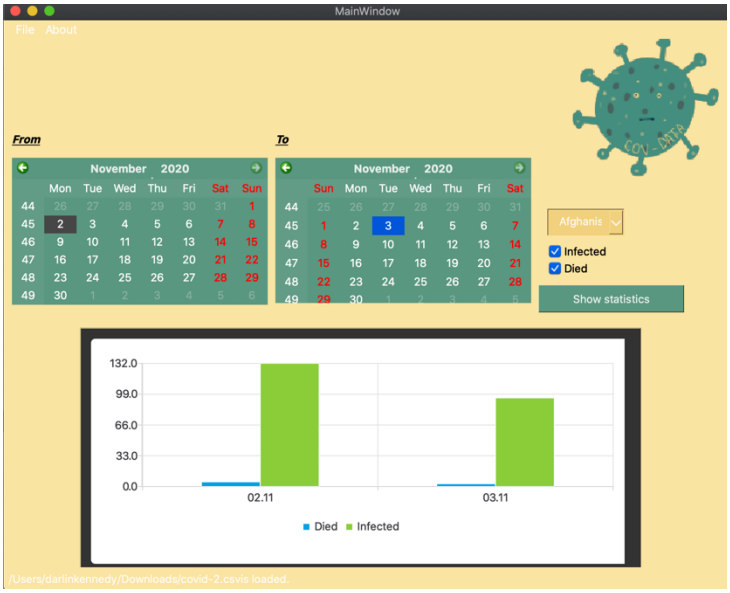
File -> Load data from .csv

IMPLEMENTATION DETAILS

I use MainWindow Qt GUI class and Widgets: Calendars, Combobox, Checkboxes, Button, Labels and Menubar from QT. Data from .cvs file I put into std::vector of the type CovidData, which include date, country, cases, deaths and other unuseless for us data. I get information from slots, that is activated by a click. I use QtCharts and BarChart to represent the graphs. Also the user can upload the dataset using menu bar, where also can get information "about".

GitHub: https://github.com/DaryaKorolevskaya/dsba-itop2021-hw1





First of all, user select the file using File in the menubar. In the status bar will be the notification about that. After that choose the beginning and the end date, the country and what kind of information

she/he want to see: number of infected or died. After user click on the button show results. She/he also can select another set of parametrs.

RESULTS AND DISCUSSION AND CONCLUSION

As a result, I got the application, that satisfies all conditions and also has a beautiful and funny logo, that similar to the covid bacterium. I liked what it turned out, and I even got some kind of pleasure. However, it was quite difficult to find the information you need about the implementation of various methods in QT. I think the design and code style could be improved.