DSA Homework 01

The aim of this homework is to strengthen the student's knowledge of the organization of the C ++ project in multiple files, creating a class and the correct definition and implementation of the constructor. In order to give the homework a touch of interest, we chose a bright and dynamic SFML environment instead of a dry console application. The SFML (Simple and Fast Multimedia Library) library is intended for working with multimedia and creating games (https://www.sfml-dev.org/). SFML program code can be compiled and run on Windows, Linux, Mac OS X, and support for Android and iOS is planned.

The homework consists of three parts, and the average solving time is up to 2 hours.

Part 1: preparing the environment

You should have a Git client installed at this time as explained in the GitHub User Guide (**SPA_Github_Quick_Start_en.pdf** info tutorial document) (if stuck with a private key, resolve the issue using https://help.github.com/en/articles/adding-a-new-ssh-key-to-your-github-account). Preparing the work environment consists of the following steps:

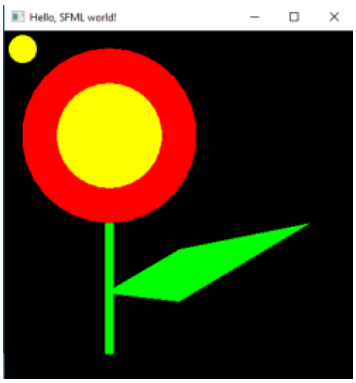
1. Open my project on GitHub https://github.com/gdambic/rvs19-spa-dz-01.
2. Click the Fork button in top right corner to make your copy of the project.
3. Click Code and copy the Git path **https://github.com/gdambic/rvs19-spa-dz-01.git**
5. Go to C:\dsa\ (or elsewhere) and right-click to select "Git Bash Here".
6. Execute `git clone https://github.com/gdambic/rvs19-spa-dz-01.git`
7. Open the project in Visual Studio by double-clicking on SpaDomacaZadaca01.sln.
8. Verify that the "Debug" and "x64" options are selected in the Visual Studio toolbar and specify Build.
9. Launching the app gives you a blank black screen and a console below it - you're ready to go. If compilation errors occur, you need to right-click on the solution and specify "Retarget solution" and select one of the offered options.

Part 2: adding flower in SFML appliction (learning objective: 1, max points: 1.5)

Your task in this section is as follows:

1. In Source.cpp, uncomment lines 7 and 19.
2. Create a new class Flower (Cvijet on Croatian) so that the user must send the window address (line 7) as a parameter when creating an object of that class.
3. Implement the Flower class by drawing a flower on the screen. Drawing in SFML can be done with basic geometric figures: https://www.sfml-dev.org/tutorials/2.5/graphics-shape.php

When creating, pay attention to everything that is important when adding a new data type (new files, private members, public members, constructors). An example of what a flower can look like:



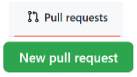
Part 3: adding animation in SFML application (learning objective: 1, max points: 0.5)

Your task in this part is to implement some (any) animation. The image above shows the animated size of the sun, which starts from 20 pixels, decreases to 15 pixels, and then increases again to 20 pixels, and so on. You create the animation in the draw method of the Flower class, with the necessary extensions of the Flower class with private members who keep the state (for example, you will need **sf :: Clock frameClock**): https://www.sfml-dev.org/tutorials/2.5/system-time.php.

Submitting

When you are done, submit the solution as follows:

1. According to the GitHub Instructions, create "git add", "git commit" and "git push" modified files.
2. On GitHub, go to the "Pull requests" tab.
3. Click on "New pull request".
4. Click on "Create pull request".
5. Enter "name-surname-dbele" as the name of the request and submit the request.



The points awarded will not depend on the visual appeal of your work; points are brought exclusively by the correct construction of the class and the organization of the object, even if you draw (and animate) only one point.

Bonus part

In addition to the previously defined conditions for receiving points in Infoeduka, three prizes for the best visual solution will be awarded: 1st prize is $3, 2nd prize is $2, and 3rd prize is $1. If more students share a place, the RANK principle will be used for the lower places (https://www.techonthenet.com/oracle/functions/rank.php).

1 dollar (picture taken from http://www.celebrity-cash.com/shop/index.php?route=product/product&product_id=340)

What are dollars for? Each dollar can be exchanged by the winner for 1 point on the midterm exam.