

Windows Programming Midterm Project

Good artists copy. Great artists steal. ---- Picasso

Project name: Plotting tool

Due: Friday, 20 November 2015

Mark: 50/100

Grouping: Individual assignment, no grouping is permitted.

In this project, you are going to write a plotting tool for Microsoft Windows. You can refer to the following online plotting tools.

<http://fooplot.com/>

<http://graphsketch.com/>

<http://graph-plotter.cours-de-math.eu/>

Requirements:

1. No MFC or other third party GUI libraries allowed, all source code must be using Win32 API directly, or use your own encapsulation.
2. It is recommended to use C++ to encapsulate your own data structure. However, standard C++ library elements, such as vector, list are also allowed.
3. No third party controls, such as MSGrid, Crystal Report are allowed.

Ranking:

Basic functionality [80%]

1. Plot display: X-axis, Y-axis, grid, tick marks and numbers,
2. Plotting of the simplest math equation. E.g., $f(x) = 2 \cdot x$, $f(x) = -5 \cdot x^2$
3. Plotting of the simplest function. E.g., $f(x) = \sin(x)$, $f(x) = \log(x)$
4. Display multiple lines with different colors.
5. Adjustable background color, line color, tick distance, grid spacing, etc.
6. Save plot as bitmap (can be opened by other image viewers).

Advanced functionality [20%]

1. Zoom in / Zoom out and page scrolling
2. Data source from file (in .csv format)

Extra functionality:

1. Save as other file formats (png, pdf, svg...)
2. Complicated math equation: $f(x) = x^3 + 3 \cdot x^2 / (5x+4) + \sin(x) / (2 \cdot x^2)$
3. Bar chart, pie chart...