Graph Plotter

Overview

The graph plotter can plot the graph for the follwing trigonometric functions

- Sine
- Cos
- SinC
- Tan
- Cot
- Cosec
- Tan

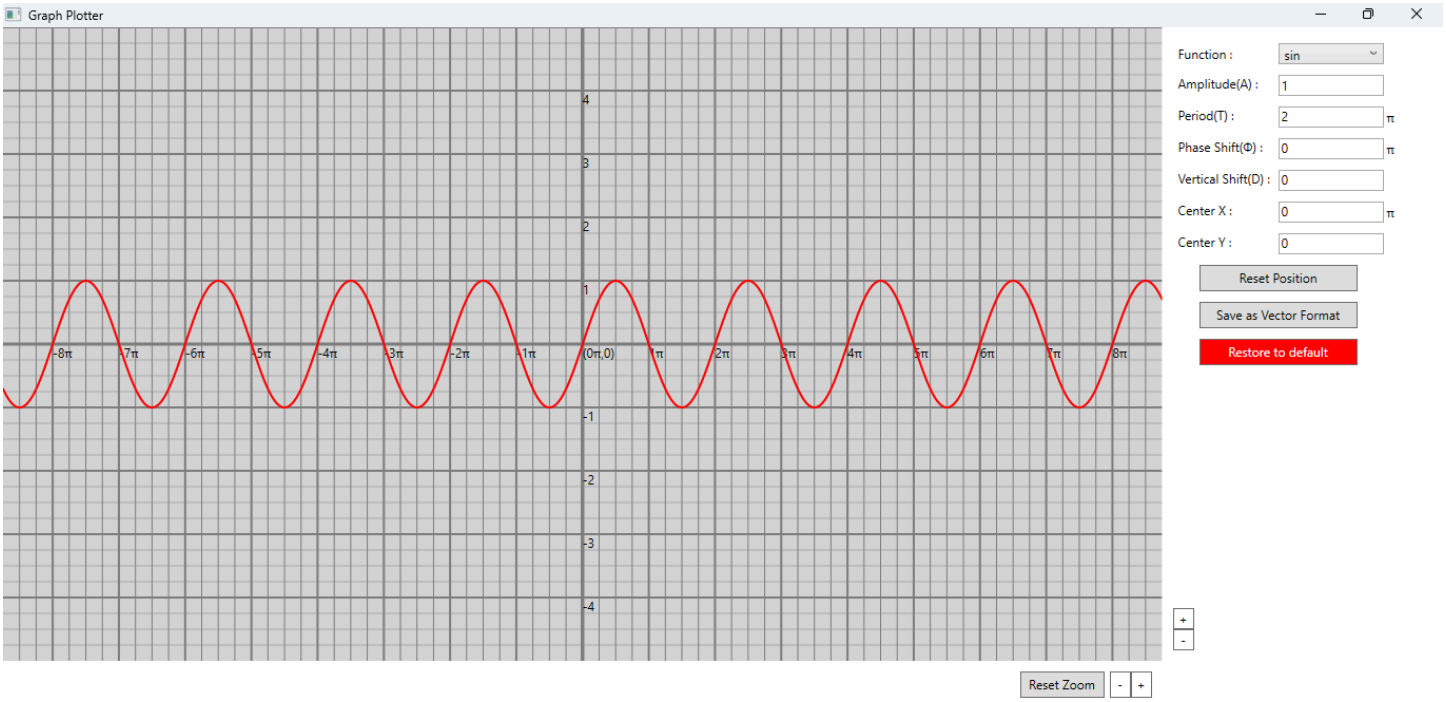
The user can also change the values of different parameters for a trigonomenric function.

Requirements

Easy to enter function parameters for defined functions to see the effects and changes in a graph.
User can see the effects of the parameters easily.
Windows Application to enter the parameters for trigonometric functions (sin and cos) and the Sinc function.
The functions should be visualized in 2D.
The range must be adaptable.
The Type of the function should selectable.
After opening the application, the last parameters should be visible.
The visualization should be storable in vector format

Usage

Instructions on how to use the tool.



As you can see in the above figure on the right hand side , there are the following controls

1. **Function dorpdown** - User can the select the trigonometric function which he/she wants to plot.
2. **Amplitude textbox** - User can enter value of amplitude from -99999,9999 upto 99999,9999.
3. **Period textbox** - User can enter value for time period in multiples pi. It is calculated in seconds. For eg. if user enter 2, then value is 2*pi seconds.
4. **Phase shift** - User can enter value for the phase shift calculated in multiples of pi. For eg. if user enters 3, then the phase shift value is 3*pi.
5. **Vertical Shift** - User can enter vertical shift in the graph he/she wishes for. If user enters 1, then graph gets shifted by 1 upward.
6. **Center x** - This is the x coordinate of the point at the center of the graph. It is calculated in multiples of pi. For eg. if user enters 2, then the value would be 2*pi.
7. **Center y** - This is the x coordinate of the point at the center of the graph. It is calculated in multiples of pi. For eg. if user enters 2, then the value would be 2*pi.
8. **Reset Position button** - it resets the value of center x and center y to 0,0.
9. **Save as Vector Format button** - It saves the graph in the svg format.
10. **Rese to default button** - It resets all the parameters to default as on tool load.
11. **Positive and Negative buttons** - User can zoom in and zoom out using these buttons.
12. **Reset Zoom button** - This button is used to reset the zoom values to 1 which are the default values.

Notes

They are few known issues

Issues	Solution
When there are 5 digits in the amplitude textbox, and user highlights with the mouse, and then tries to input a number , it does not work. User needs to press backspace to delete the number.	Regex needs to be corrected for that in the TextInputBehaviour Class.
When horizontal zoom increases and values become like (12345,1234pi . 12345,1234) they start to overlap and one cannot understand x coordinates then	The format of the coordinates needs to be changed , or the number needs to be reduced
Zooming on x axis cannot be done as much as y axis because the numbers are being rounded off till 4 digits after decimal so that they do not overlap.	The format of the coordinates needs to be changed , or the number needs to be reduced