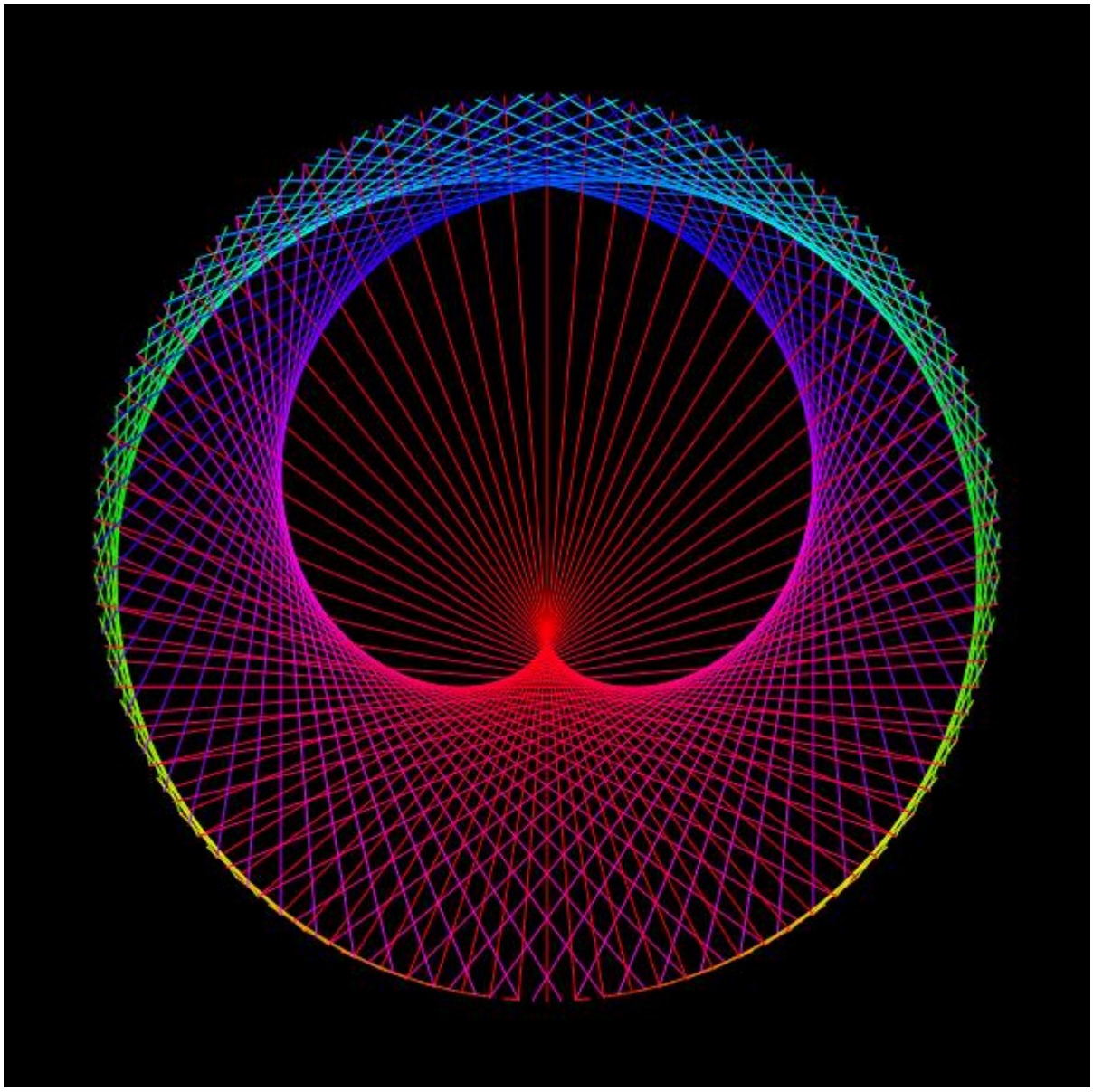
HEART OF MATH PROGRAMING WITH JAVA



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ACKNOWLEDGEMENT

First of all, I would like to thank my lecturer Mr. Nurlan Shaidullaev for helping me to acquire some basic knowledge of “Java Programming Language”. At the same time, he gave me the opportunity to learn something new related to our module like constructors, methods, arrays, JFrames etc.

Beside from my lecturer, I like to thank my other classmates for helping to understand the assignment related questions more clearly. They gave their best for completing this report on time. I thank them for their efforts.

INTRODUCTION

This program is based on *Mandelbrot and Heart of Math* using “Java Programming Language”. For that we used **JavaFX** in this development so that it will become easy with graphical interface another word with **Scene Builder** program.

Besides, I also studied Adobe Colors for my functions.

EXPLANATIONS

In this documentation we have given explanations of how to interact successfully with this program “Heart of Math”. We have explained here step by step so that it will surely help users to become more user friendly with it. Below are our explanations:

First Things First: Before execute this program, users need to do some works so that it will run properly into their system. First, they need to make sure their system is having “JDK”. If they don’t have it then they can download from this below link:

https://www.oracle.com/technetwork/java/javase/downloads/jdk11-downloads-5066655.html

Depending on their system (Windows 64bit/32bit) they need to download and install. Then they need to add the “JAVA” files to their system “PATH” so that the system can run the program from CMD (Command Prompt). The path will show something like this “`C:\Program Files\Java\jdk1.6.0_02`.”. Now just add the address besides the current path directory and save it.

The other way they can execute this program in to download the IDE (Integrated Development Environment) on their system. They can download IntelliJ IDEA or Eclipse depending on the windows (32bit/64bit). Below is the link:

IntelliJ IDEA:

https://www.jetbrains.com/ru-ru/idea/download/

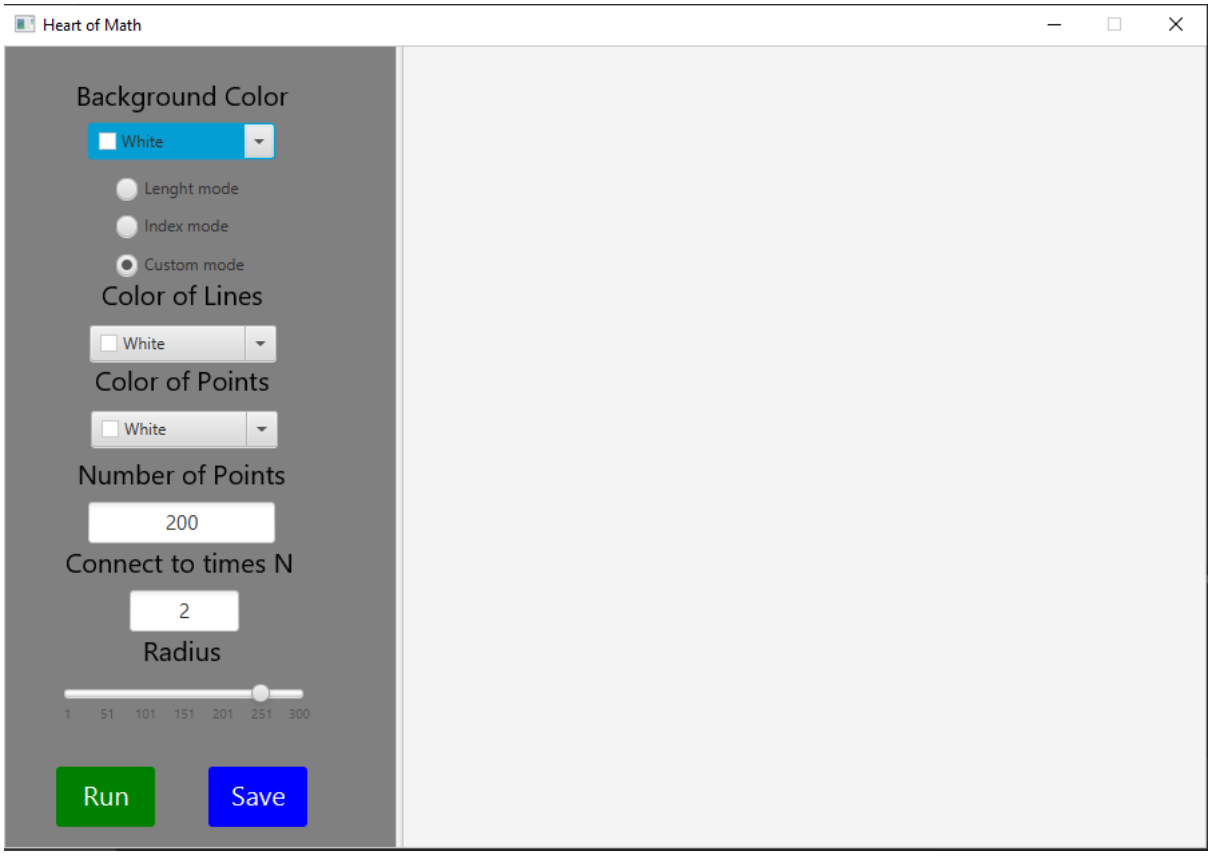
Eclipse:

http://www.eclipse.org/downloads/

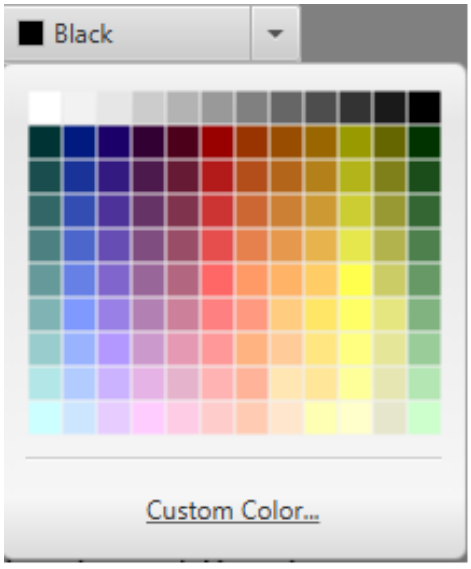
We developed this program using “IntelliJ IDEA”.

Execution Procedures:

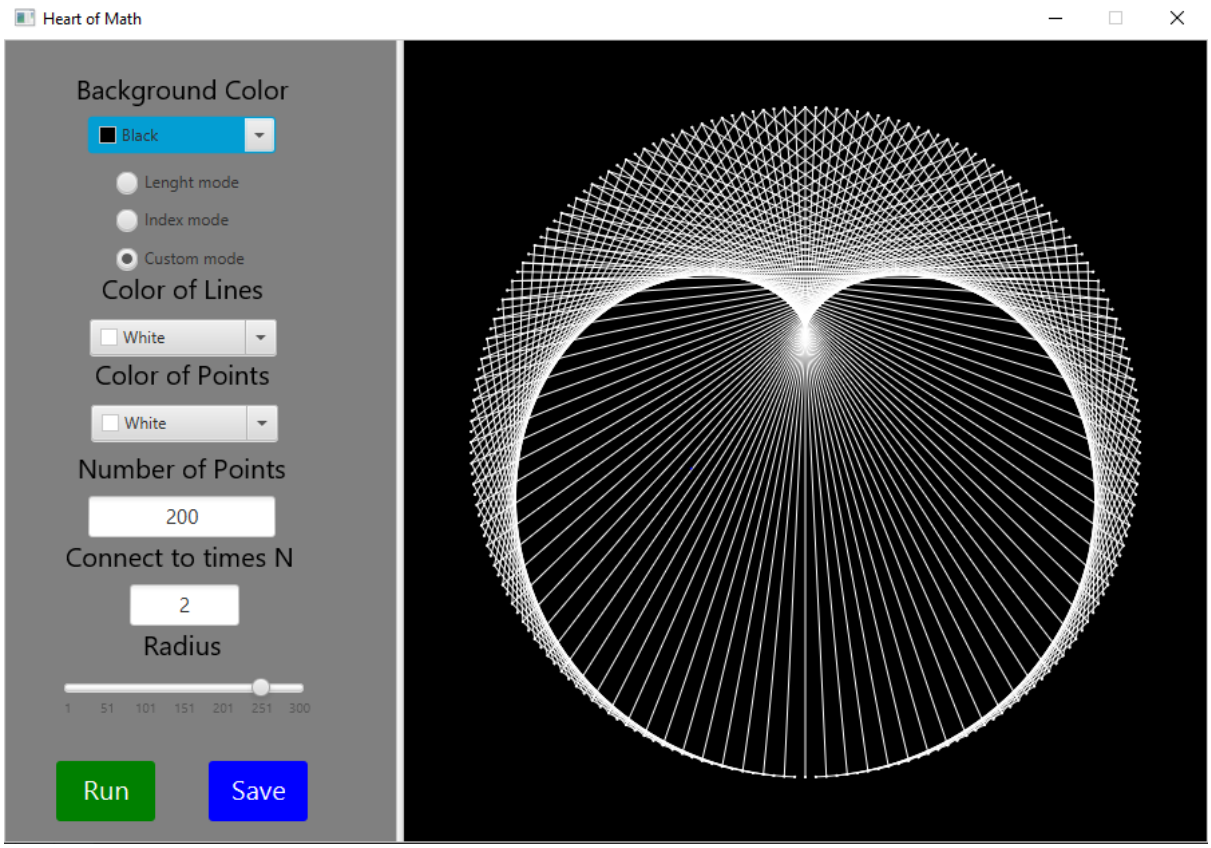
When user executes this program, it will show this:



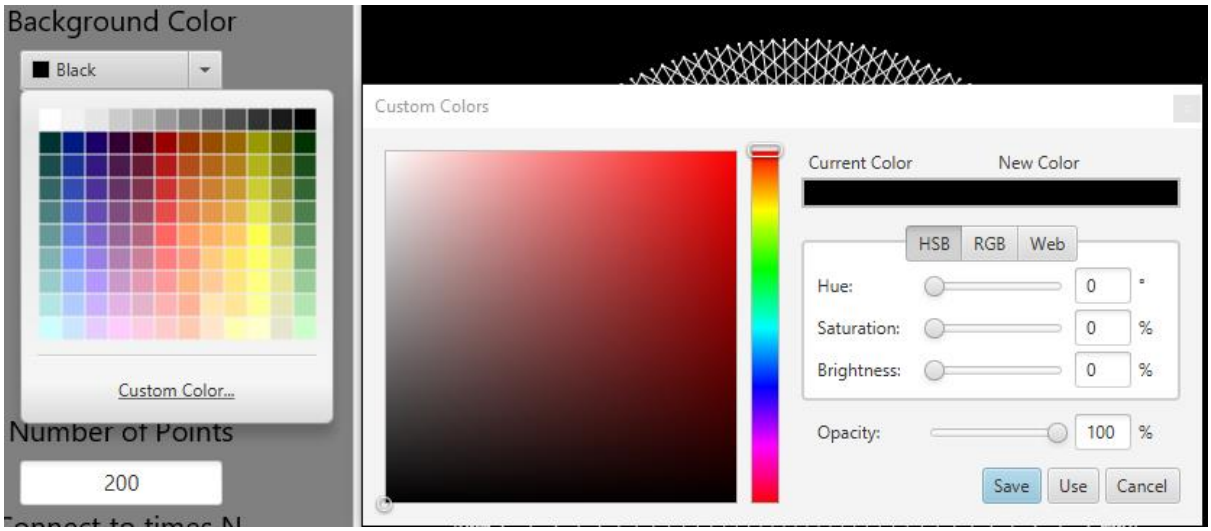
There is nothing to see, because all colors is white so that we can't see. If we change background color



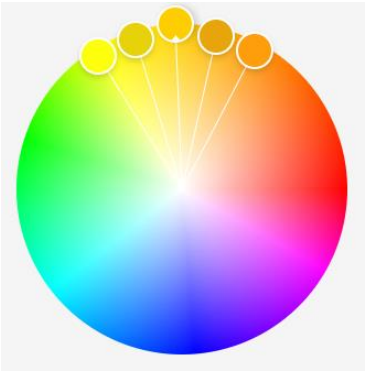
We see this:

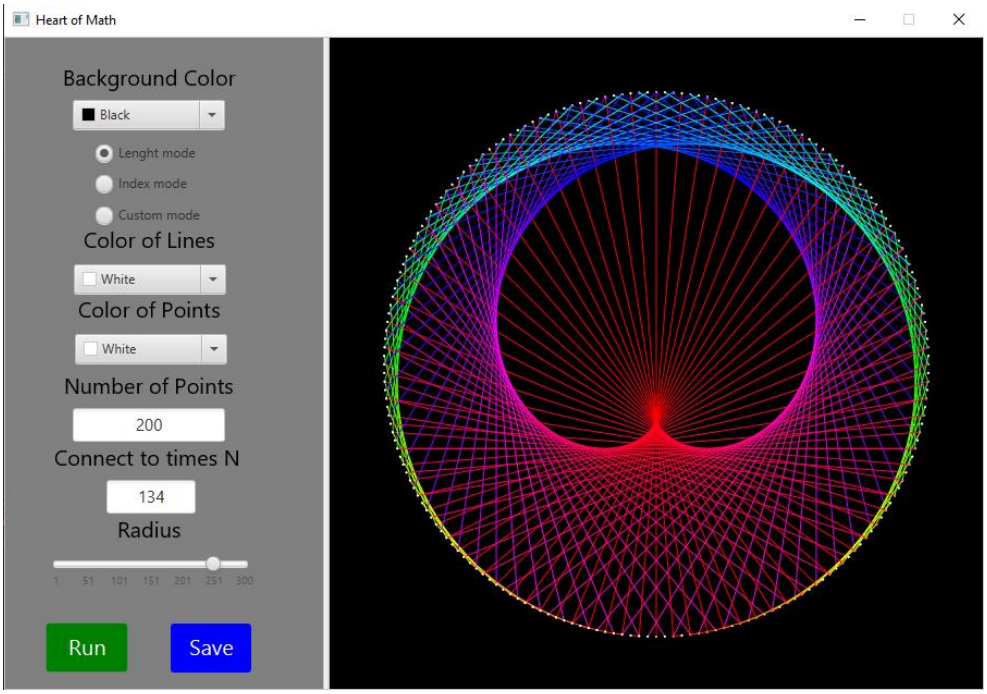


Function (Background Color): We use JavaFX ColorPicker. When we click one of the colors the Background Color automatically change.

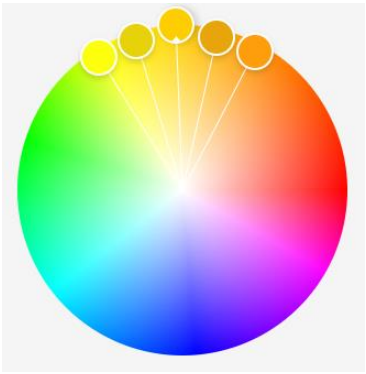


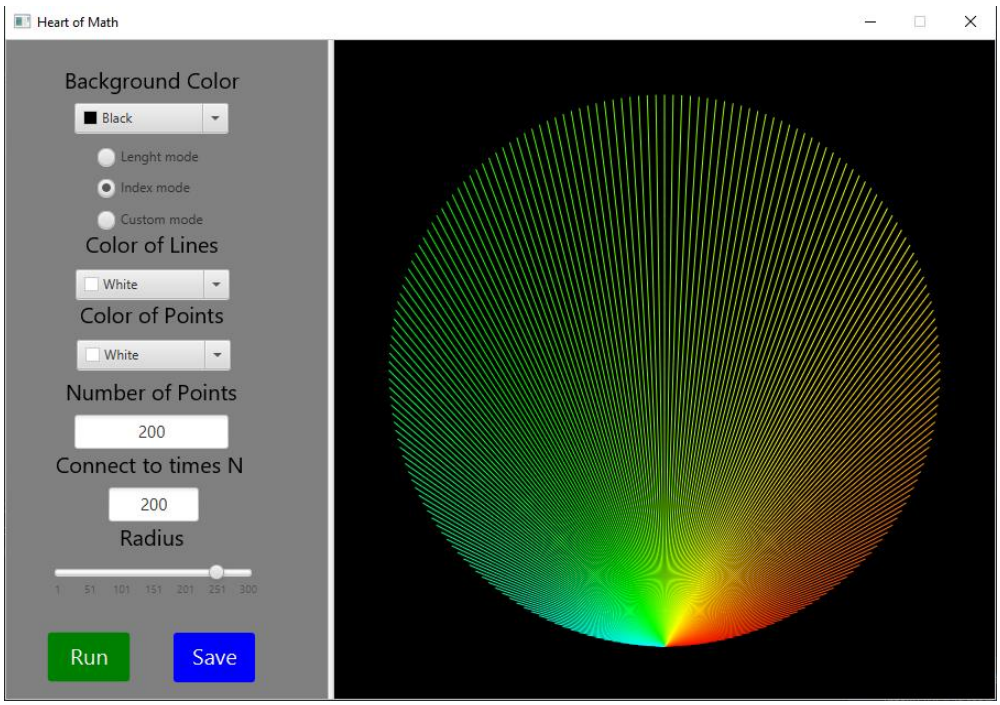
Function (Length mode): Length mode this is for coloring lines with length of lines, another word if length of line is (short to long) >>> (yellow to red) with Adobe Colors Circle.



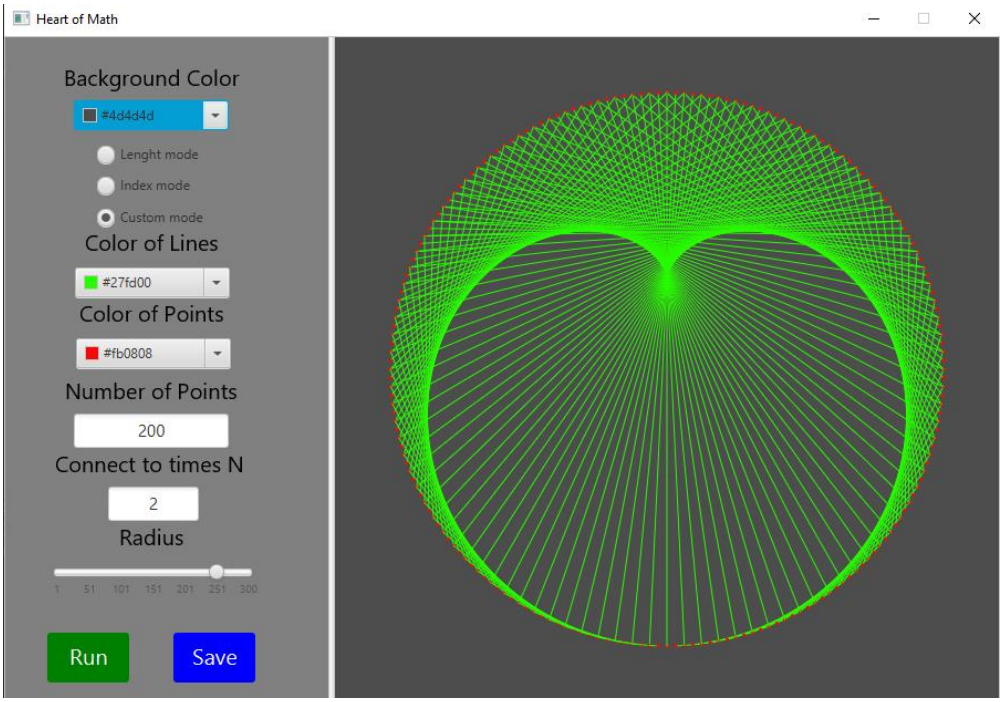


Function (Index mode): Index mode this is for coloring lines with index of points, another word if index of point (small to big) >>> (yellow to red) with Adobe Colors Circle.





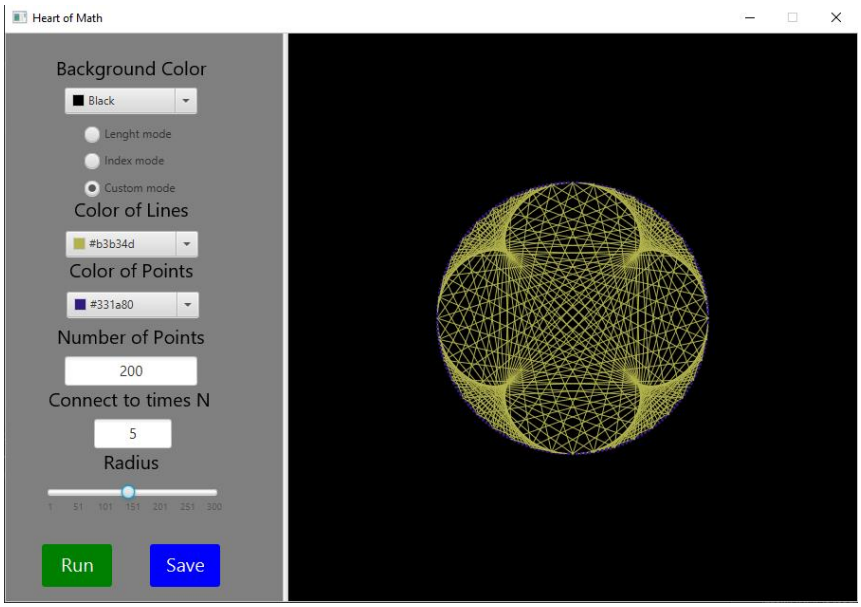
Function (Custom mode): Custom mode this is for coloring lines with Function (Color of Lines) and coloring points with Function (Color of Points). It works like Function (Background Color).



Number of Points: is the number of points around circle.

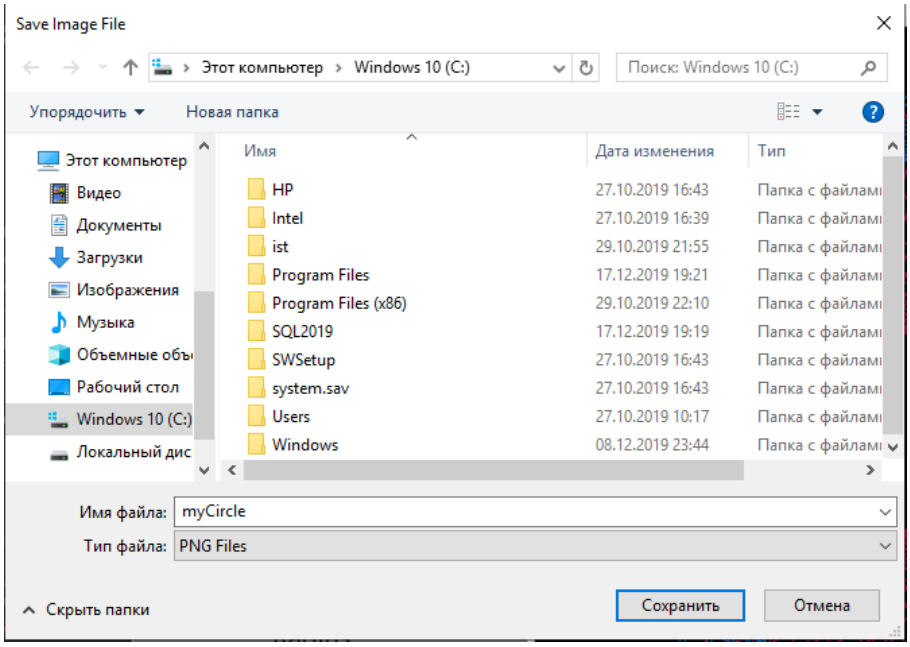
Connect to times N: is the connection of the two point with index, another word if index of point is I is connected with (I*N mod Number of Points).

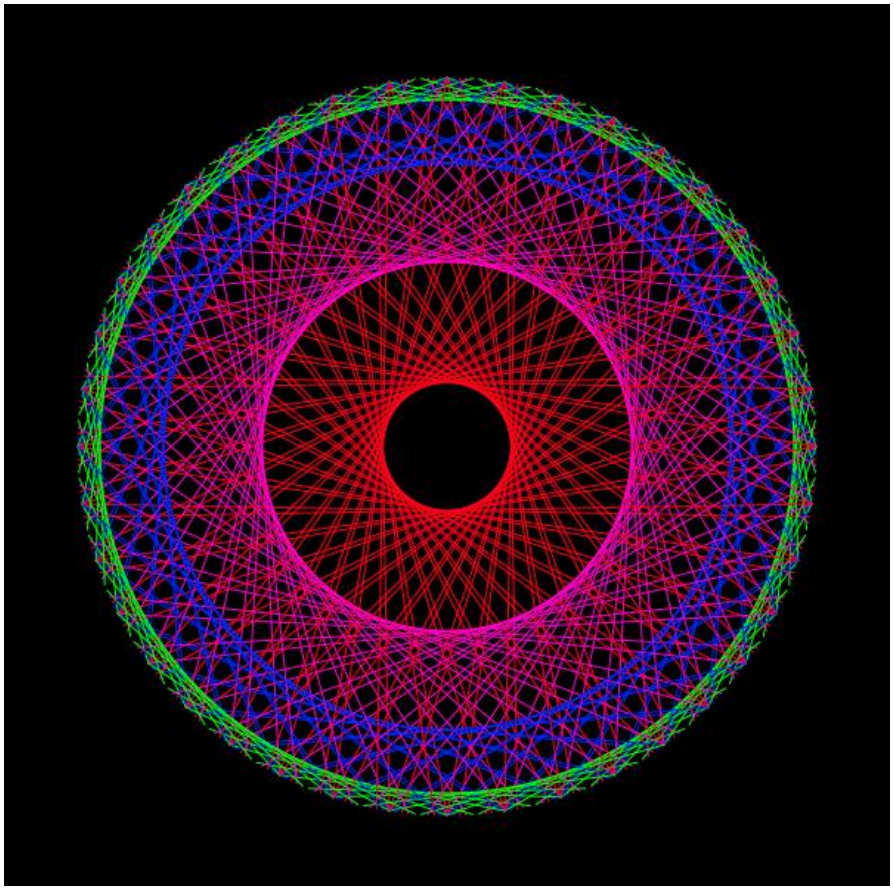
Radius Slider: change radius of the circle.



Run Button: After changing Number of Points or Connect to times N click to Run Button for realization.

Save Button: saving this picture as PNG, JPEG, BMP, GIF.





OBJECT ORIENTTED EXPLANATION

You can see on my GitHub: https://github.com/abzh00/HeartOfMath

REFERENCE

Bibliography:

Adobe Colors: https://color.adobe.com/ru/create

Mandelbrot and Heart of Math:
https://www.youtube.com/watch?v=qhbuKbxJsk8&t=11s

JavaFX Learning:
https://www.tutorialspoint.com/javafx/javafx_animations.htm