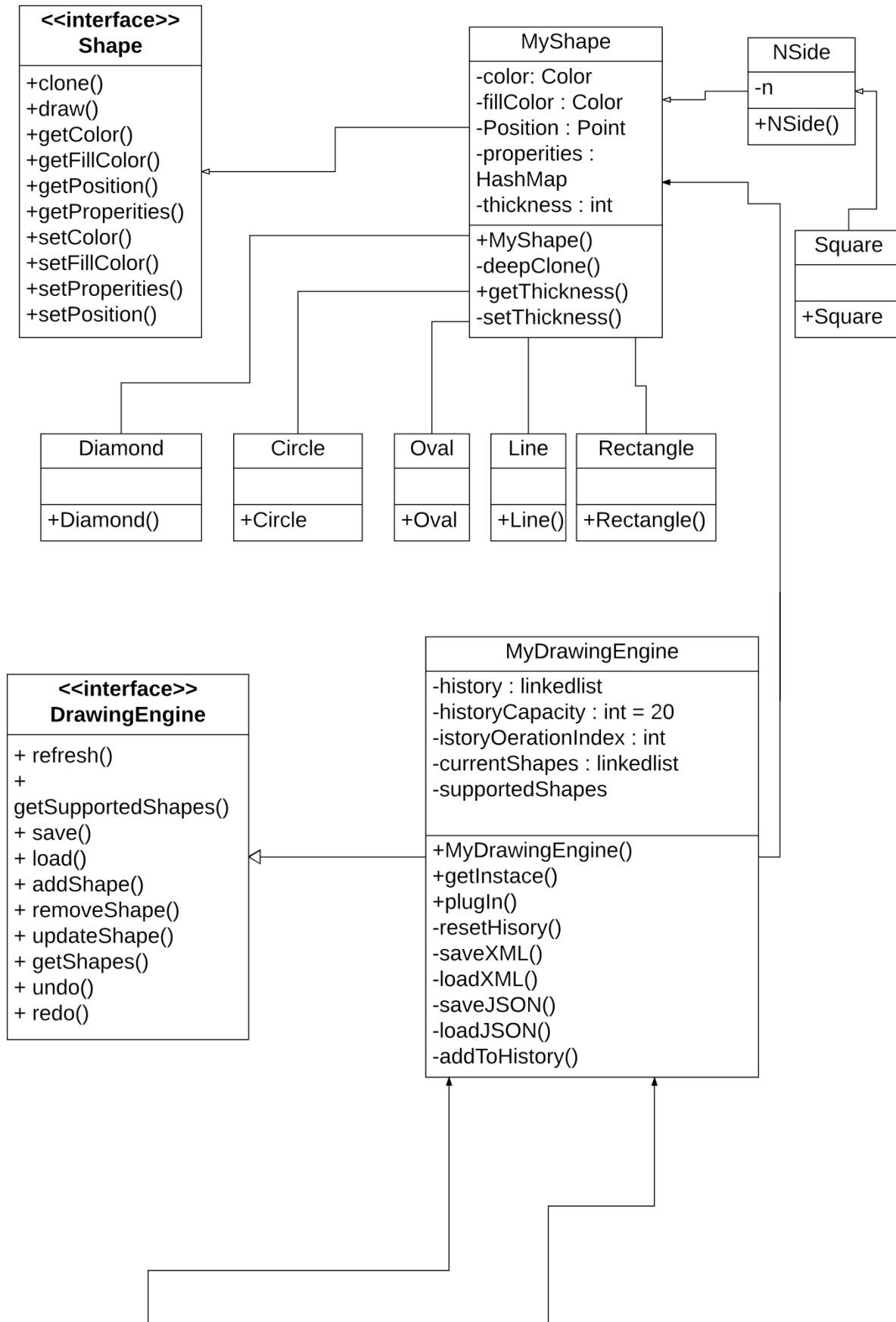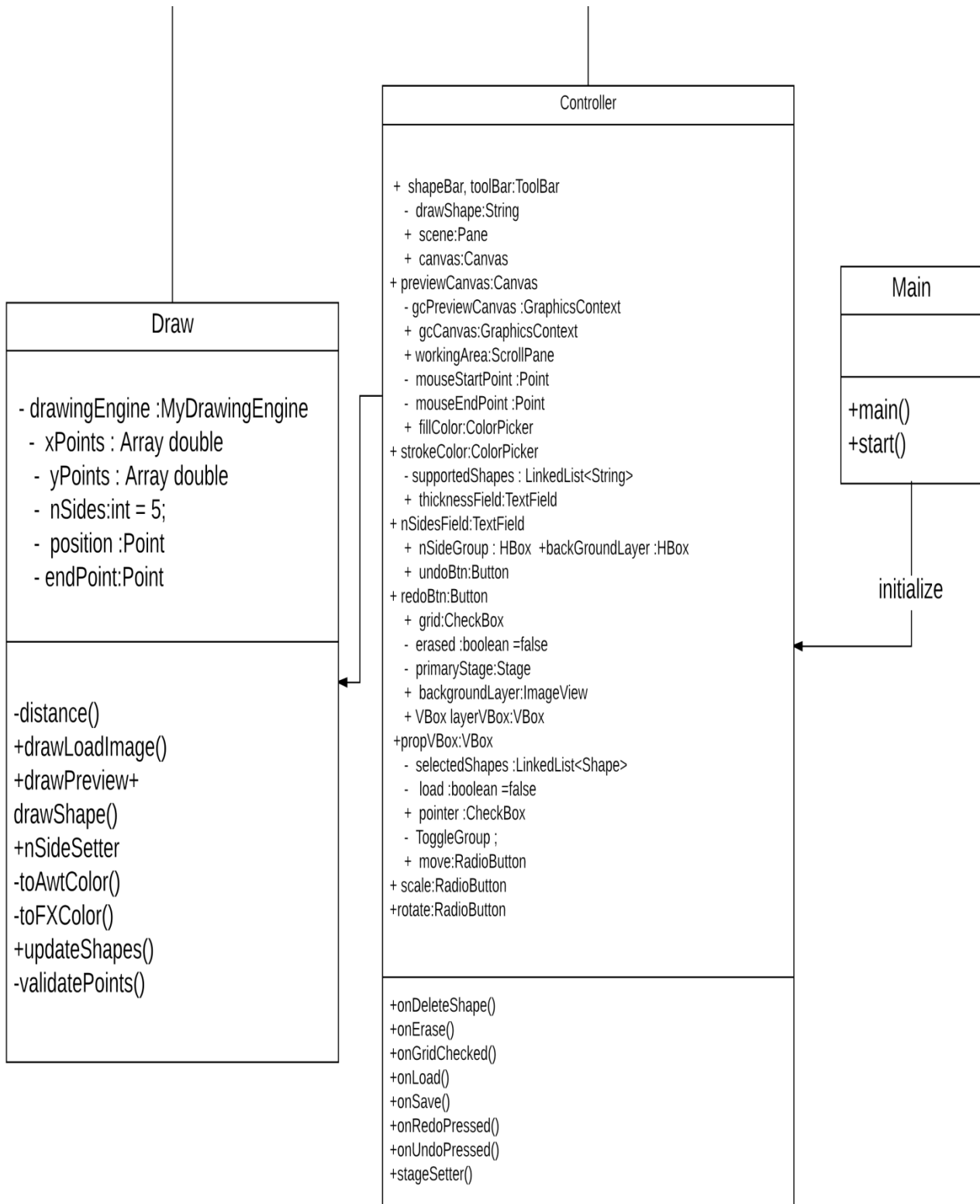# Paint Software

Paint is software to draw colored shapes and control their position, change line thickness and more throw an easy GUI. We used java as programming language for this software,javaFX as a library for the GUI,XMLEncoder and XMLDecoder for saving data in xml file and finally we implemented our own JSON parser ... The software is very easy to use . the user can draw, resize and move shapes just by dragging it.Finally we made JNLP - even we are a team of two - . you can download from "paintklb.000webhostapp.com"
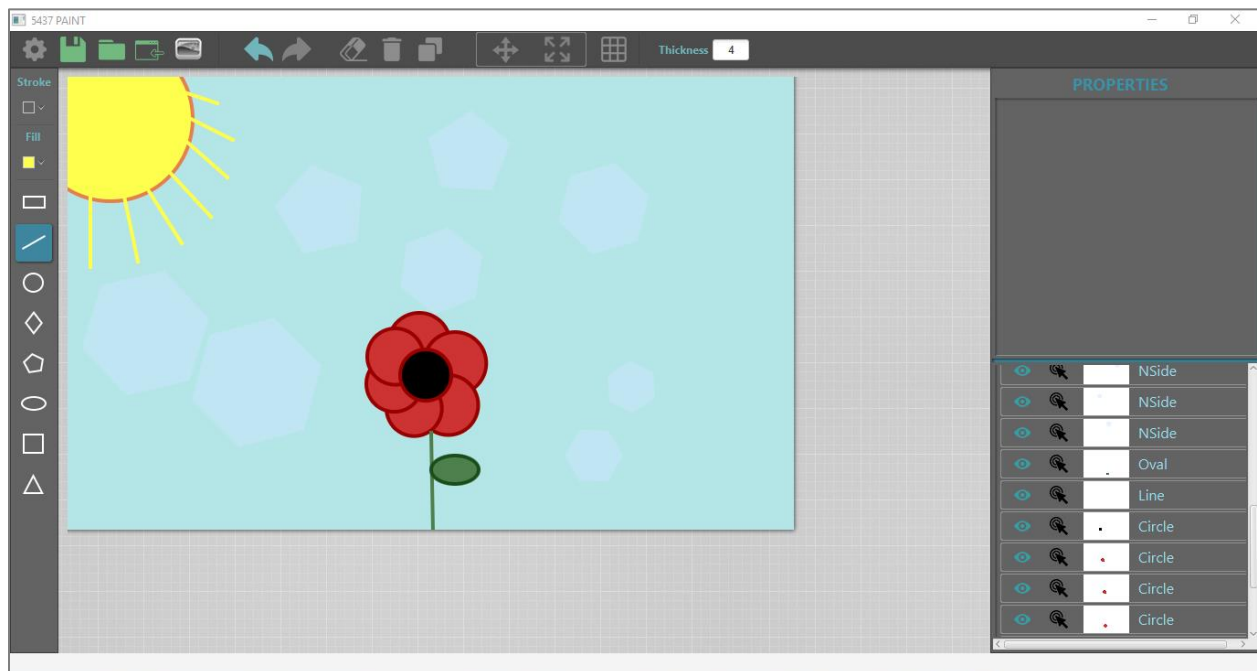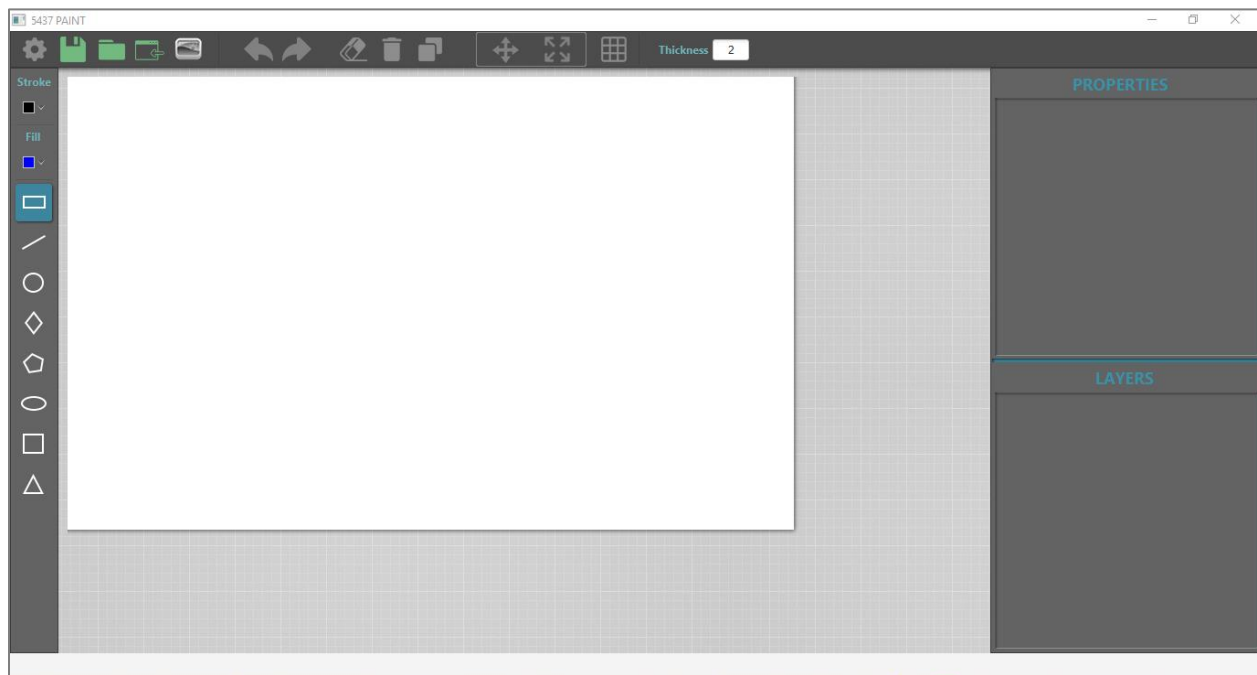
Muhammad El-Sayed Sharaf El-Deen 54
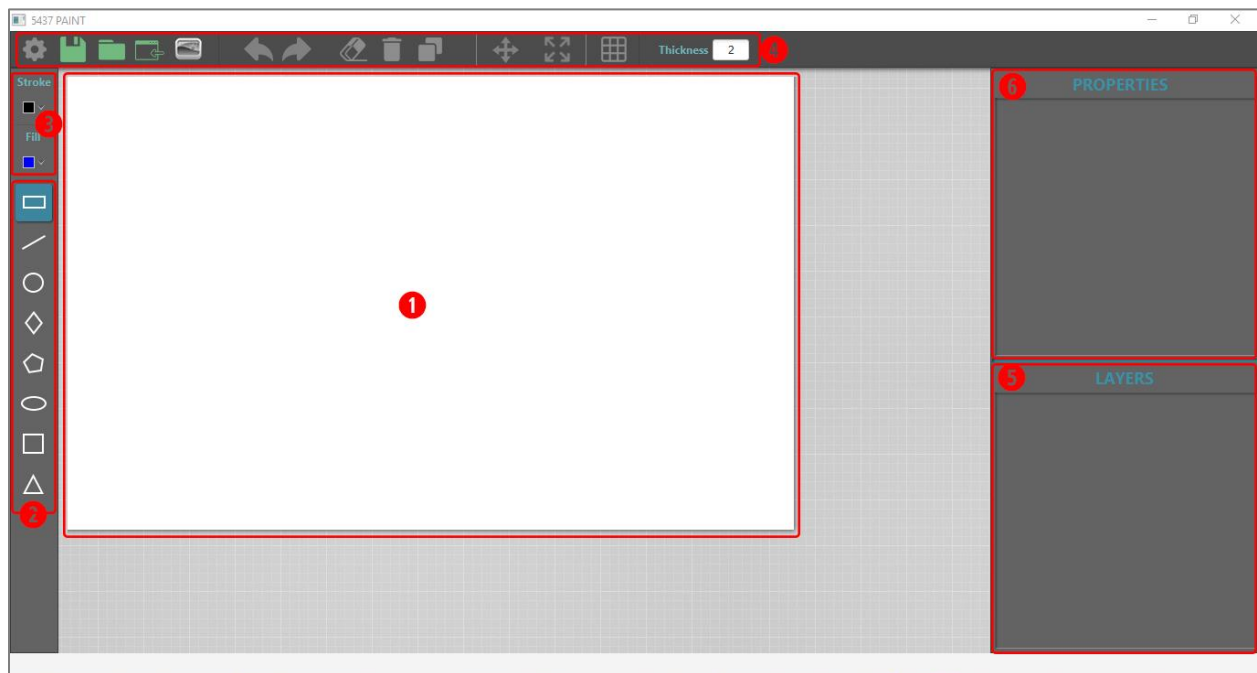Abdelrahman Ahmed Muhammad Abdelfattah Omran 37
11/23/2017

UML Diagram

<<interface>>
Shape

+clone()
+draw()
+getColor()
+getFillColor()
+getPosition()
+getProperities()
+setColor()
+setFillColor()
+setProperities()
+setPosition()

MyShape

-color: Color
-fillColor : Color
-Position : Point
-properities :
HashMap
-thickness : int

+MyShape()
-deepClone()
+getThickness()
-setThickness()

NSide

-n

+NSide()

Square

+Square

Diamond

+Diamond()

Circle

+Circle

Oval

+Oval

Line

+Line()

Rectangle

+Rectangle()

<<interface>>
DrawingEngine

+ refresh()
+
getSupportedShapes()
+ save()
+ load()
+ addShape()
+ removeShape()
+ updateShape()
+ getShapes()
+ undo()
+ redo()

MyDrawingEngine

-history : linkedlist
-historyCapacity : int = 20
-istoryOerationIndex : int
-currentShapes : linkedlist
-supportedShapes

+MyDrawingEngine()
+getInstace()
+plugIn()
-resetHisory()
-saveXML()
-loadXML()
-saveJSON()
-loadJSON()
-addToHistory()

Draw

- drawingEngine :MyDrawingEngine
- xPoints : Array double
- yPoints : Array double
- nSides:int = 5;
- position :Point
- endPoint:Point

-distance()
+drawLoadImage()
+drawPreview+
drawShape()
+nSideSetter
-toAwtColor()
-toFXColor()
+updateShapes()
-validatePoints()

Controller

+ shapeBar, toolBar:ToolBar
- drawShape:String
+ scene:Pane
+ canvas:Canvas
+ previewCanvas:Canvas
- gcPreviewCanvas :GraphicsContext
+ gcCanvas:GraphicsContext
+ workingArea:ScrollPane
- mouseStartPoint :Point
- mouseEndPoint :Point
+ fillColor:ColorPicker
+ strokeColor:ColorPicker
- supportedShapes : LinkedList<String>
+ thicknessField:TextField
+ nSidesField:TextField
+ nSideGroup : HBox +backGroundLayer :HBox
+ undoBtn:Button
+ redoBtn:Button
+ grid:CheckBox
- erased :boolean =false
- primaryStage:Stage
+ backgroundLayer:ImageView
+ VBox layerVBox:VBox
+propVBox:VBox
- selectedShapes :LinkedList<Shape>
- load :boolean =false
+ pointer :CheckBox
- ToggleGroup ;
+ move:RadioButton
+ scale:RadioButton
+rotate:RadioButton

+onDeleteShape()
+onErase()
+onGridChecked()
+onLoad()
+onSave()
+onRedoPressed()
+onUndoPressed()
+stageSetter()
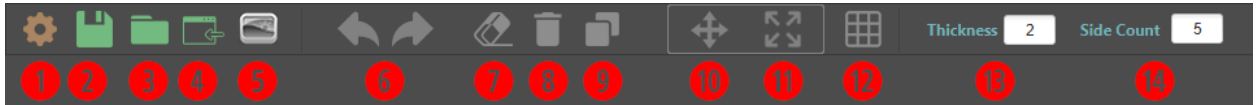
Main

+main()
+start()

initialize

Design

User Guide

1. Drawing Area where you can make various drawings.
2. Shapes Menu where you can pick a shape and start drawing it on the Drawing Area (Shapes are extendable that you can import a new shape and use it)
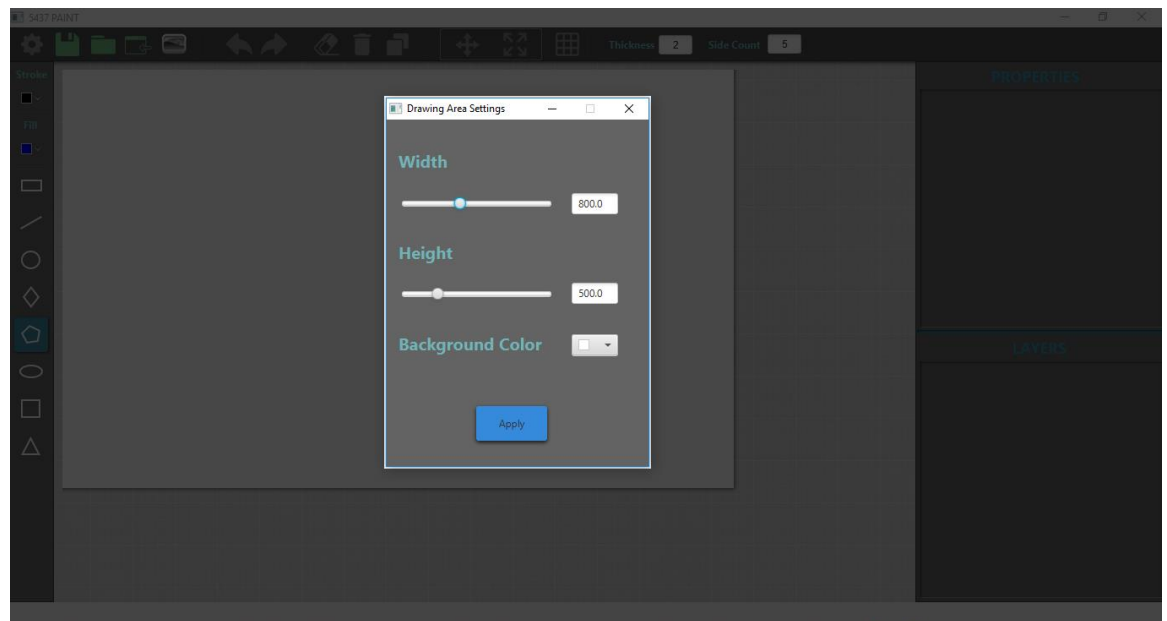3. Colors Menu where you choose a stroke color and a fill color to your shape,

Or change selected shape(s) colors.
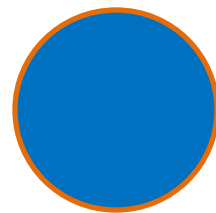
4. Tool Bar

1. Scene Settings which opens a window where you specify width and height of the drawing area, you can also set background color.

2. Save Scene which allows you save you current drawing to any folder in your computer as .xml and .json format.

3. Load Scene which allows you load a scene you saved before.

4. Import Shape which allows you import a new shape and draw it.

5. Save As which allows you to save you drawing as a PNG image.
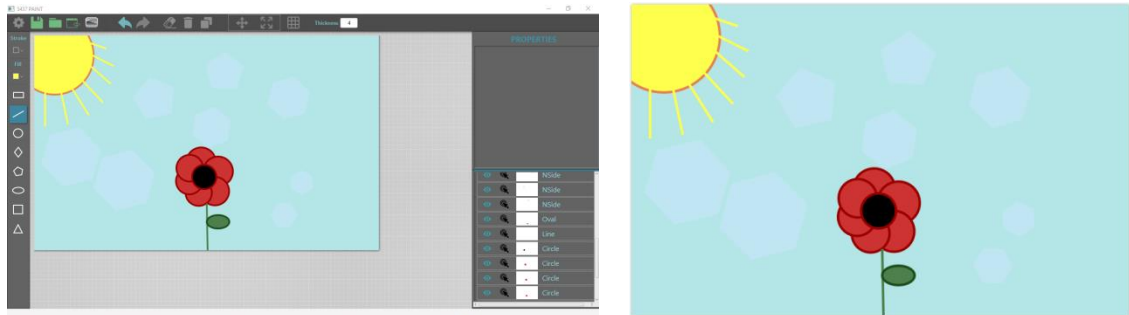
6. Undo Redo which allows undo and redo operations to your drawing.
7. Erase which clears the drawing area.
8. Remove which allow you to remove the selected shape(s).
9. Copy which allow you to clone the selected shape(s).

10. Move tool which allows you to move the selected shape(s).

11. Resize tool which allows you to resize the selected shape(s).

12. Grid tool which adds a helpful grid to the drawing area allowing you to draw more precisely.
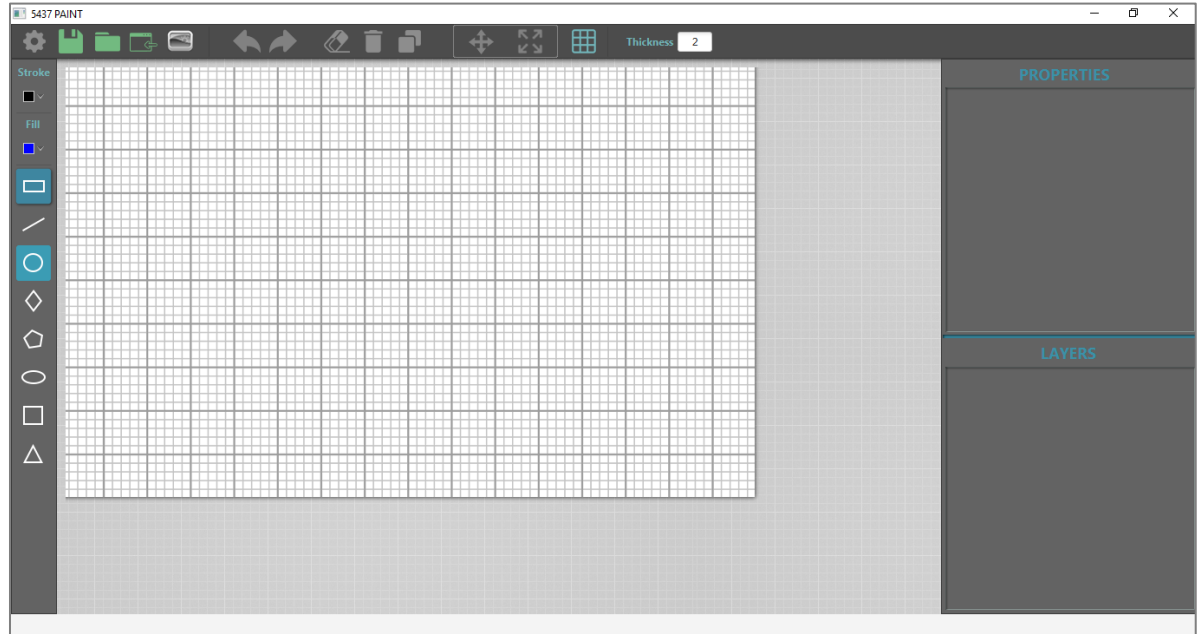
13. Thickness which allows you specify the stroke thickness of your drawing, it can also update the current selected shape(s) stroke thickness.

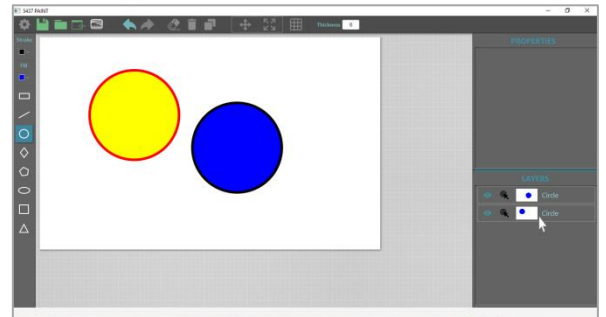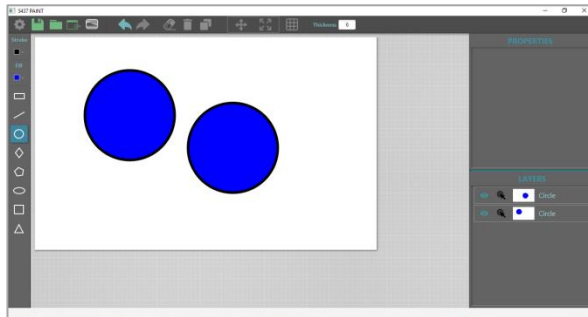14. Side Count which allow you specify the number of regular shape ⬠ sides.

5. Layers which contains a layer to each shape,

This layer provides some features:
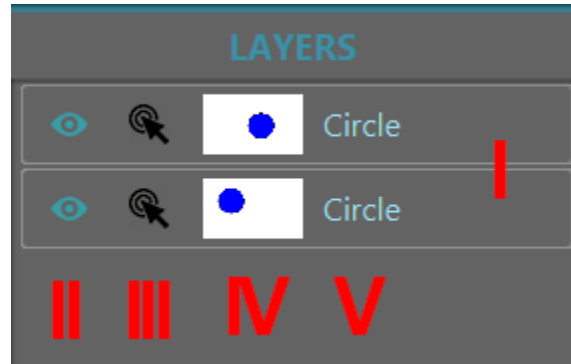
I. Hovering over it will change its corresponding shape colors to red stroke and yellow fill.

II. Show and hide shape
III. Select and deselect shape
IV. Shape image on Scene
V. Shape type

6. Properties which contains the properties of the current selected shape.