Alexandria University
Faculty of Engineering
Computer and Systems Engineering Dept.
CS221: Programming 2

Paint

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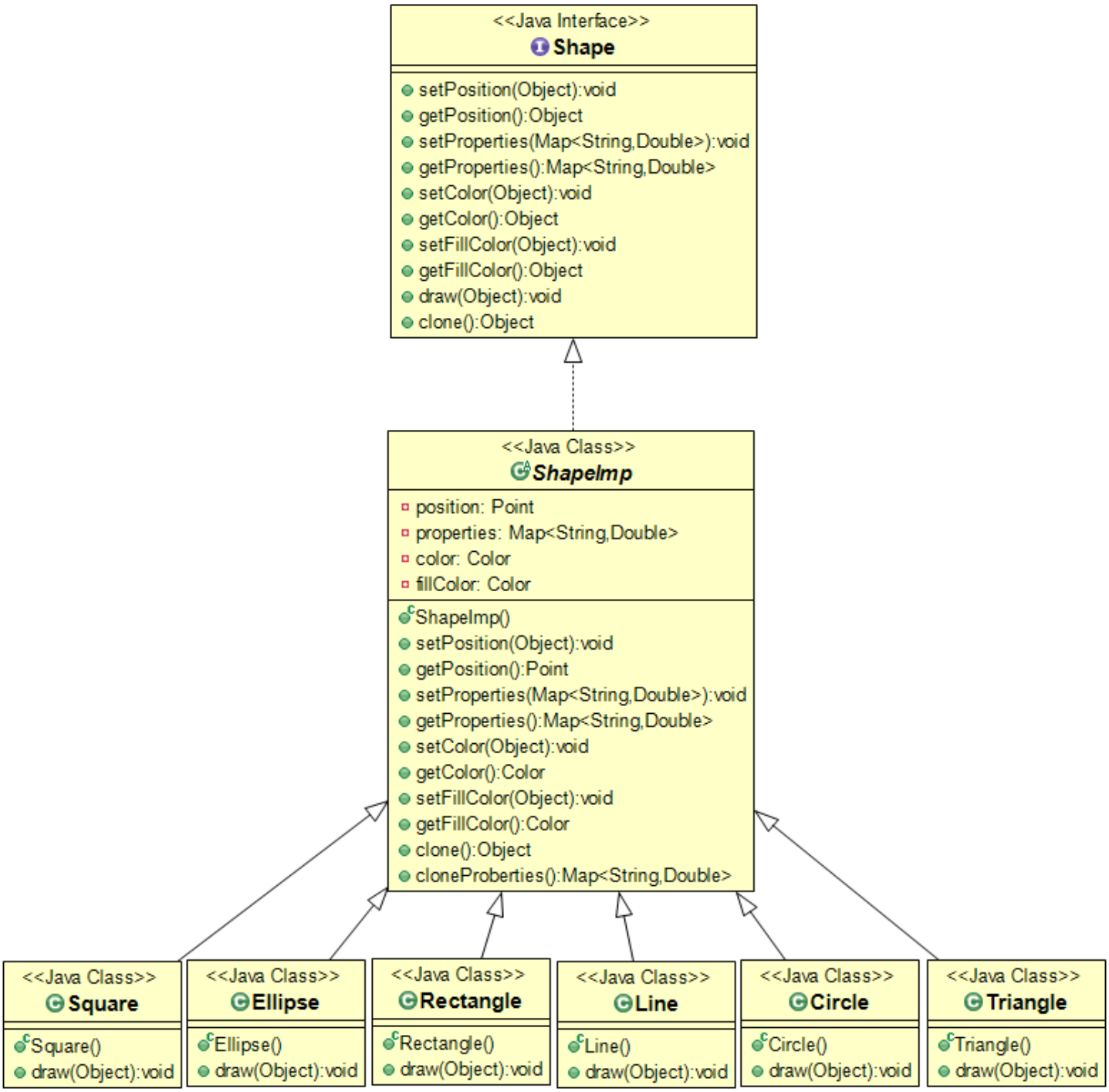
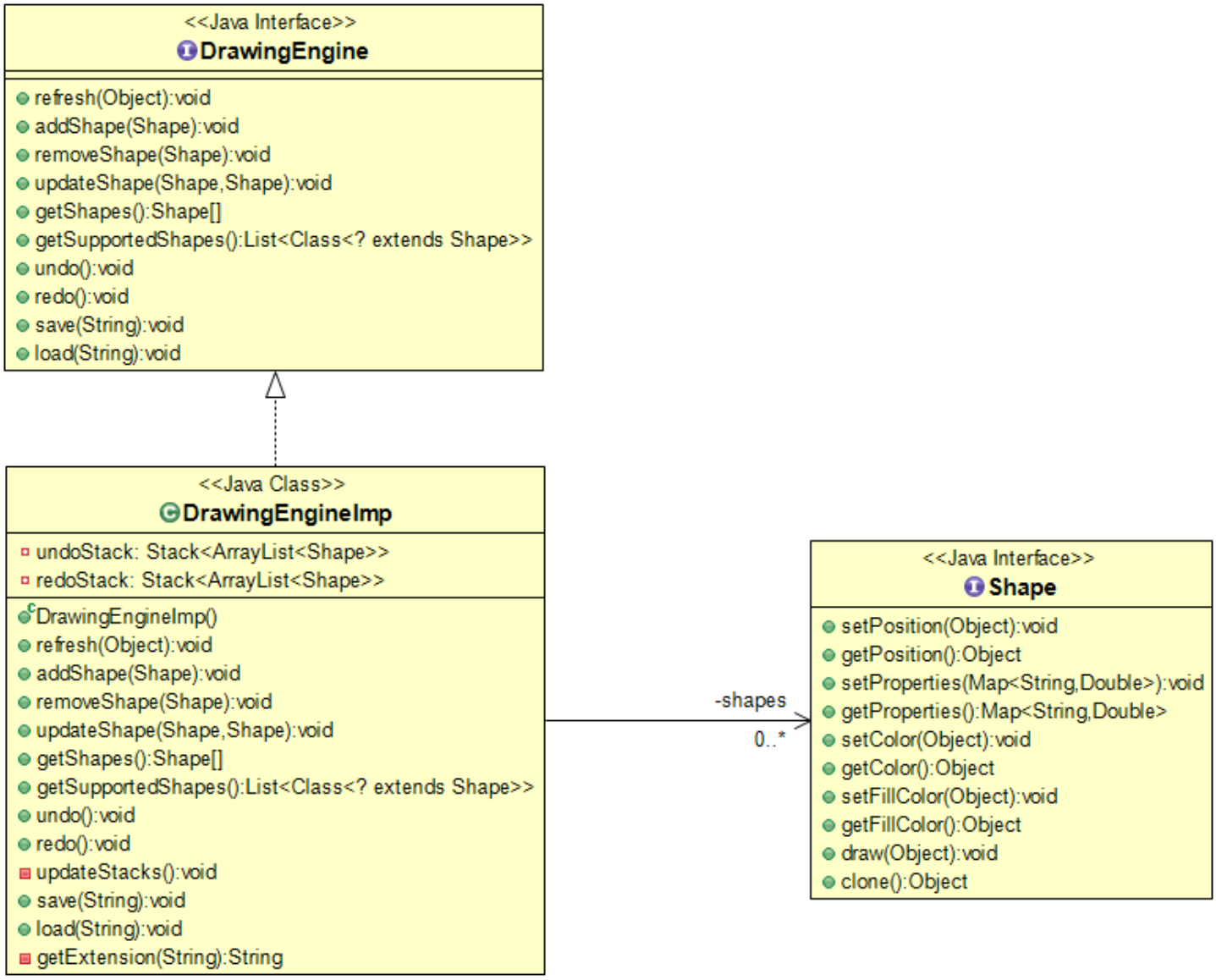
MUSTAFA MOHAMED MUSTAFA (50)

UML Diagram

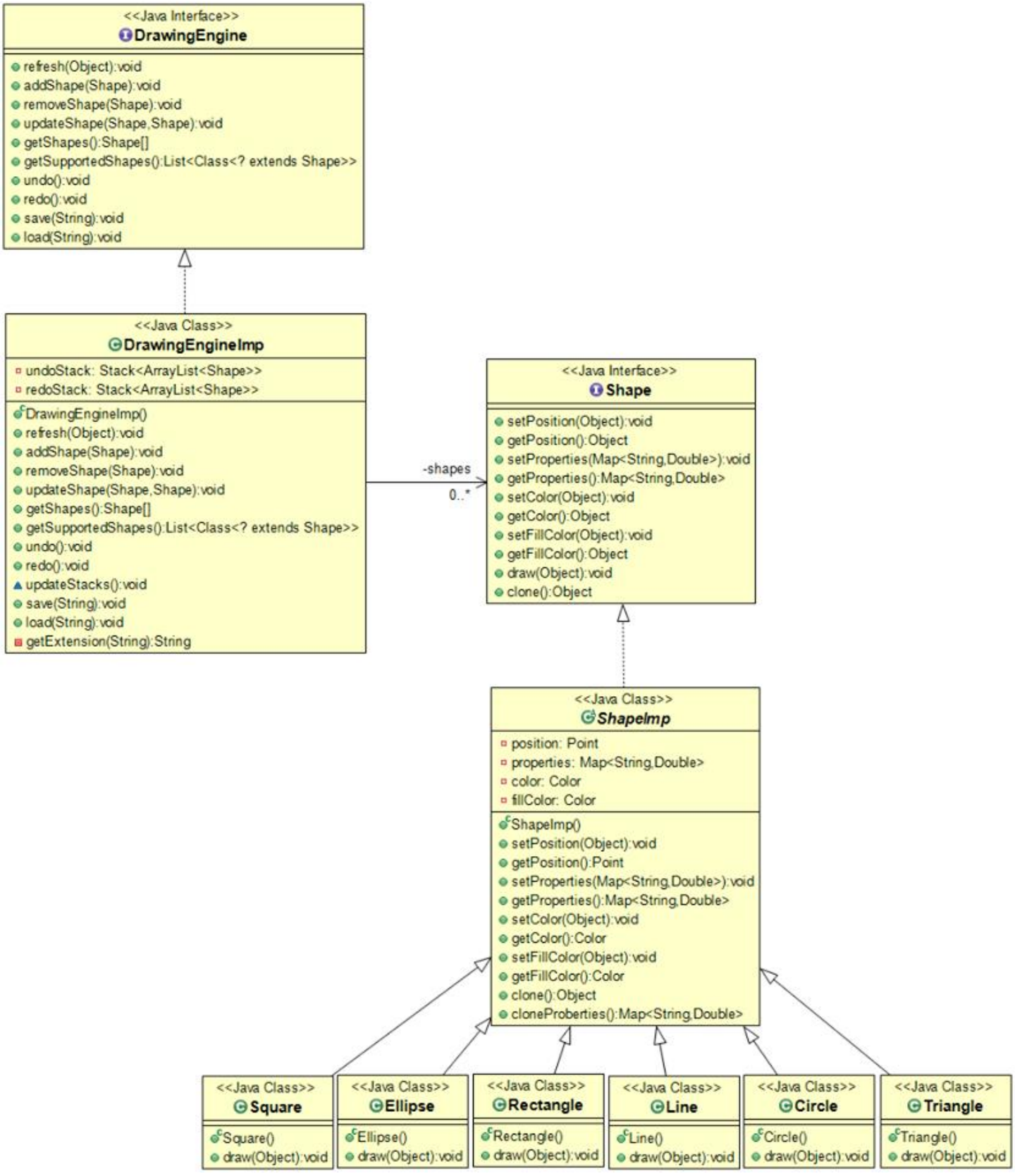


ShapeImp : an abstract class implementing the shape interface.

Shapes Classes : extends ShapeImp to determine how to draw this shape.



DrawingEngineImp : a class implementing the DrawingEngine interface and it also contains a list of Shapes.



Full UML Diagram

User Guide

1) Mark Draw Solid Shapes if you want to draw shapes with fill color or unmark it for hollow shapes.

2) Choose a color for the edge.

3) Choose a color to fill the shape.

4) Choose the shape you want to draw then press and drag on the board to draw.

5) Select Shape.

6) Remove the selected shape.

7) Move the Selected shape by entering value in Pixels.

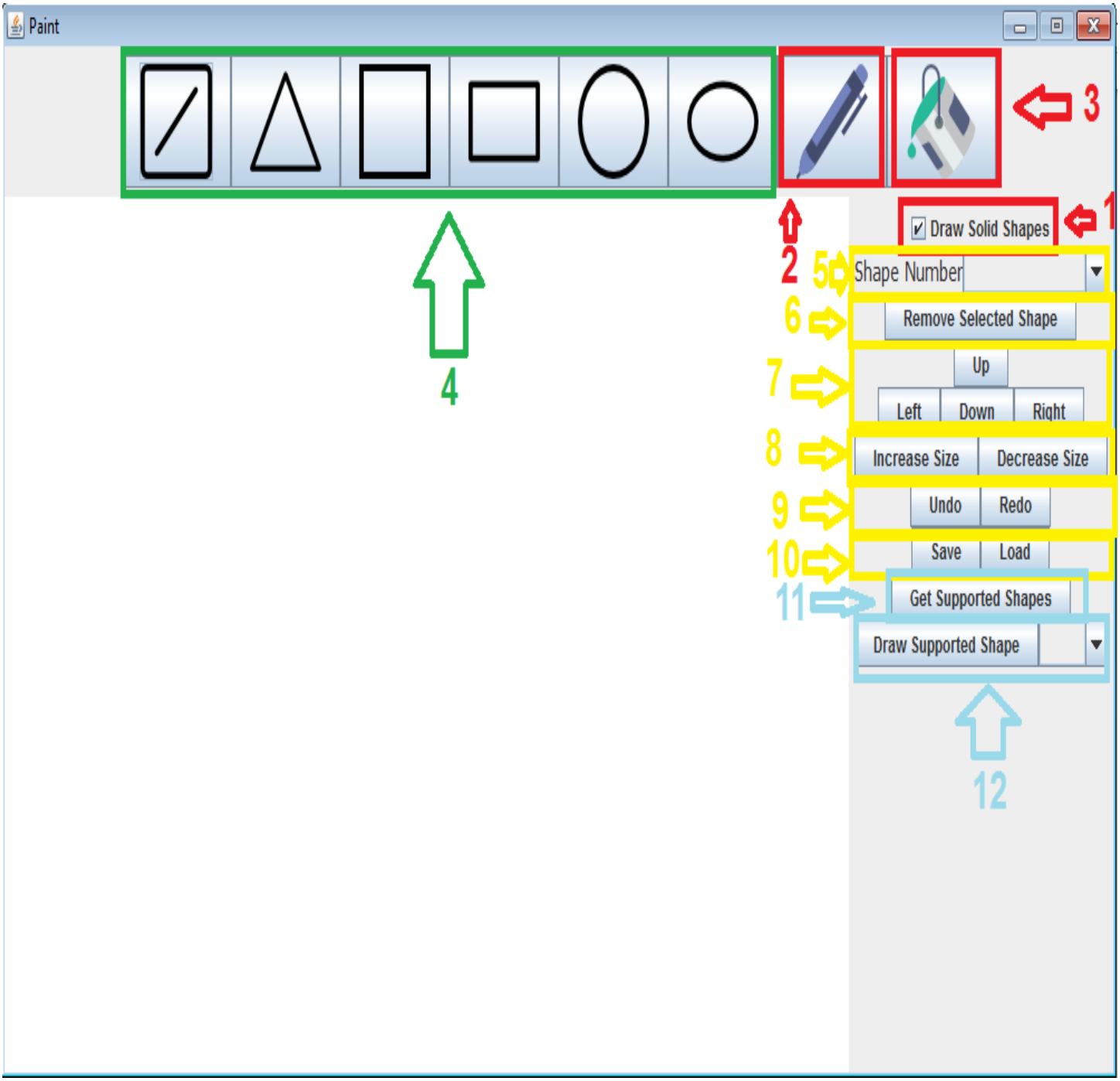
8) Resize the Selected shape by entering value in Pixels.

9) Undo and Redo changes.

10) Save and Load Shapes.

11) Get Supported Shapes.

12) Select Supported Shape and Draw it.


Paint
3
Draw Solid Shapes
1
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Shape Number
6
Remove Selected Shape
7
Up
Left
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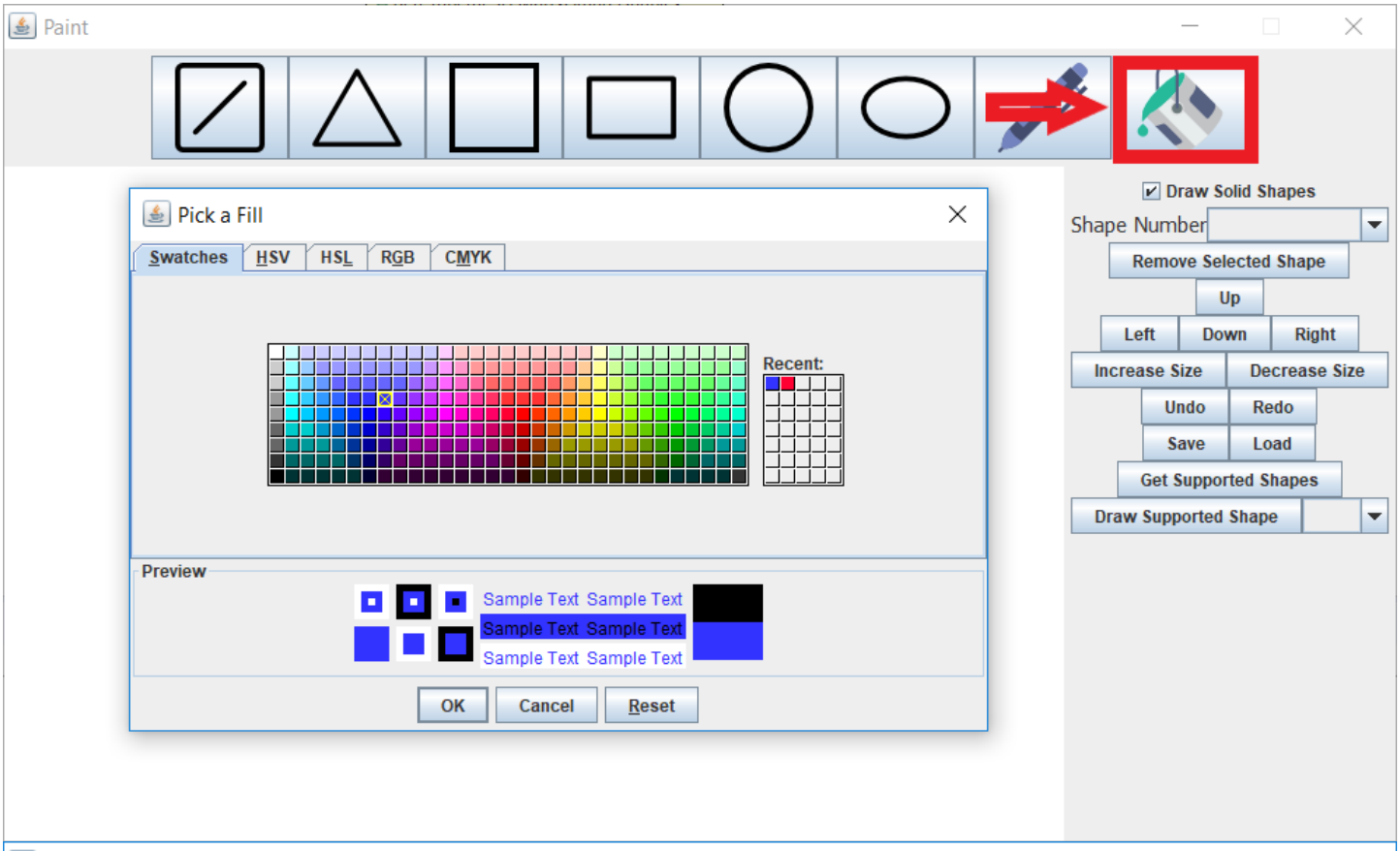
8
Increase Size
Decrease Size
9
Undo
Redo
10
Save
Load
11
Get Supported Shapes
Draw Supported Shape
4
12

Sample Run


Paint
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Draw Solid Shapes
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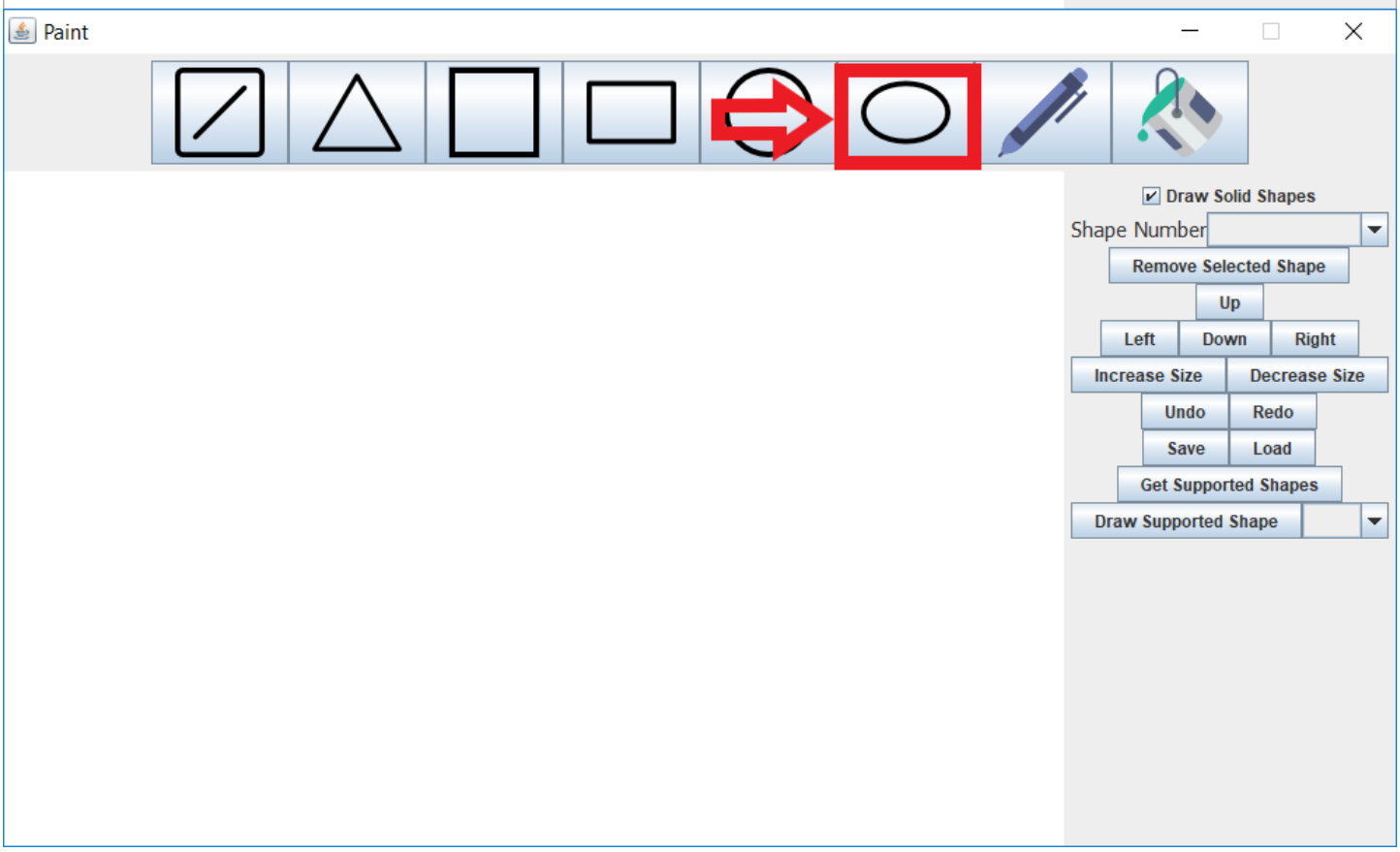
Get Supported Shapes
Draw Supported Shape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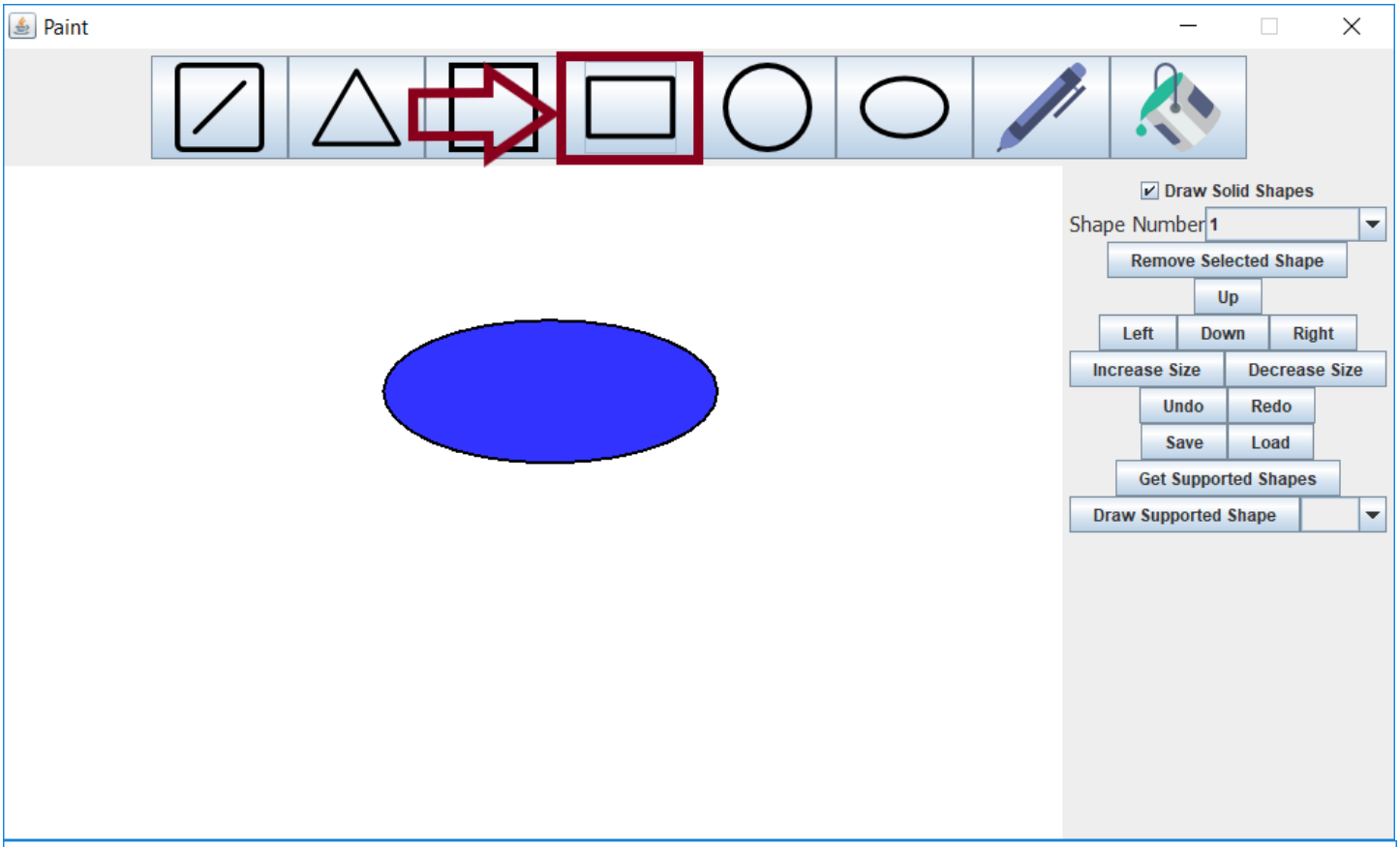
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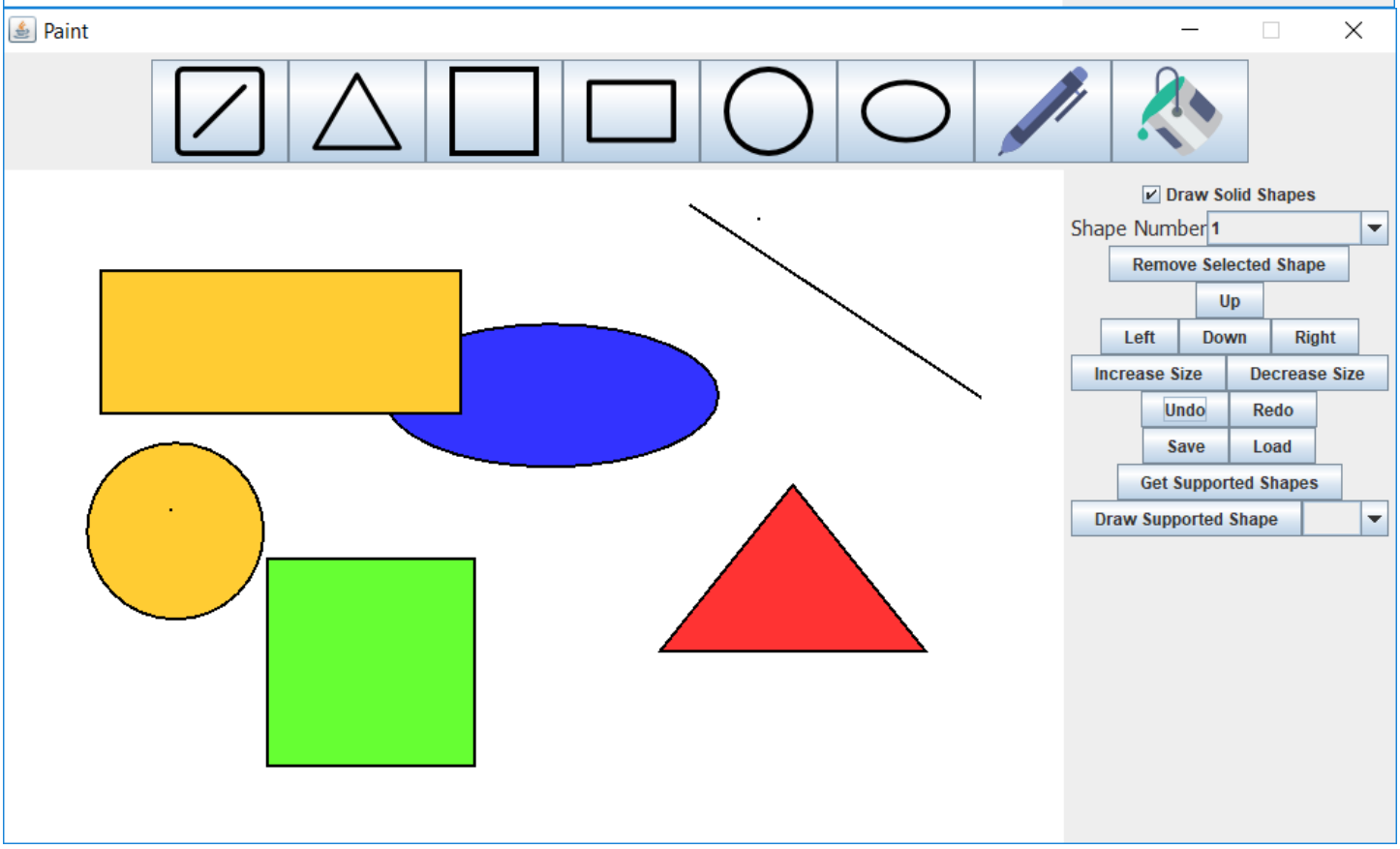
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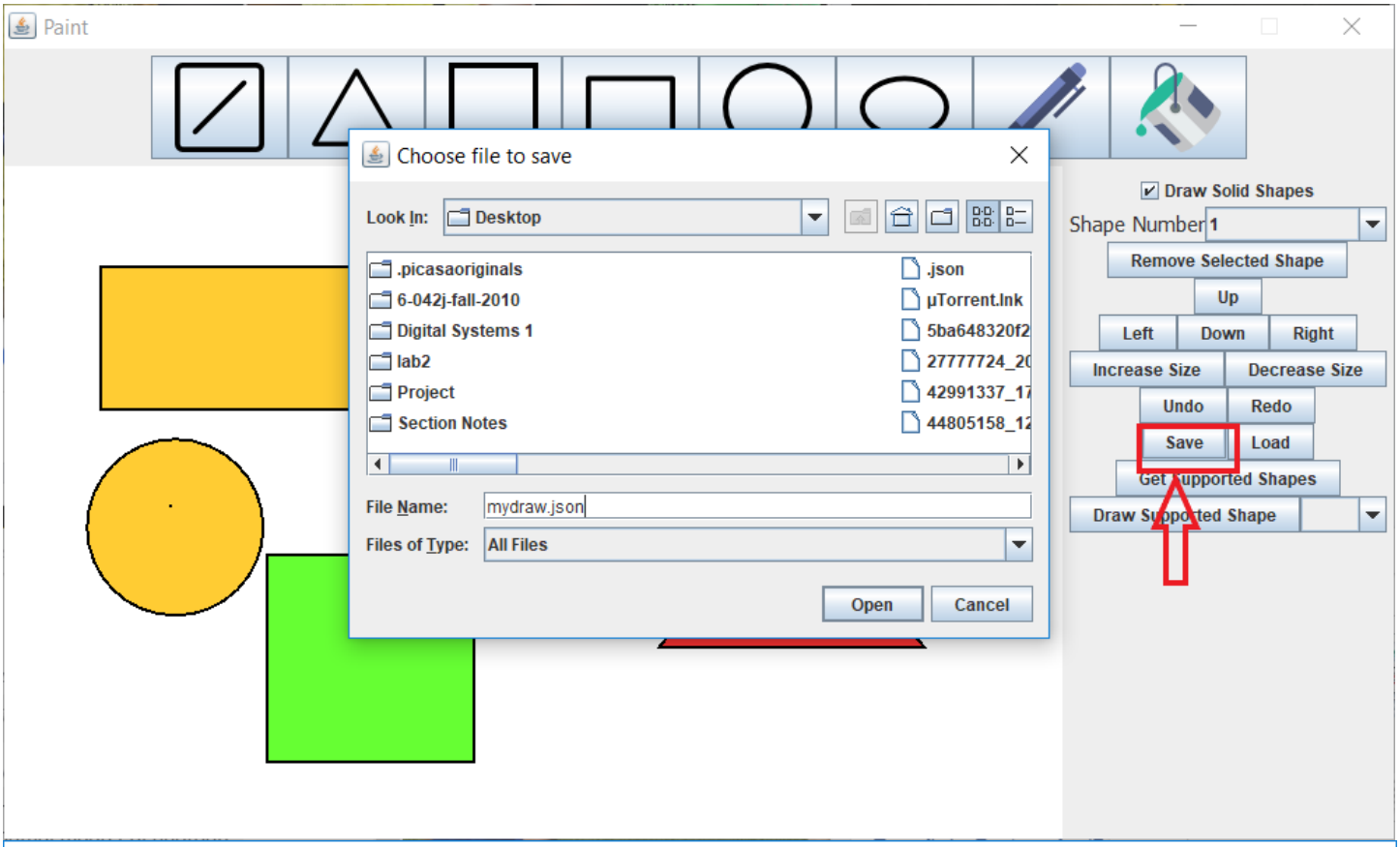
Draw Supported Shape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Choose file to save
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Draw Solid Shapes
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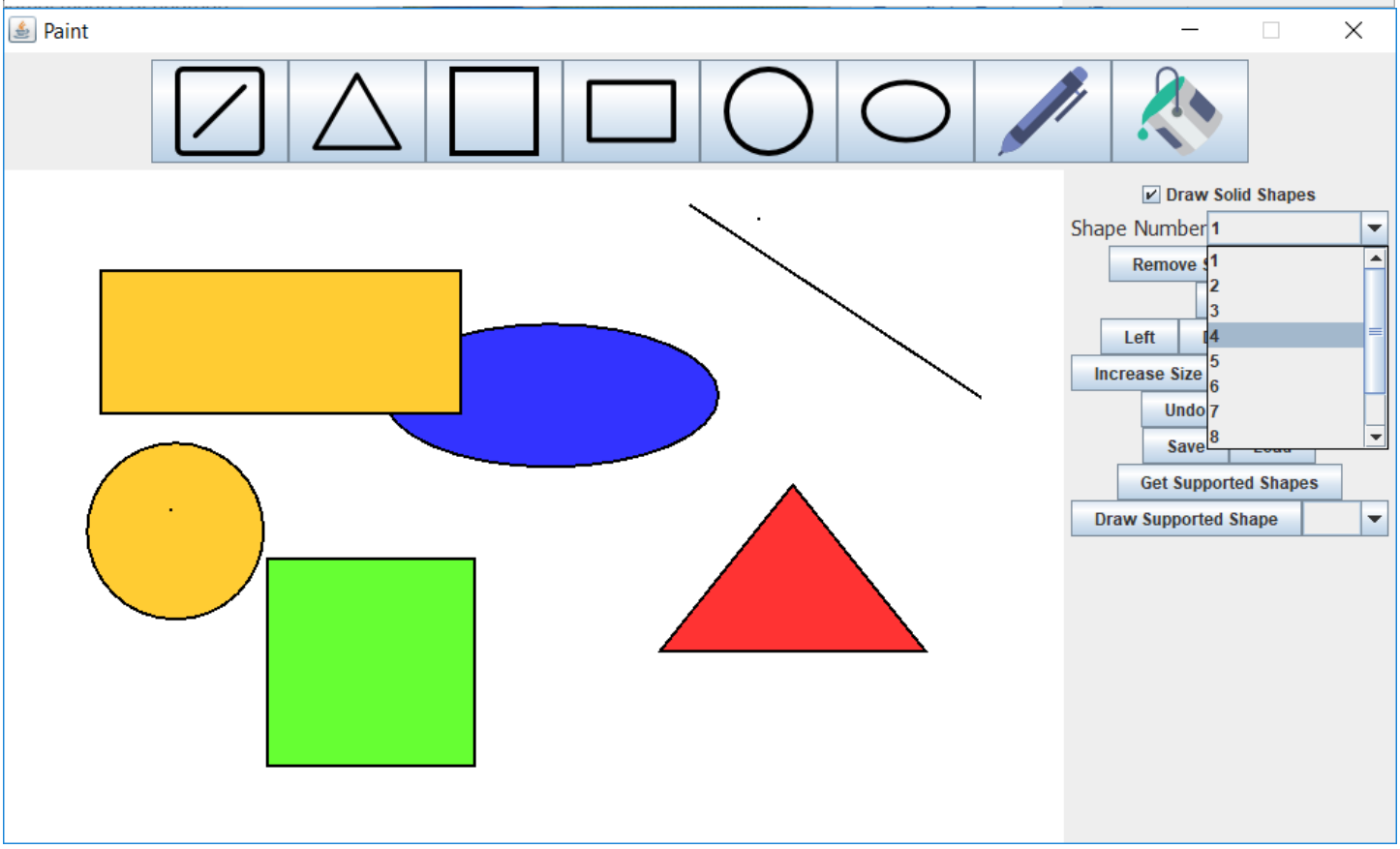
Draw Supported Shape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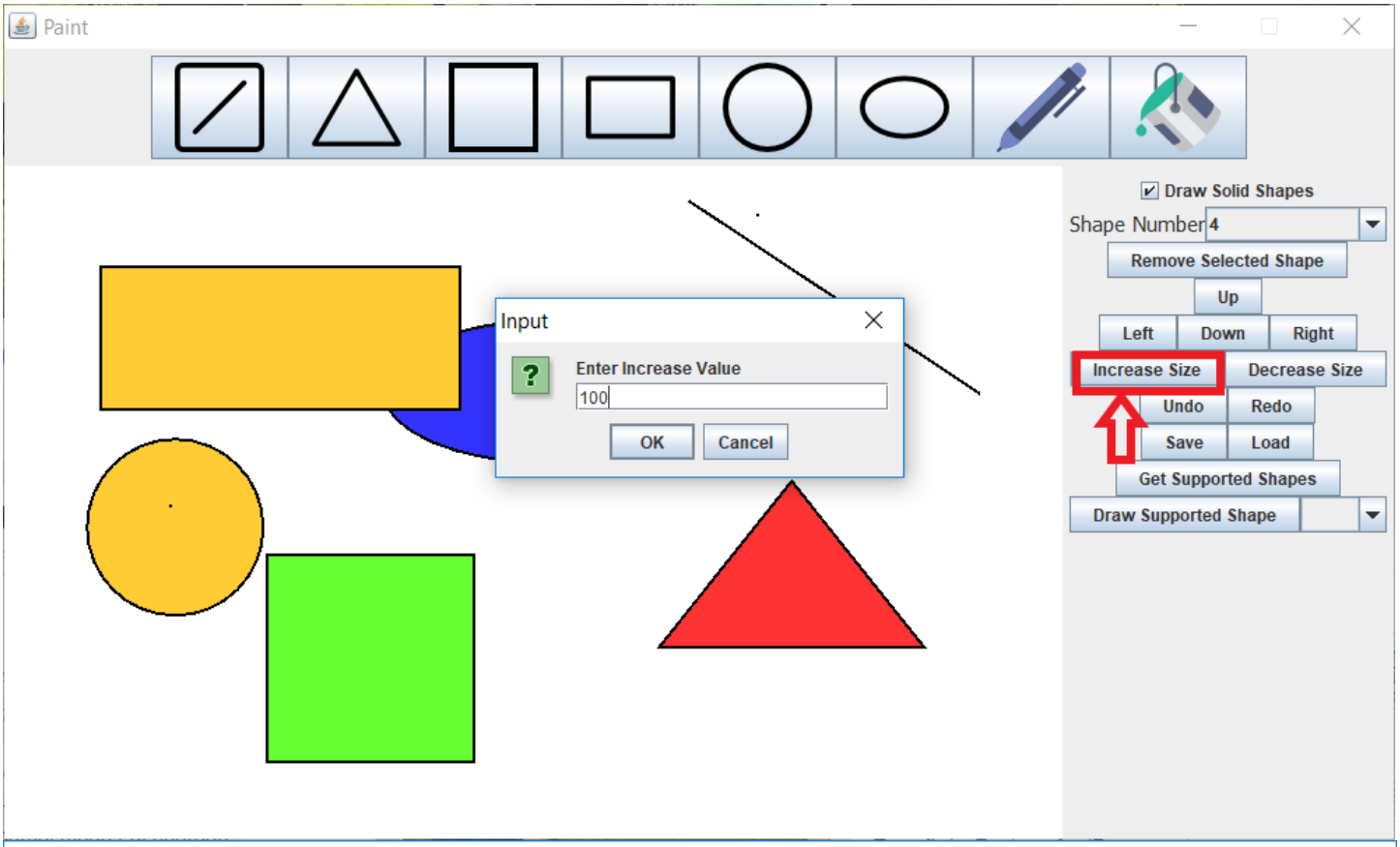
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Get Supported Shapes
Draw Supported Shape
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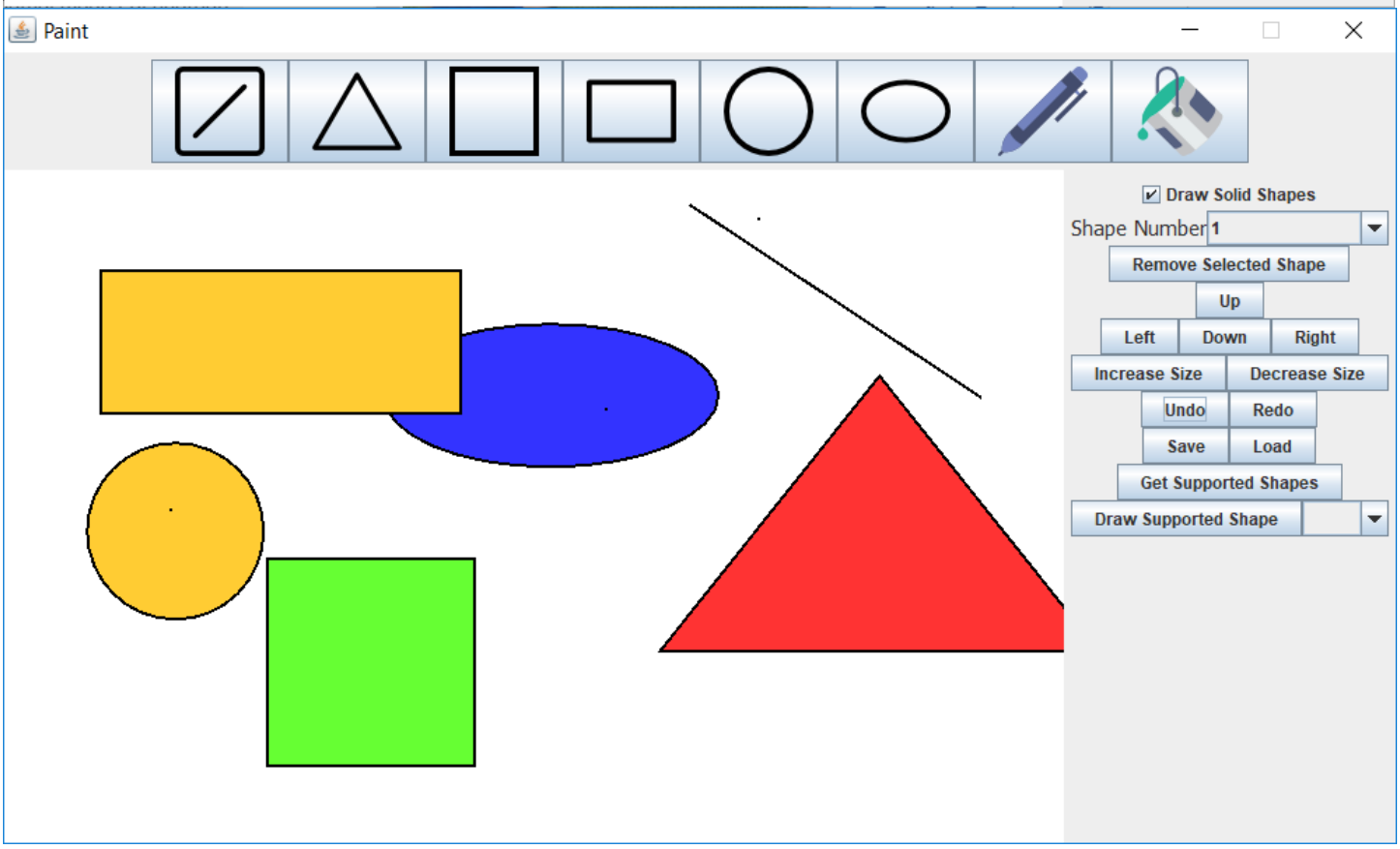
Paint
Draw Solid Shapes
Shape Number 1
Remove Selected Shape
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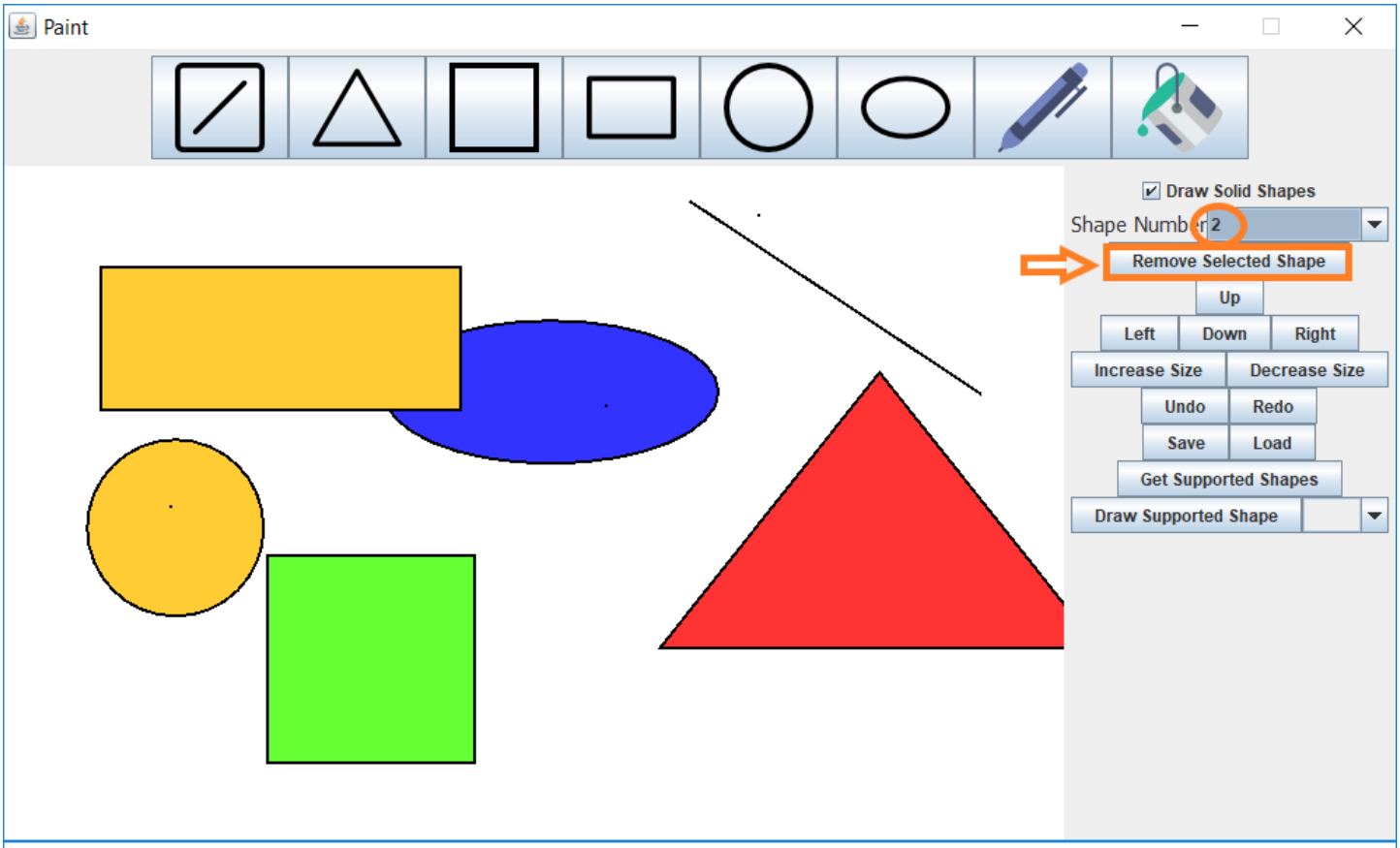
Load
Get Supported Shapes
Draw Supported Shape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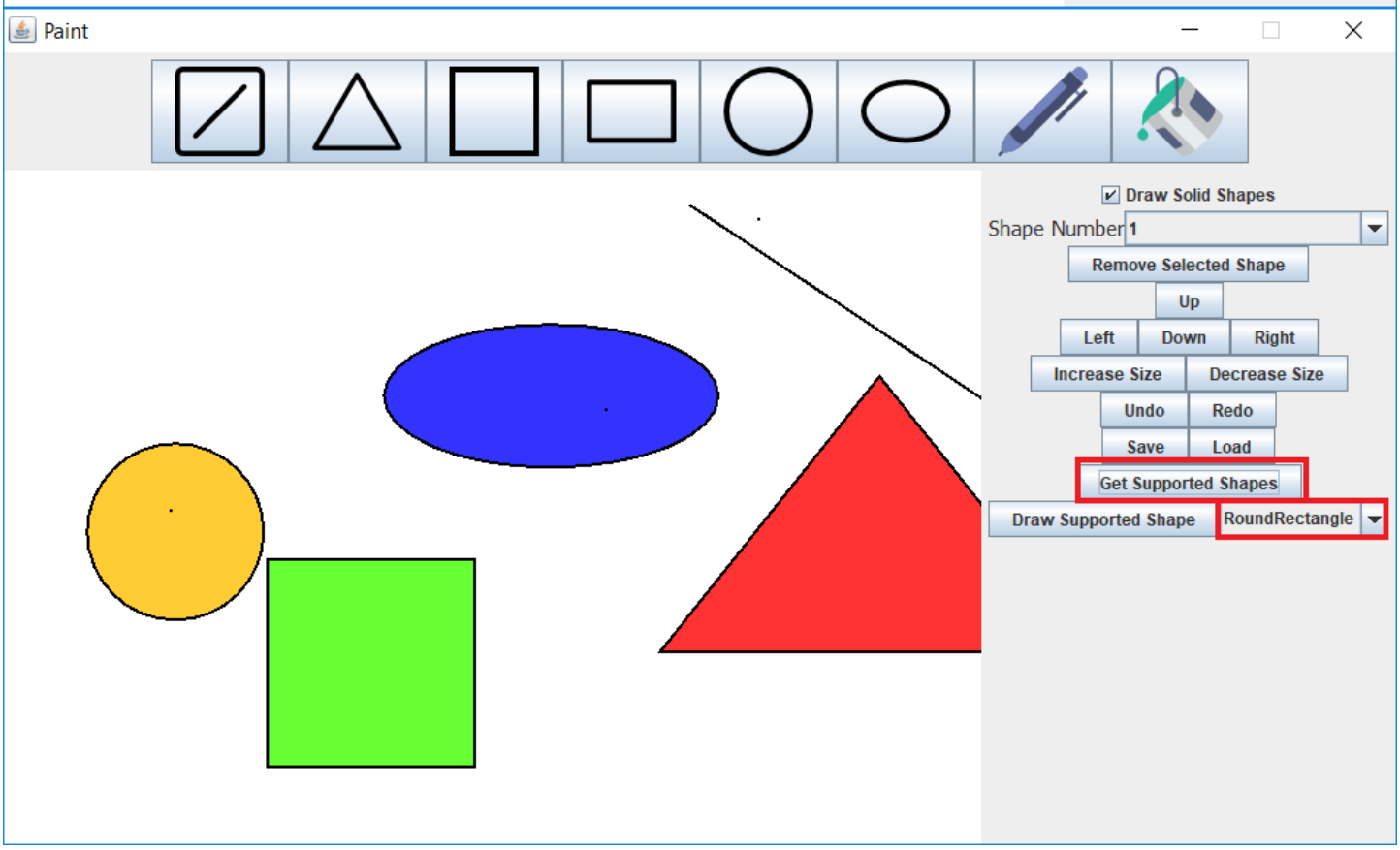
Get Supported Shapes
Draw Supported Shape


Paint
Draw Solid Shapes
Shape Number 1
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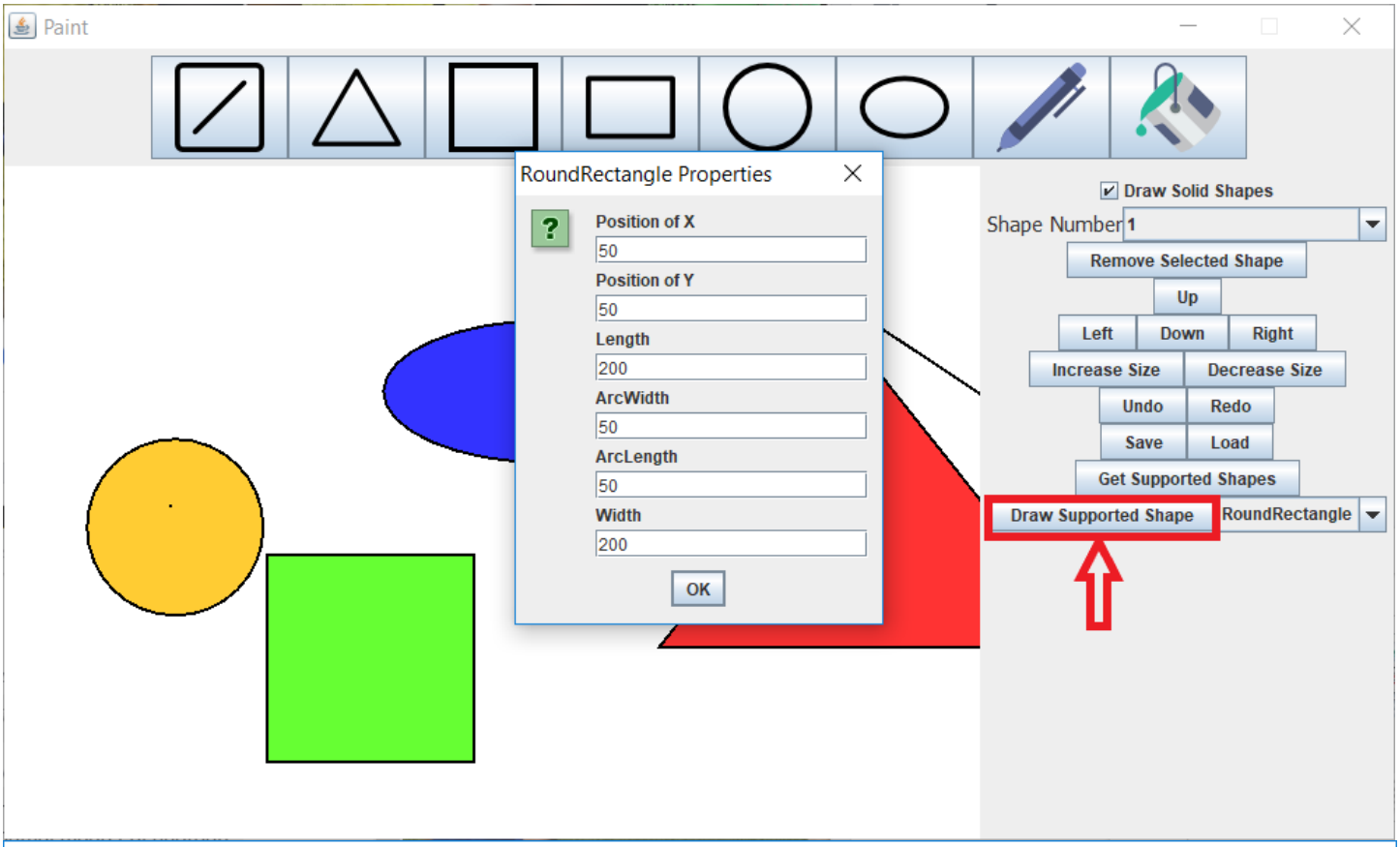
Load
Get Supported Shapes
Draw Supported Shape
RoundRectangle


Paint
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ArcWidth
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ArcLength
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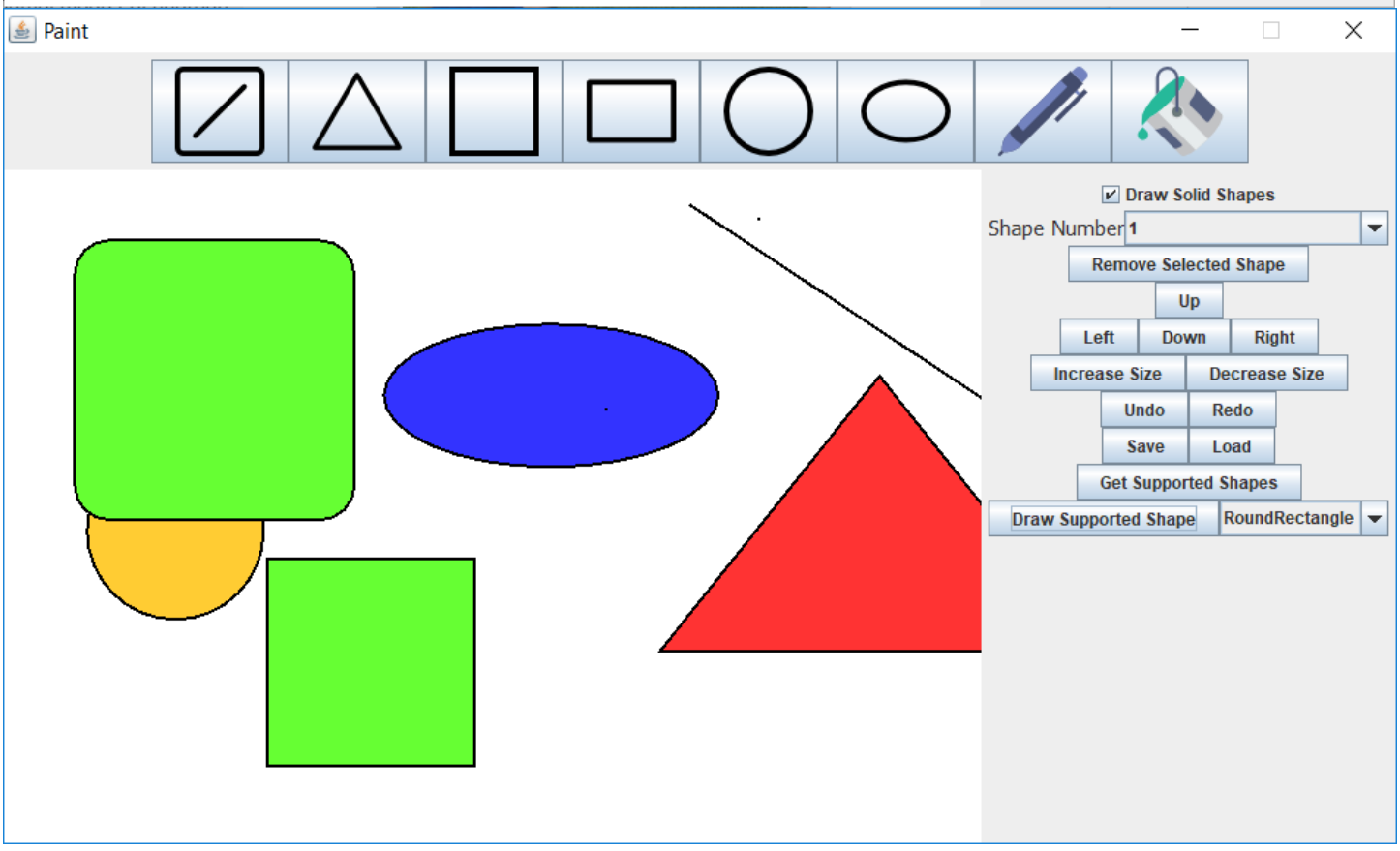
Get Supported Shapes
Draw Supported Shape
RoundRectangle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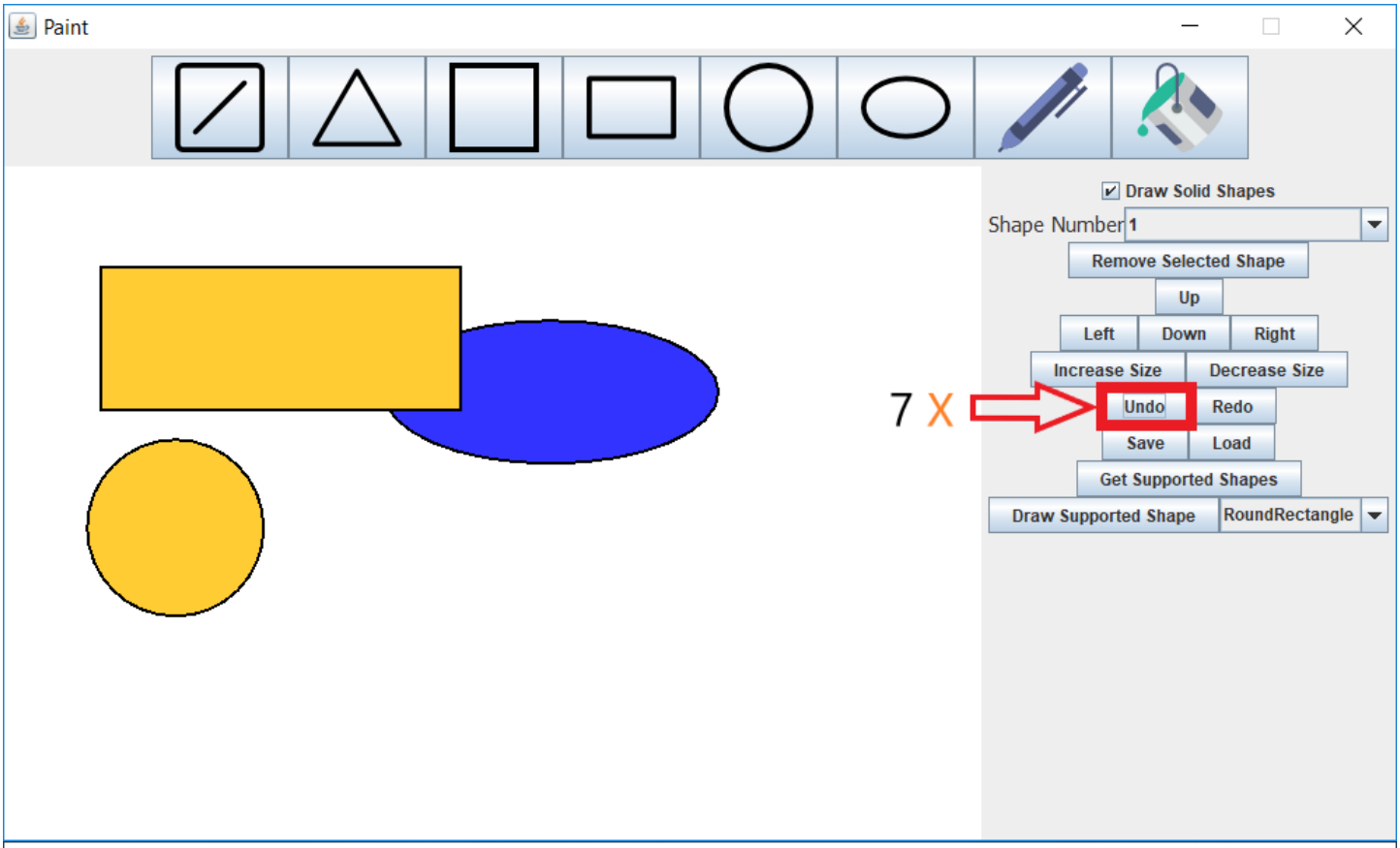
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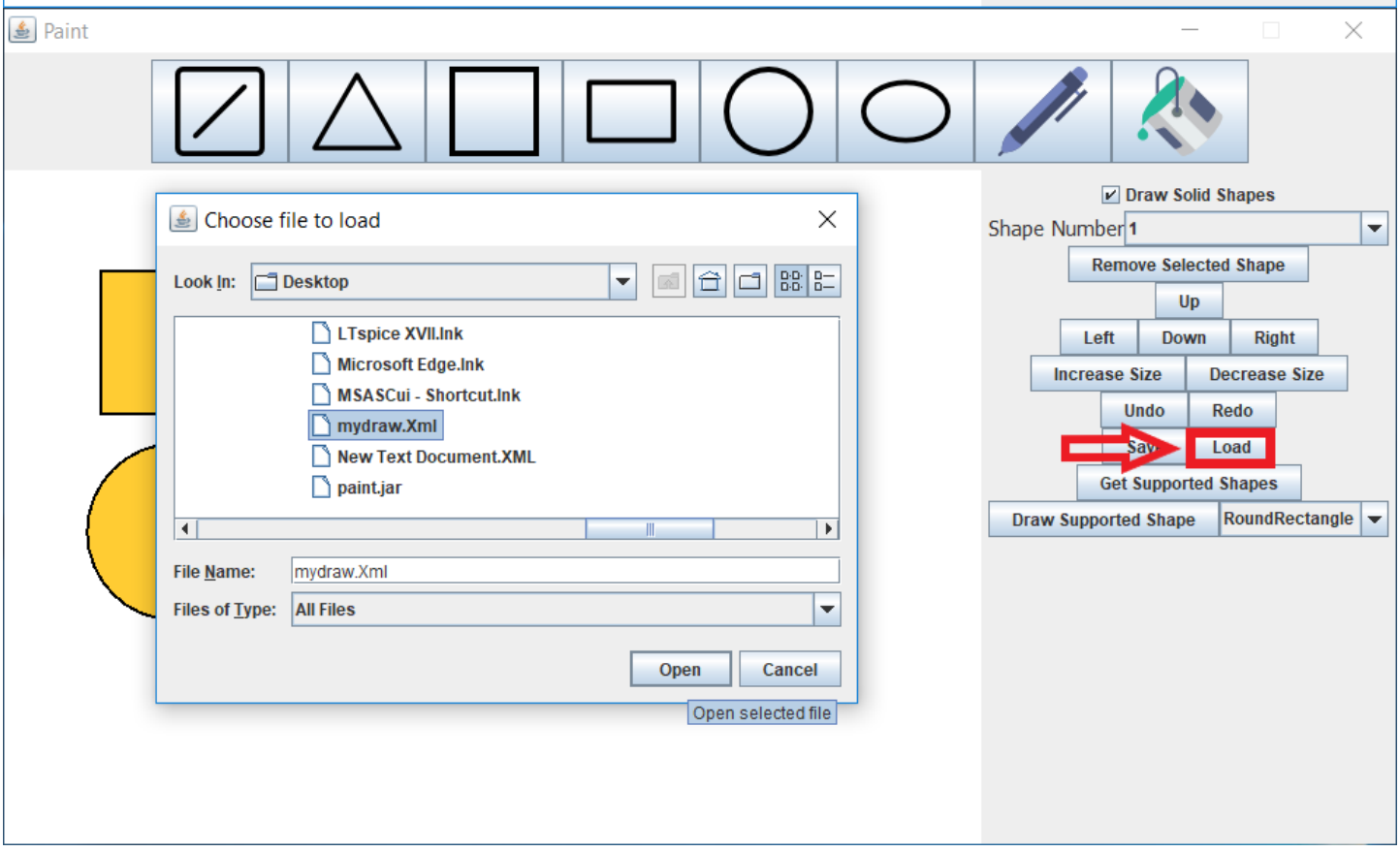
Paint
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Microsoft Edge.lnk
MSASCui - Shortcut.lnk
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Draw Solid Shapes
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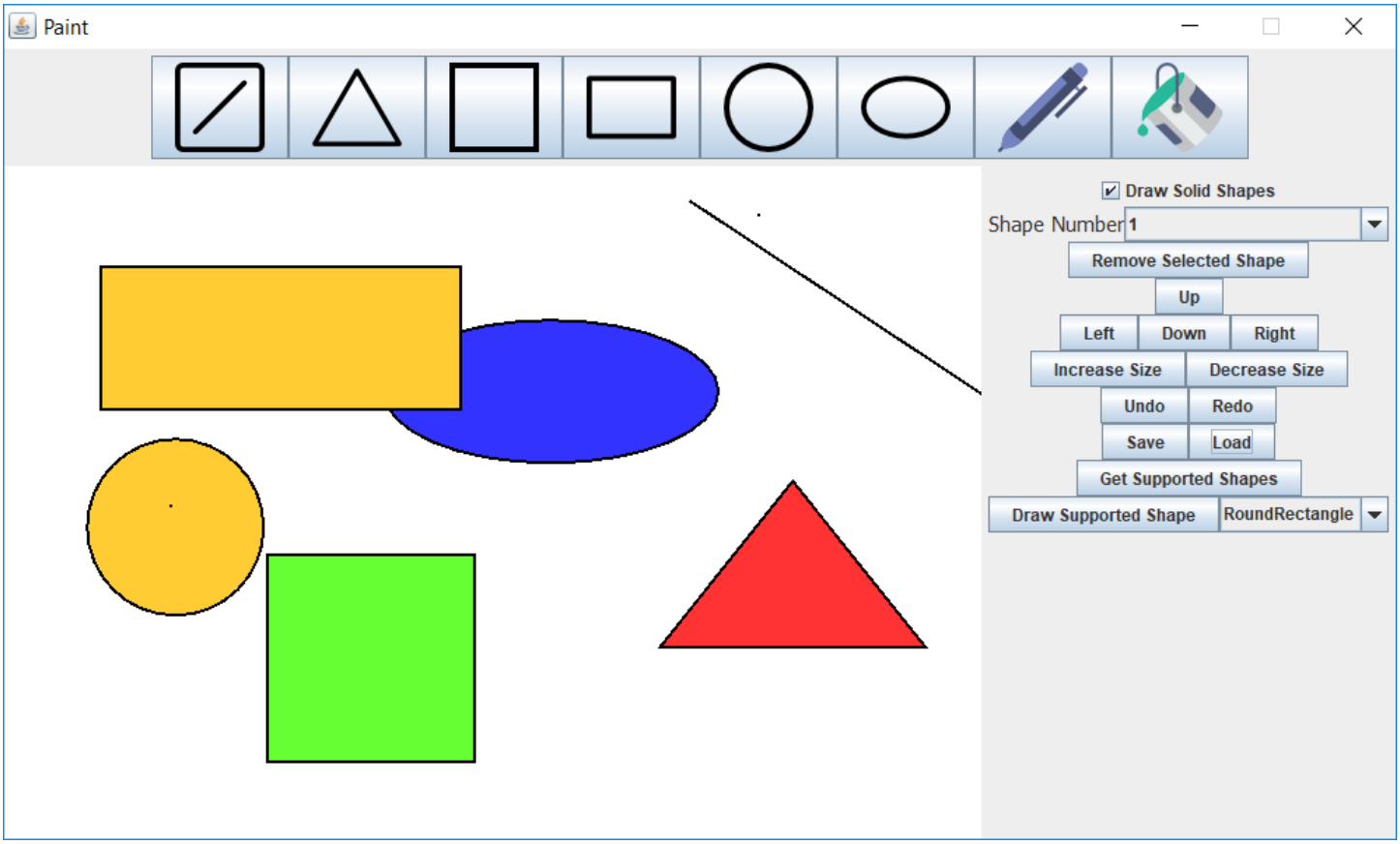
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Get Supported Shapes
Draw Supported Shape
RoundRectangle

Design Decisions

1) We have found that all shapes have the same implementation in every method except the draw method so we have decided to make an abstract class called ShapeImp to implement those methods and then extend it with sub classes for every shape to implement the draw method.
2) We decided to draw every shape with two points because it is easier to draw in the GUI with listeners.
3) We move and resize shapes using buttons , so we don't need to use more complicated listeners in GUI.
4) For external shapes (Supported Shapes) we have decided to take their properties with a Text Fields instead of mouse listeners because we don't know its properties.