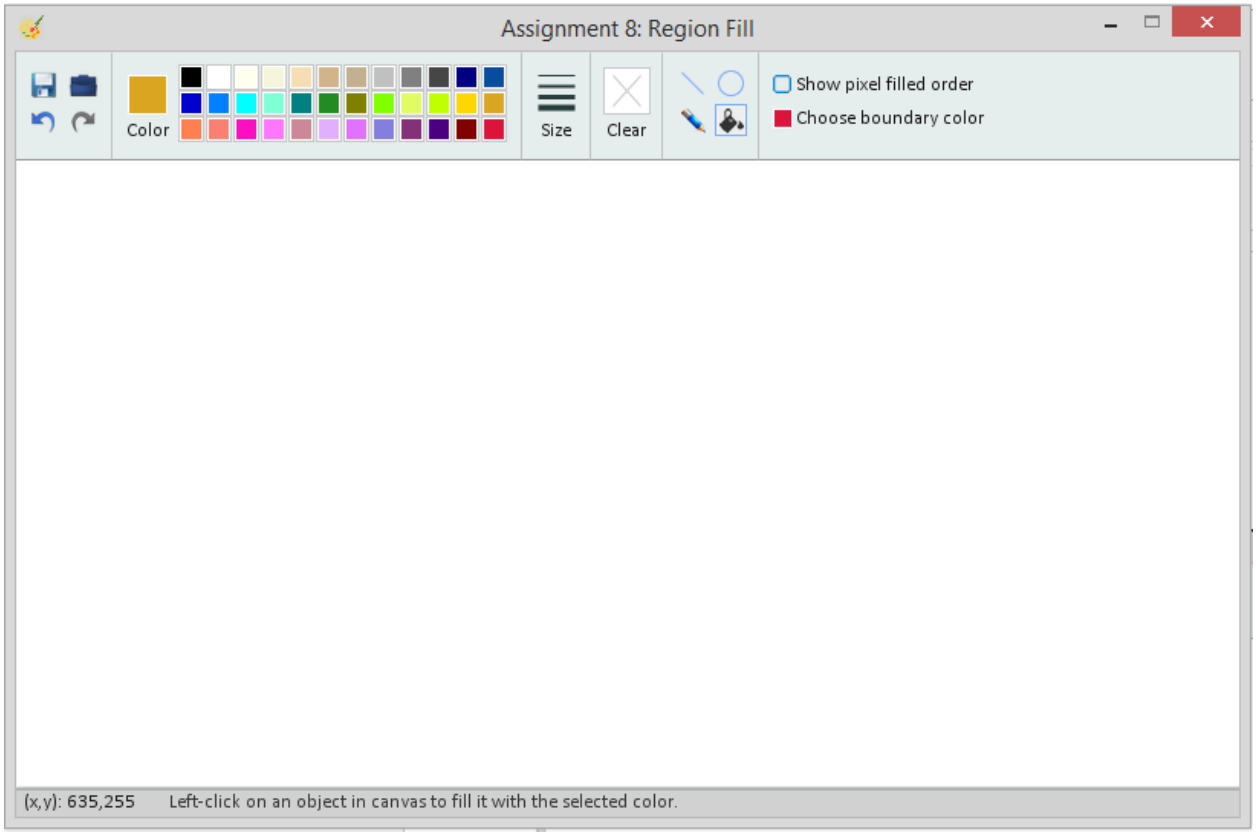
User Guide

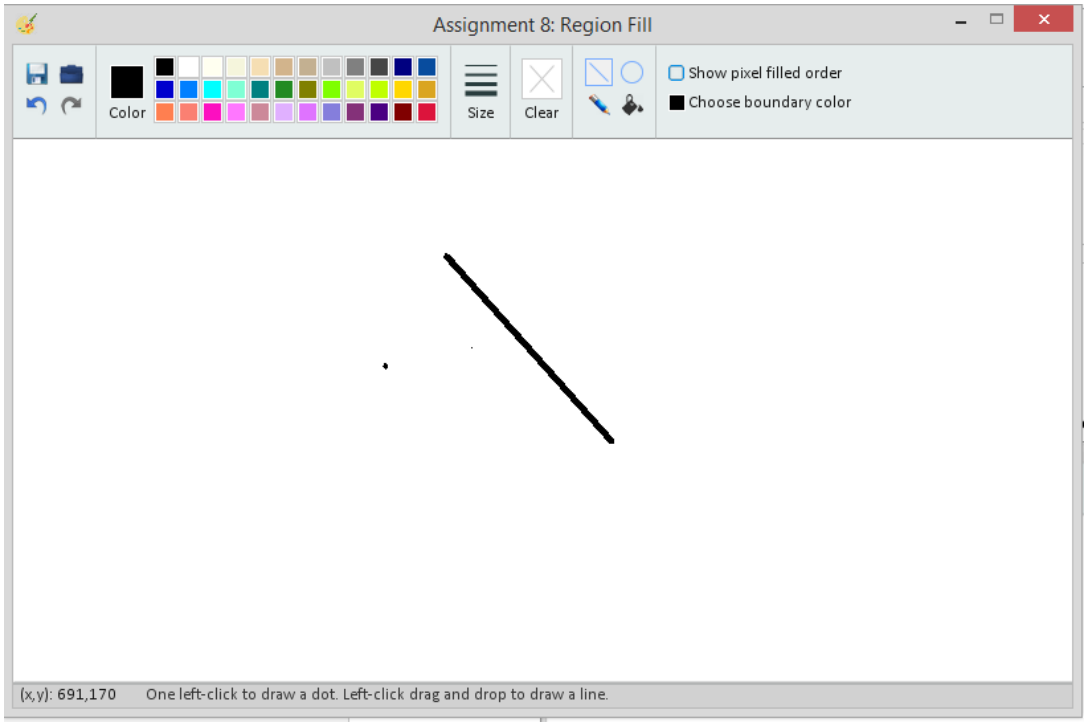
The interface of the program:



On the top of the application interface, there is a ribbon that divides the features of the application into several groups, which are open/save and undo/redo, color palette, size to control the line size, clear canvas, toolbox and fill tool options. The white area in the application is the canvas to draw dots, lines, circle and any other different shape we want and to do region fill for our drawing. On the bottom of the application interface, there is a status bar which give information/instruction that may help the user to use the application.

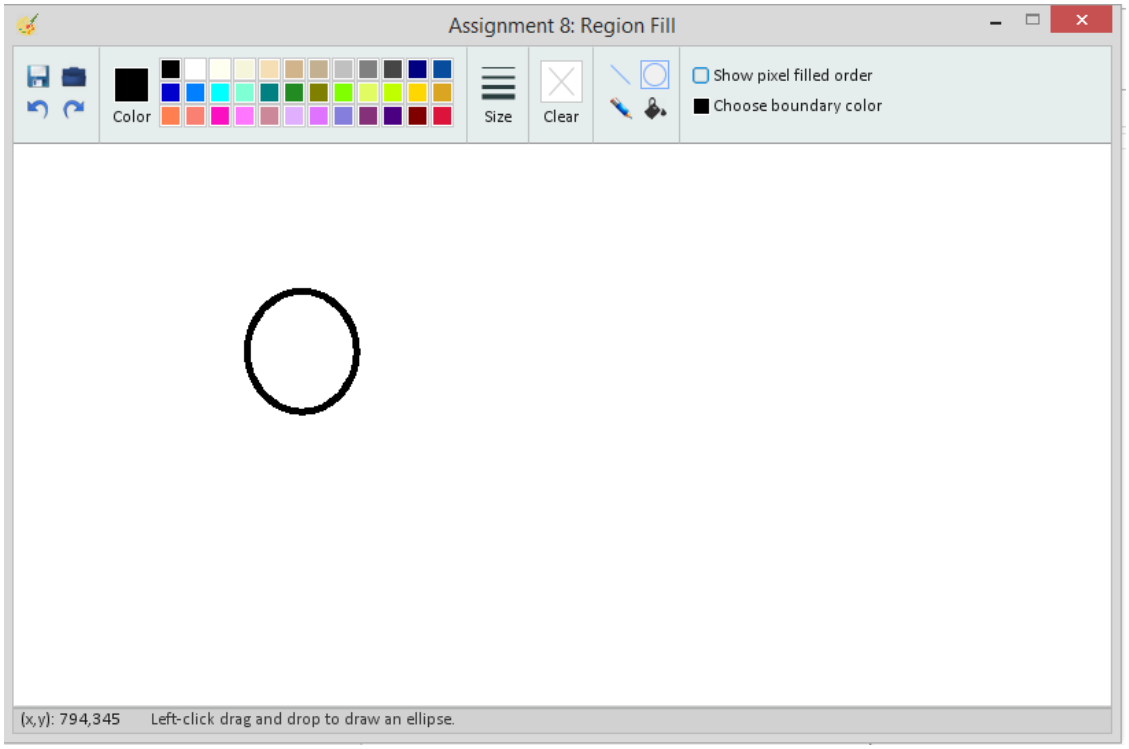
Drawing Dots/Lines

To draw a line, we can use the same tool as drawing a dot. Click on any position in the canvas where we want to start drawing a line, drag and drop on any position we want to finish drawing a line. When drawing the line, we can choose any color that is provided in the color palette by clicking it. The following picture shows the example result of drawing lines.



Drawing circle.

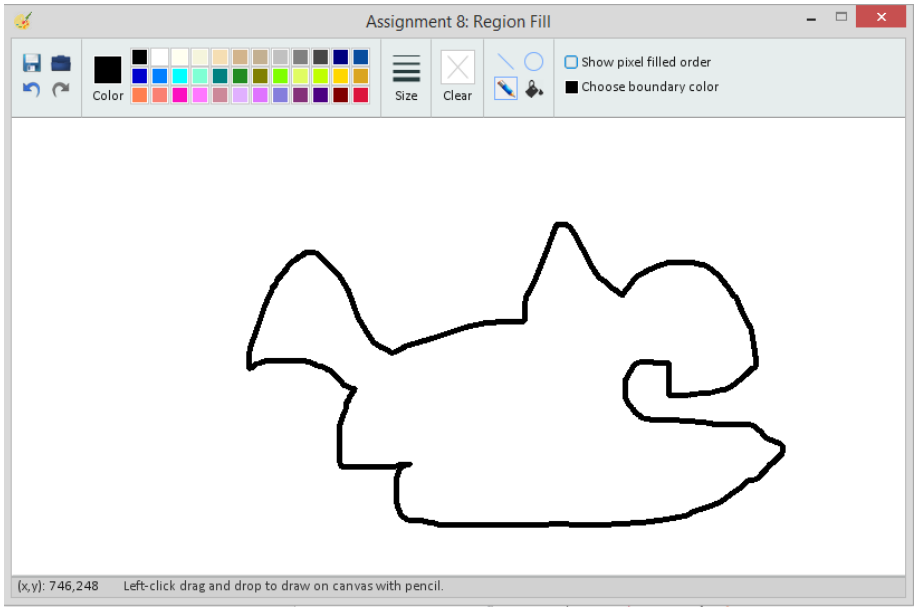
To draw a circle, choose circle tool in the toolbox then do drag and drop in the canvas..



The following picture shows the example of the result of drawing a circle.

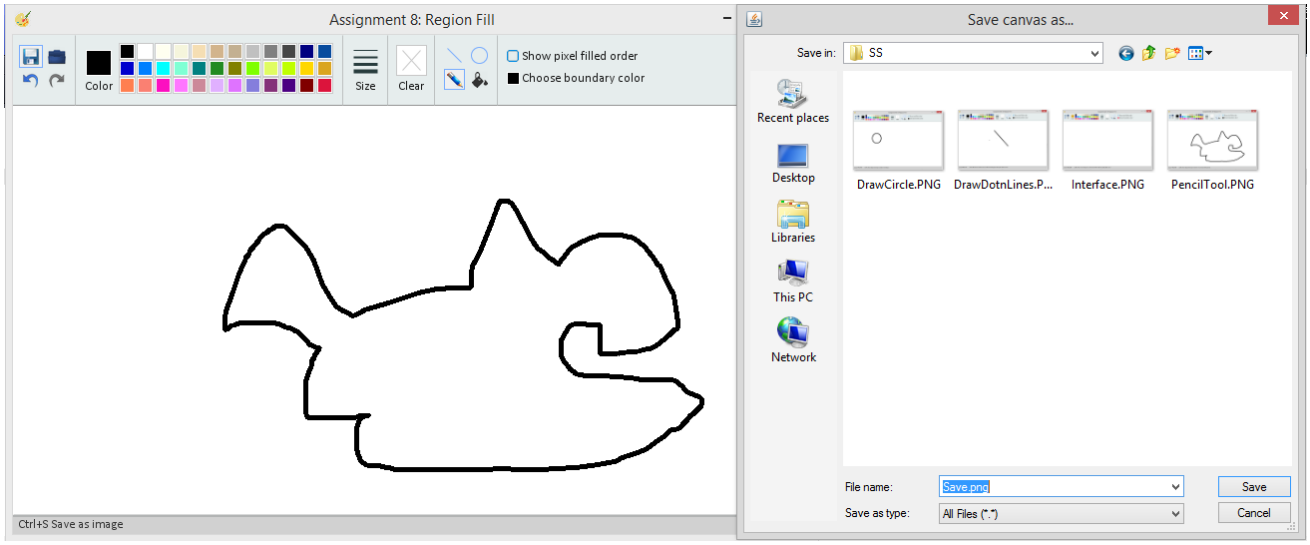
Draw using pencil tool

We can draw free shapes using pencil tool. To do that, click pencil tool menu in the toolbox. Click drag and drop on canvas area. The following picture shows the example of drawing free shapes using pencil tool.



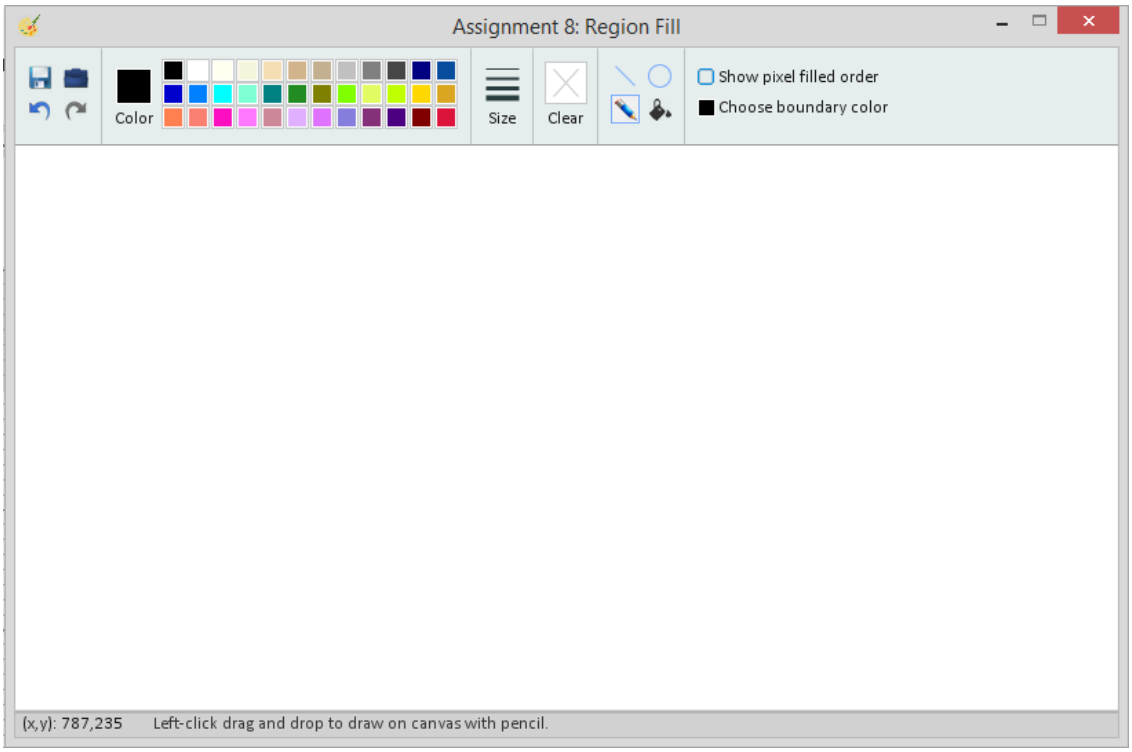
Saving picture to a File

To save picture on the canvas into a file, choose save as button.



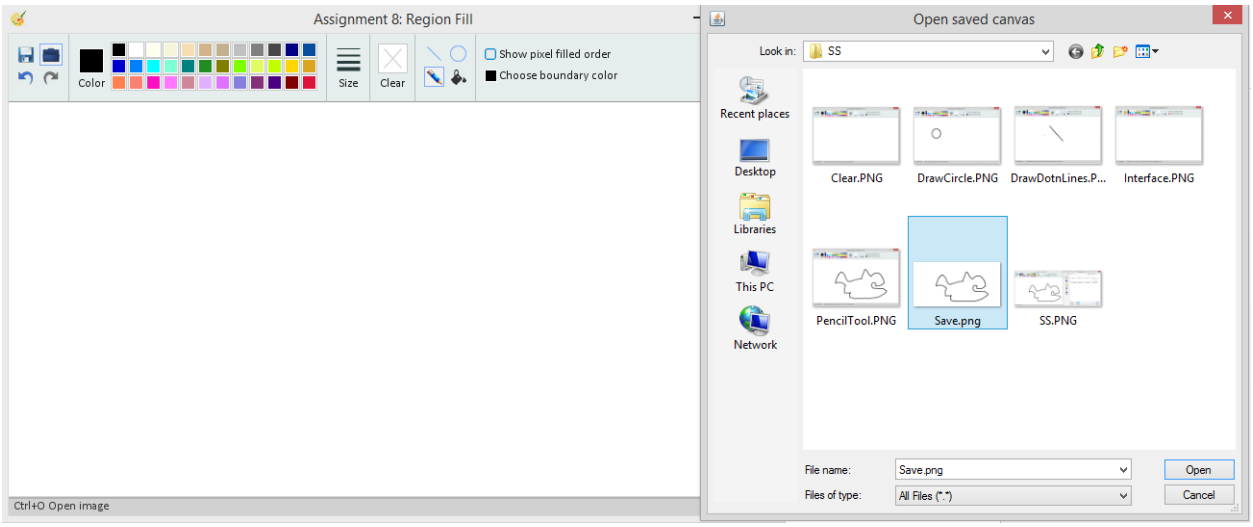
Clear Canvas

To clear the canvas, click the clear button.

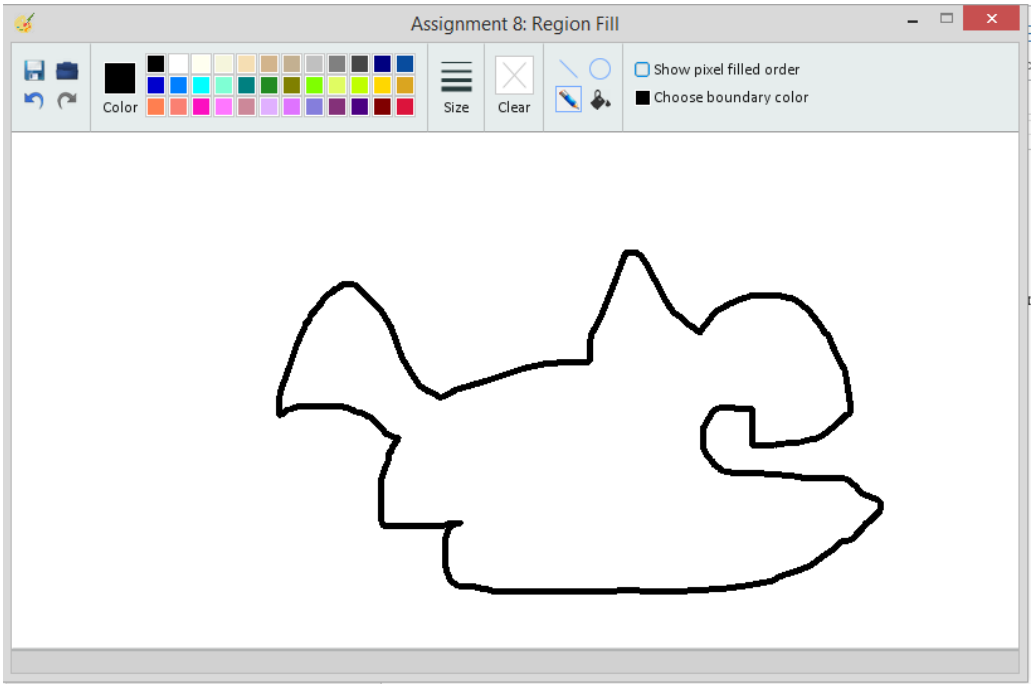


Open Saved picture

To open saved picture, click open button.



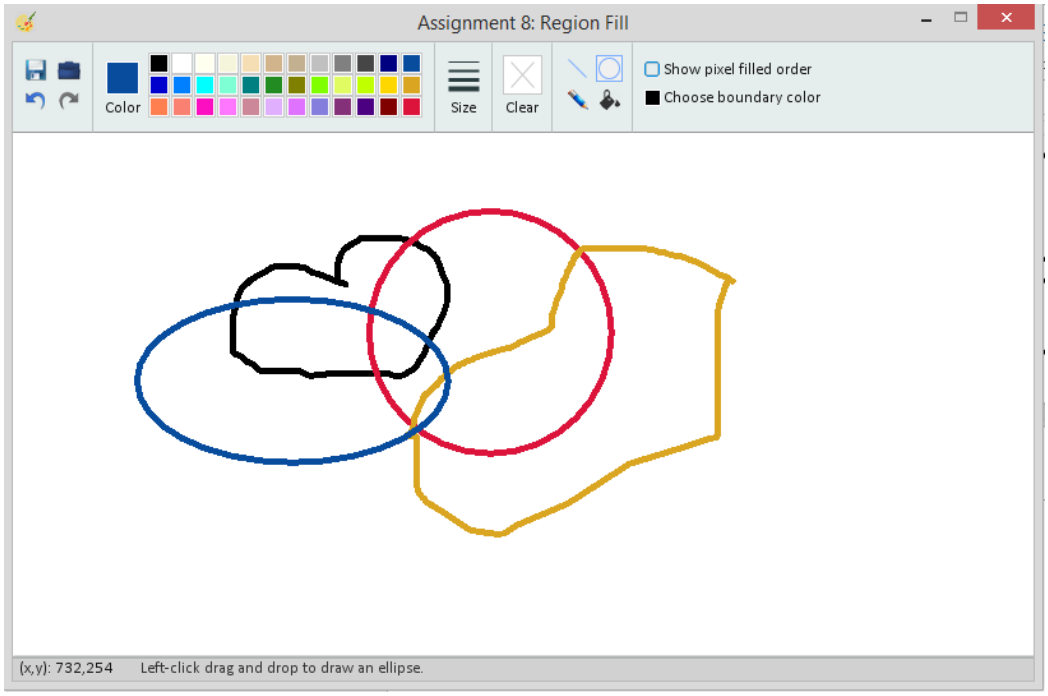
As an example, we load a file that we already save before so the result will be:



Region fill

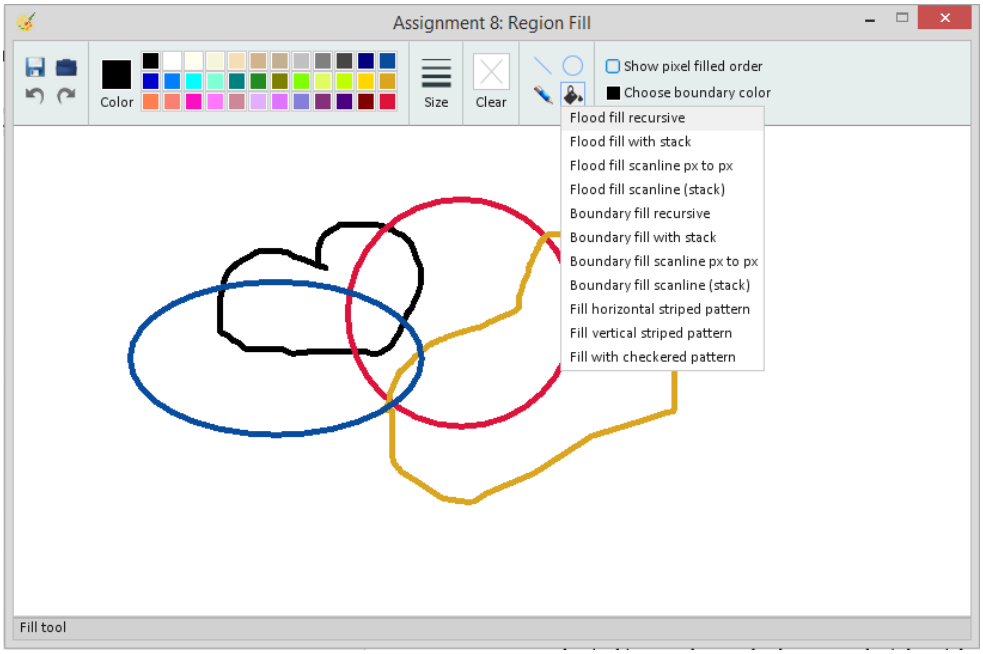
Before doing region fill, first we must draw some shape that we want to fill afterwards.

We just draw some random shape like:

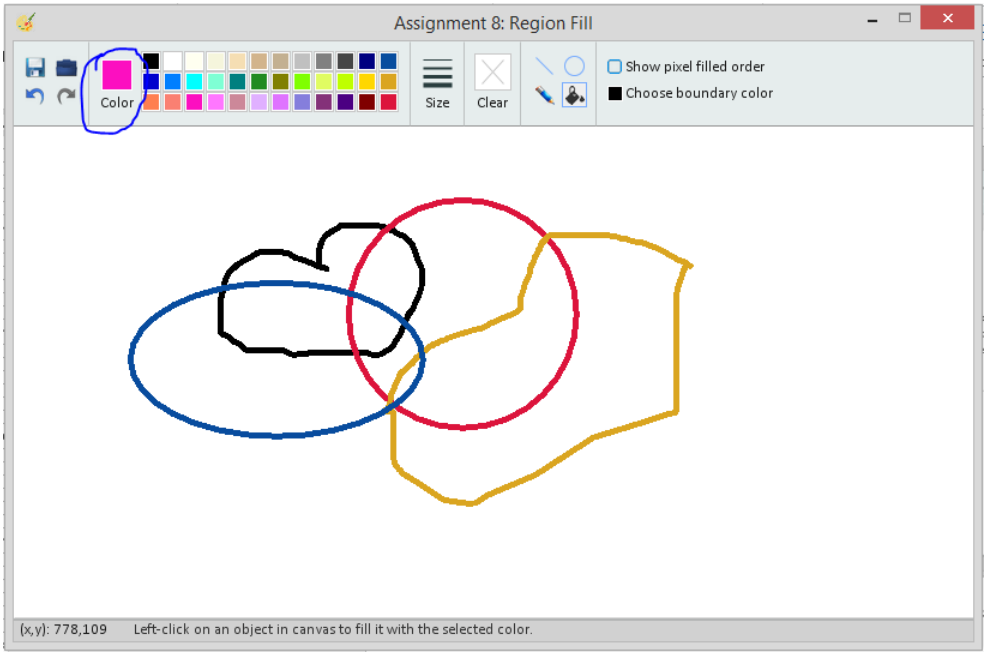


1. Flood Fill

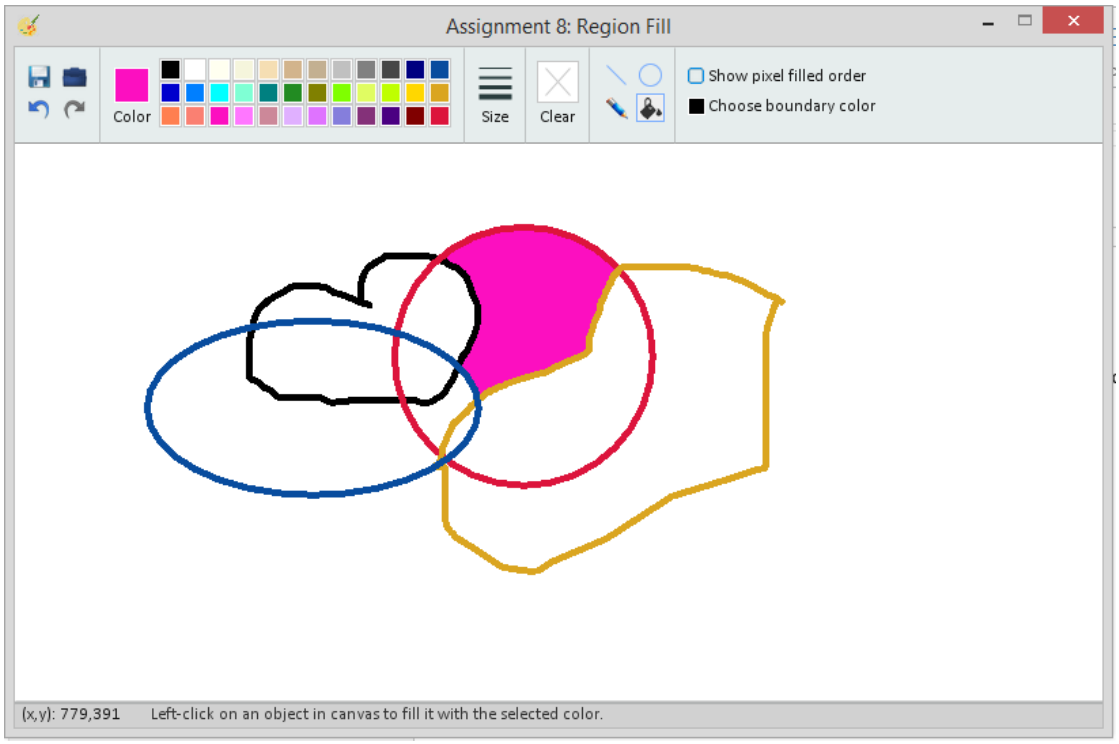
To do flood fill using recursive methods, firstly after we draw the picture, the next thing we need to do is to choose flood fill recursive methods by choosing fill tool button.



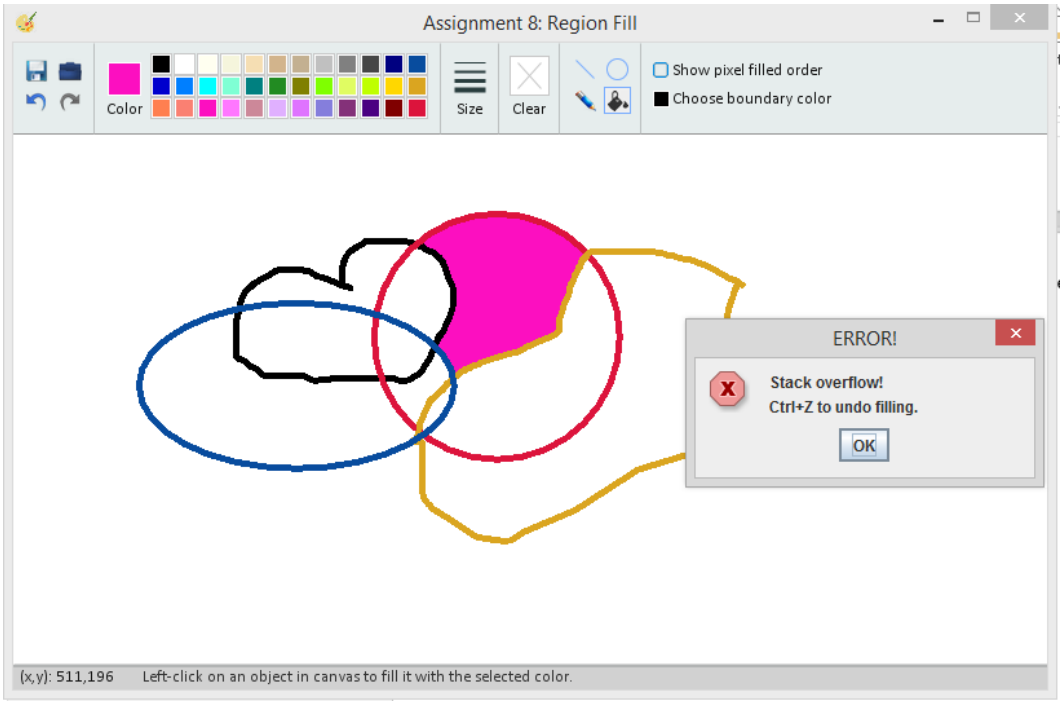
After choosing the flood fill recursive methods, the next step is to set the target color, in this example, we take the target color is hot pink.



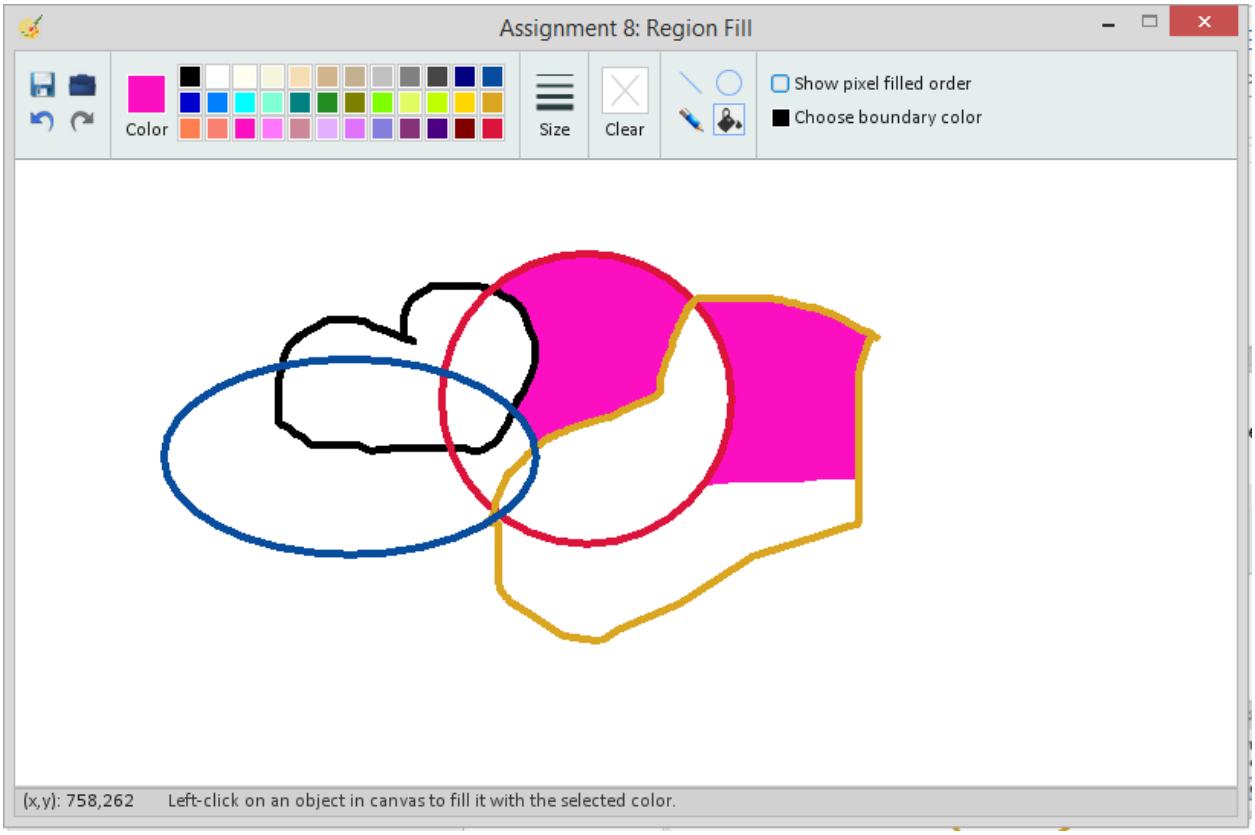
Next, we click the region that we want to fill with the target color, in here for example we just take the top most region of the drawing that we have made. Then we click on that region so now the region is filled by the target color.



Stack overflow might happen when we do flood fill using recursive method. The program will show a message if stack overflow happen.



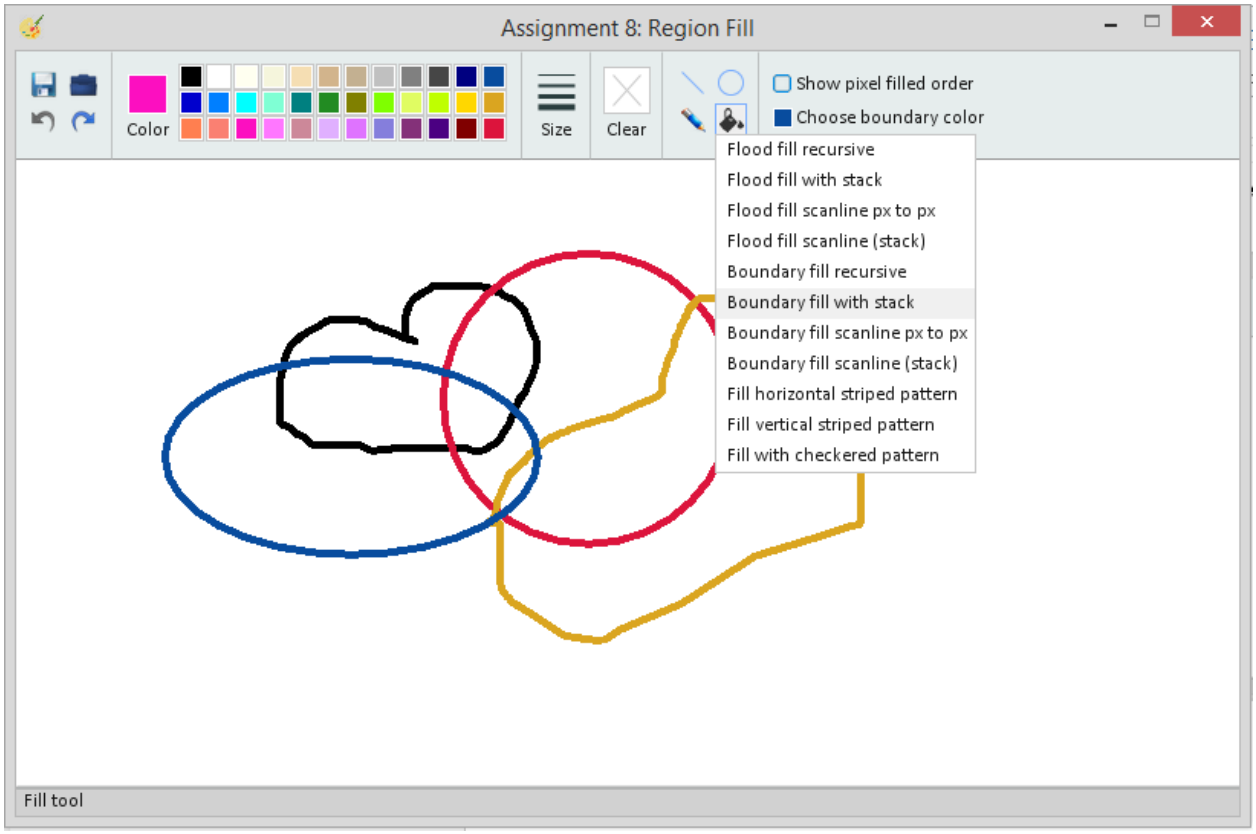
It will result the incomplete filling. Press ctrl + z or undo button to undo the filling.



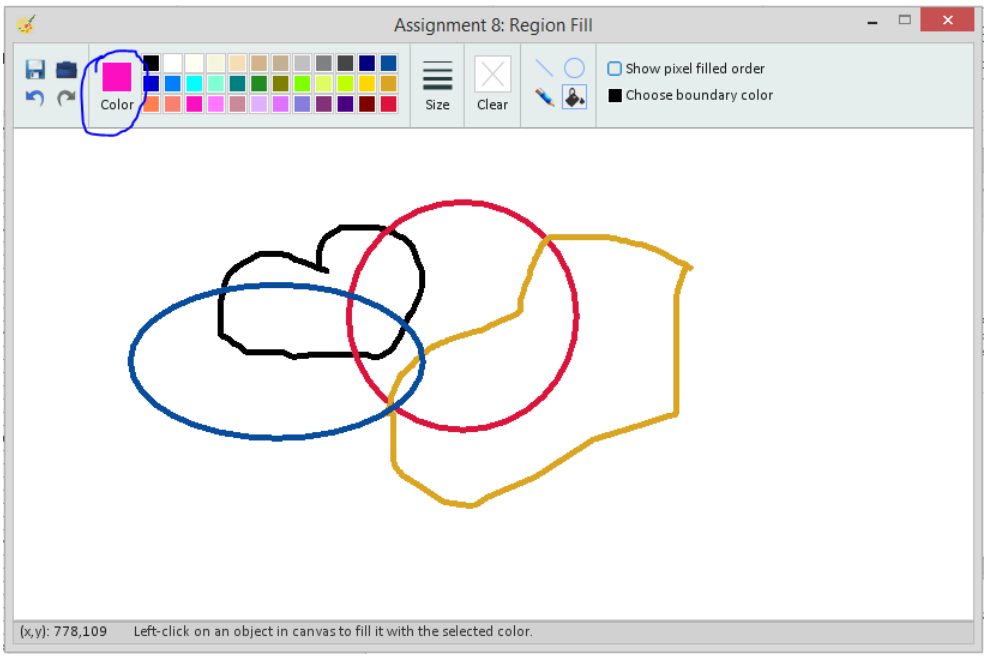
For other flood fill methods (flood fill with stack, flood fill with scanline pixel to pixel and flood fill with scanline(stack)) we do the same methods with flood fill recursive. The only different is when choosing the flood fill methods, when doing fill using flood fill stack, we choose in the fill tool “flood fill with stack”, fill using flood fill scanlinepixel to pixel, we choose “flood fill scanline px to px” and fill using flood fill scanline stack, we choose “flood fill scanline(stack)”.

2. Boundary fill.

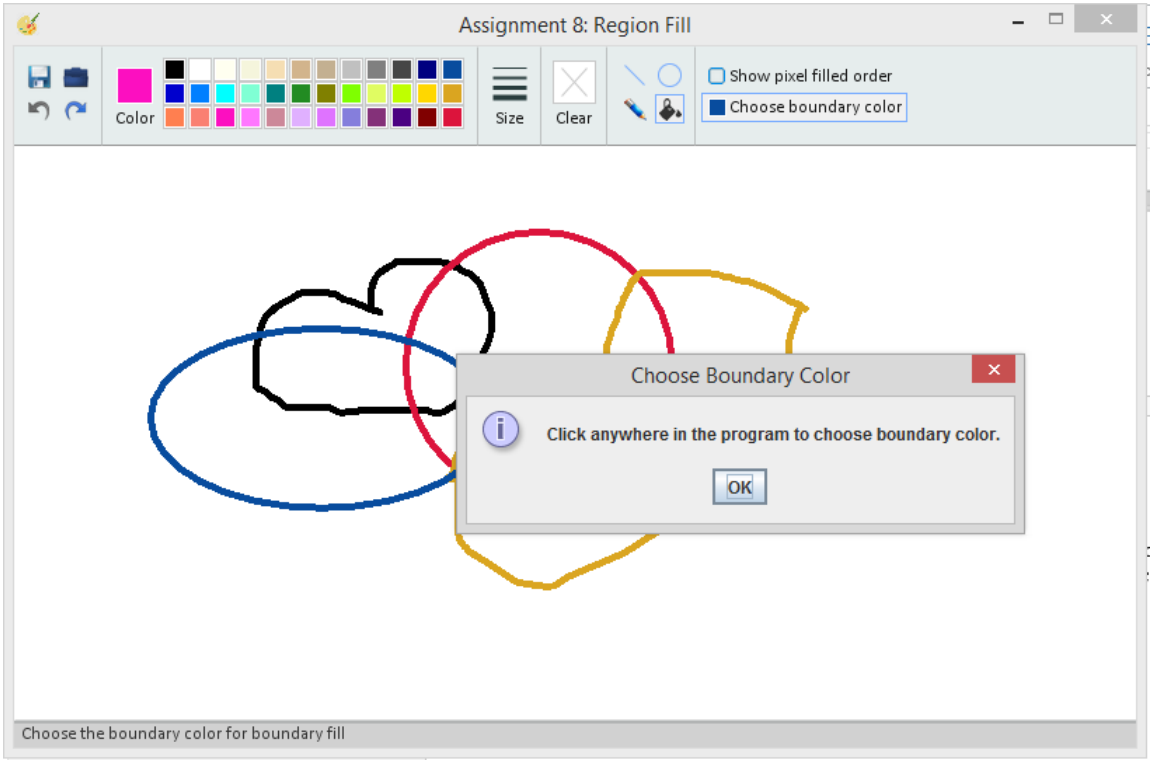
   To do boundary fill using stack methods, firstly after we draw the picture, the next thing we need to do is to choose boundary fill stack methods by choosing fill tool button.

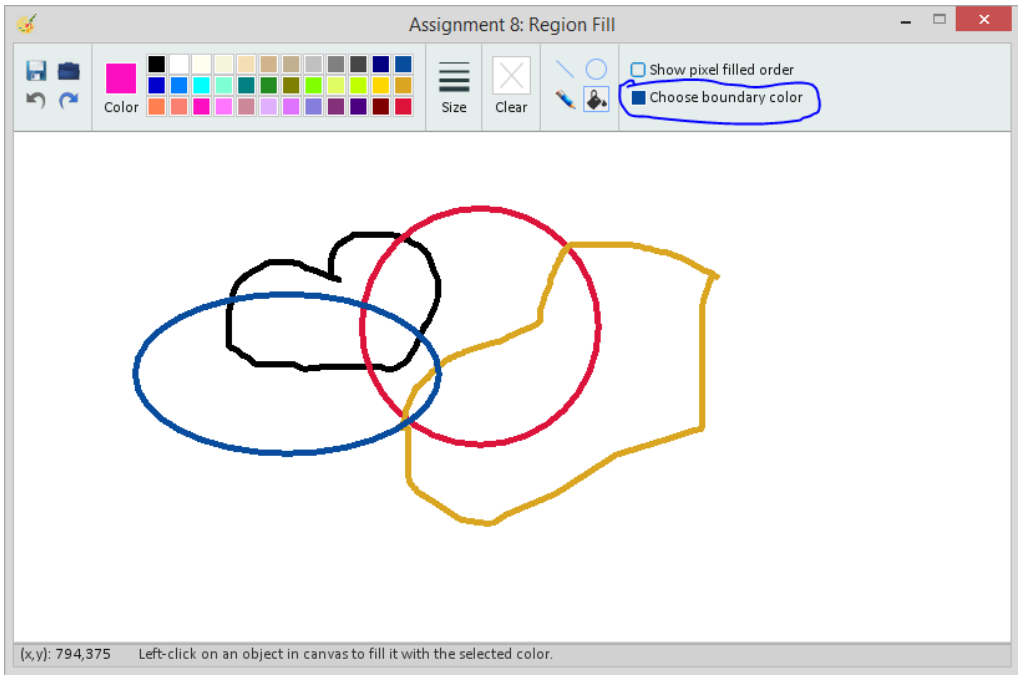


After choosing the boundary fill stack methods, the next step is to set the target color, in this example, we take the target color is hot pink.

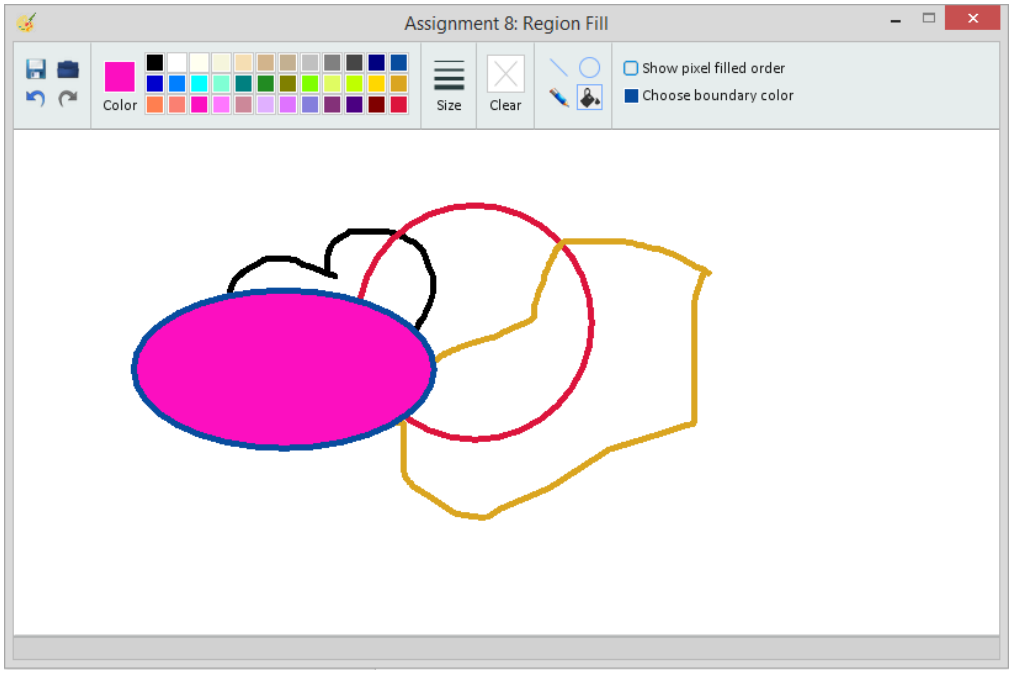


After choosing the target color, next we must set the boundary color by clicking “choose boundary color” option and then after that, we choose the color for the boundary color. In here we choose the boundary color of the blue oval.

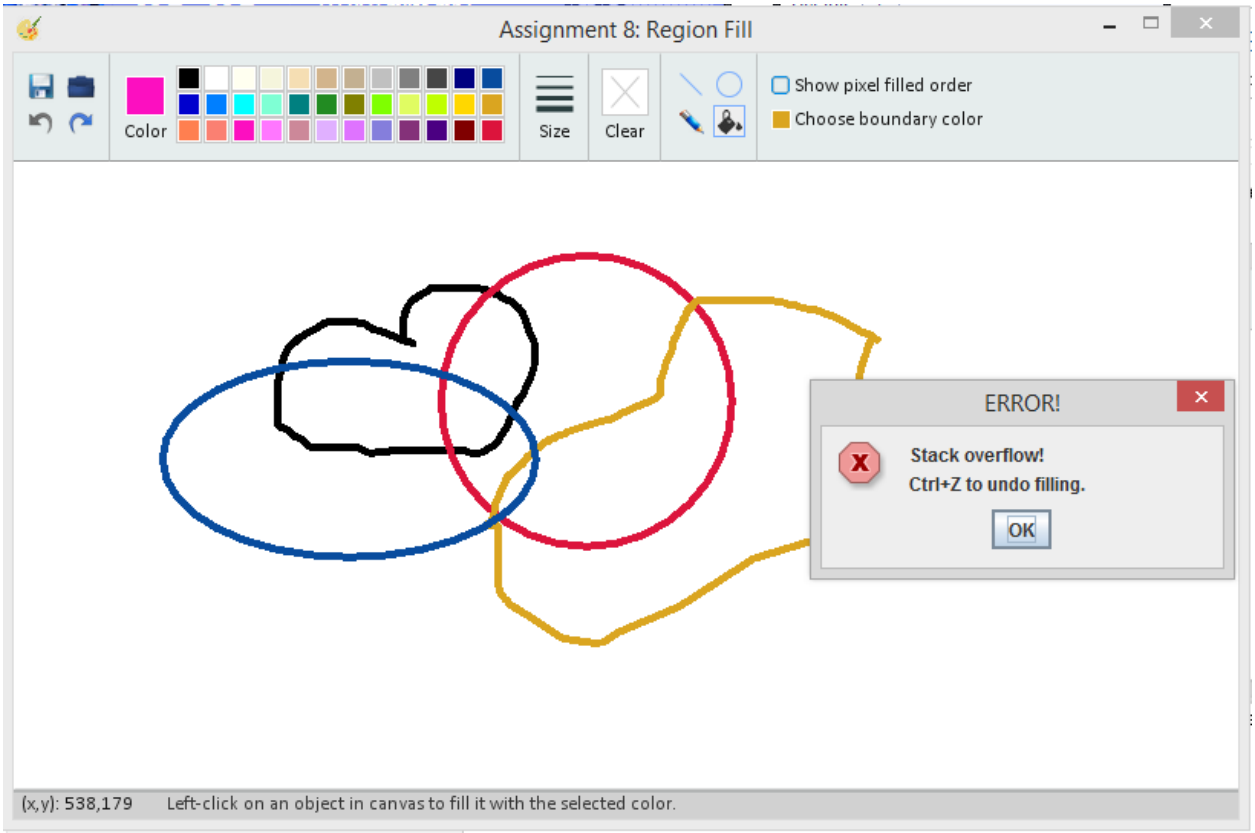


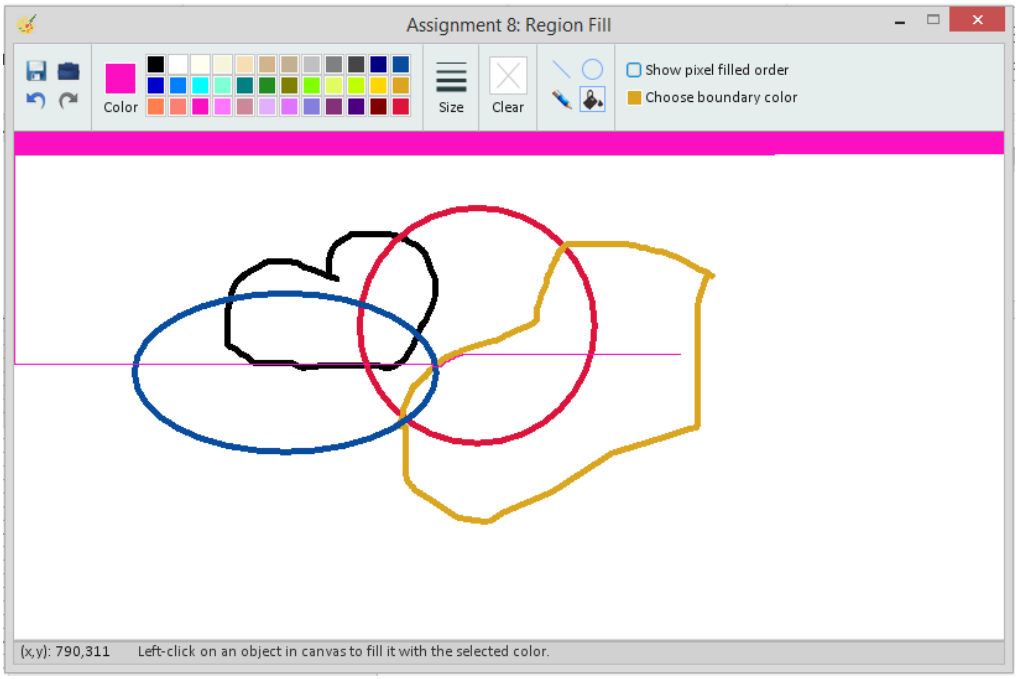


After we set the target color and the boundary color, next we choose the region with blue color.



Stack overflow might happen when we do boundary fill using recursive method. The program will show a message if stack overflow happen.

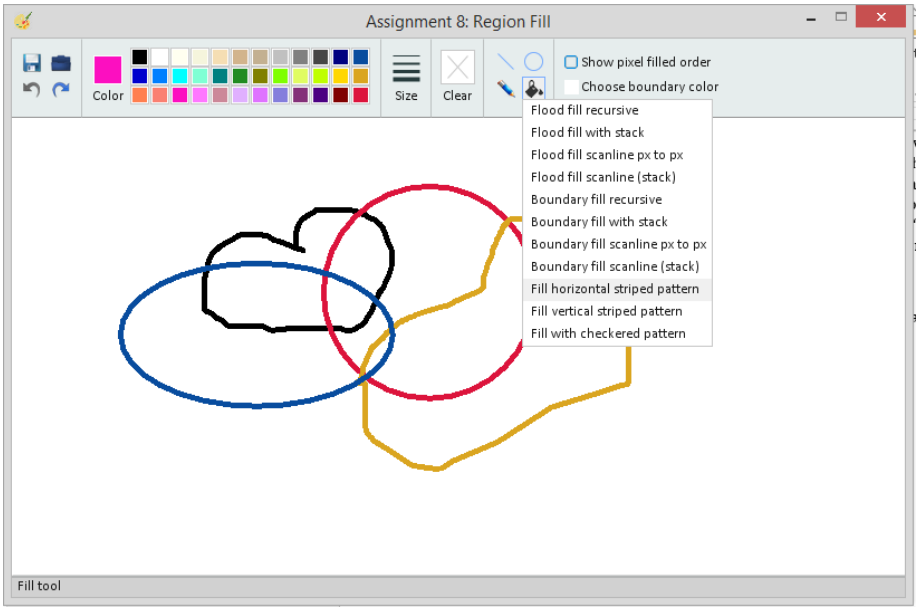




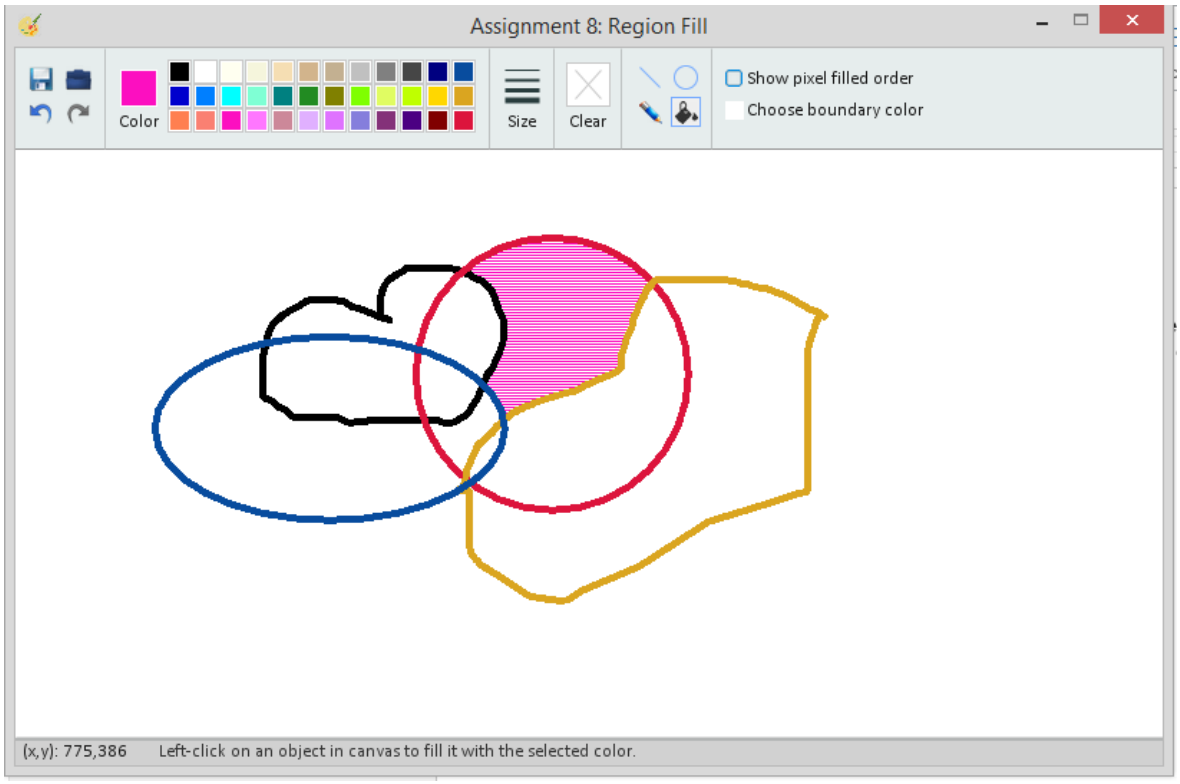
For other boundary fill methods (boundary fill with recursive, boundary fill with scanline pixel to pixel and boundary fill with scanline(stack)) we do the same methods with boundary fill stack. The only different is when choosing the boundary fill methods, when doing fill using boundary fill recursive, we choose in the fill tool "boundary fill with recursive", fill using boundary fill scanline pixel to pixel, we choose "boundary fill scanline px to px" and fill using boundary fill scanline stack, we choose "boundary fill scanline(stack)".

3. Fill horizontal stripped patterns

   To do fill horizontal stripped patterns, firstly after we draw the picture, the next thing we need to do is to choose fill horizontal stripped patterns by choosing fill tool button. In here also we set the target color to hot pink.

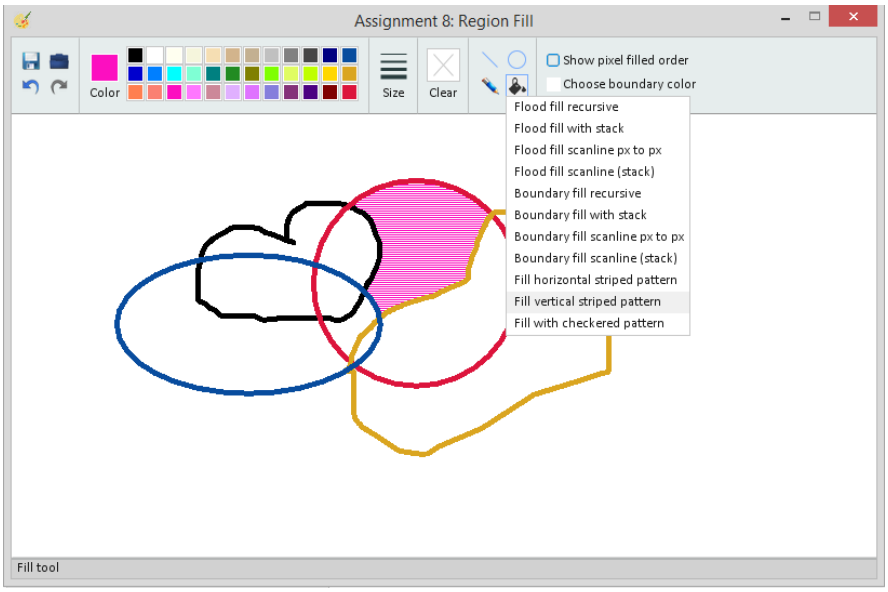


Next, we click the region that we want to fill with the target color, in here for example we just take the top most region of the drawing that we have made. Then we click on that region so now the region is filled by the target color.

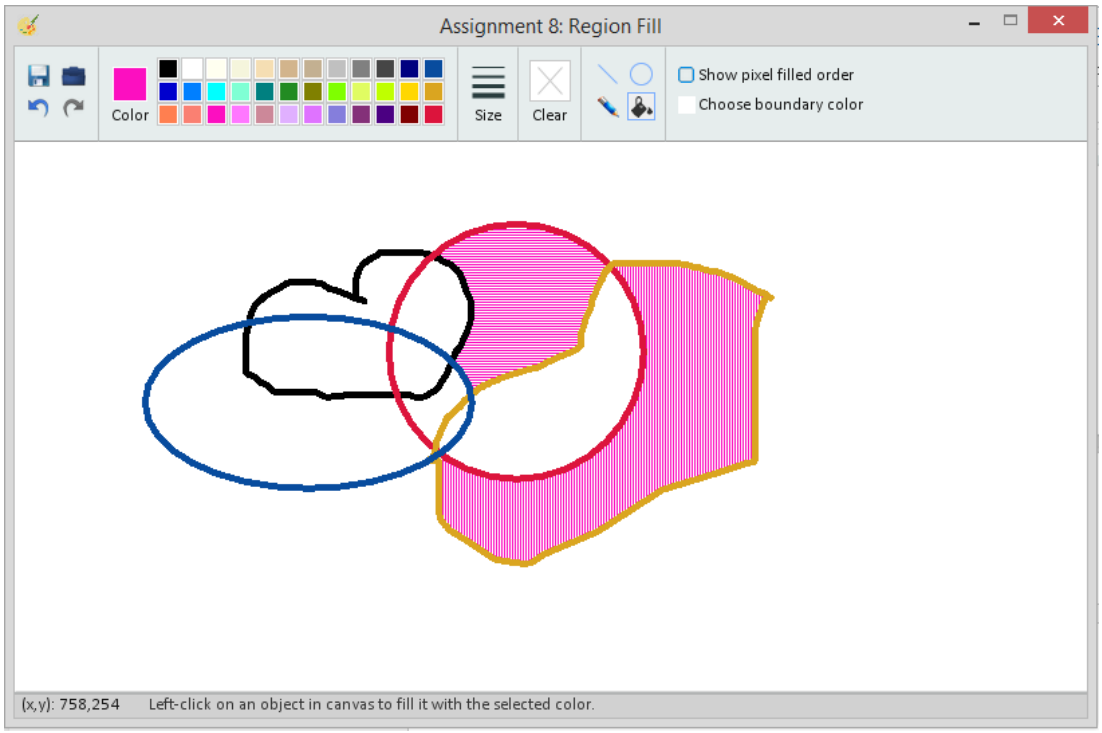


4. Fill vertical stripped paterns.

   To do fill vertical stripped patterns, firstly after we draw the picture, the next thing we need to do is to choose fill vertical stripped patterns by choosing fill tool button. In here also we set the target color to hot pink.

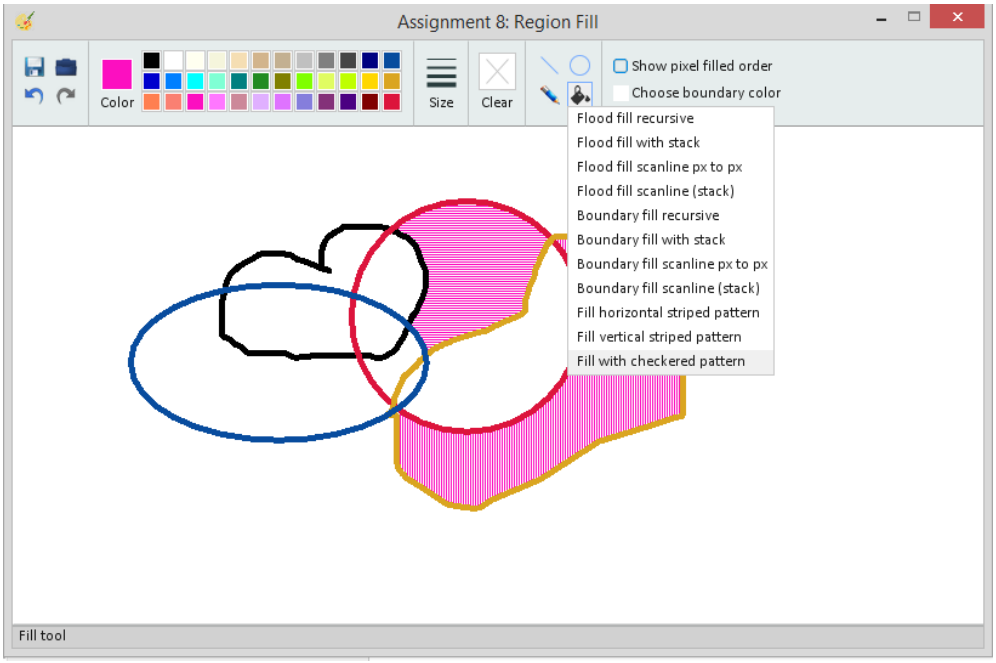


Next, we click the region that we want to fill with the target color, in here for example we just take the right most region of the drawing that we have made. Then we click on that region so now the region is filled by the target color.

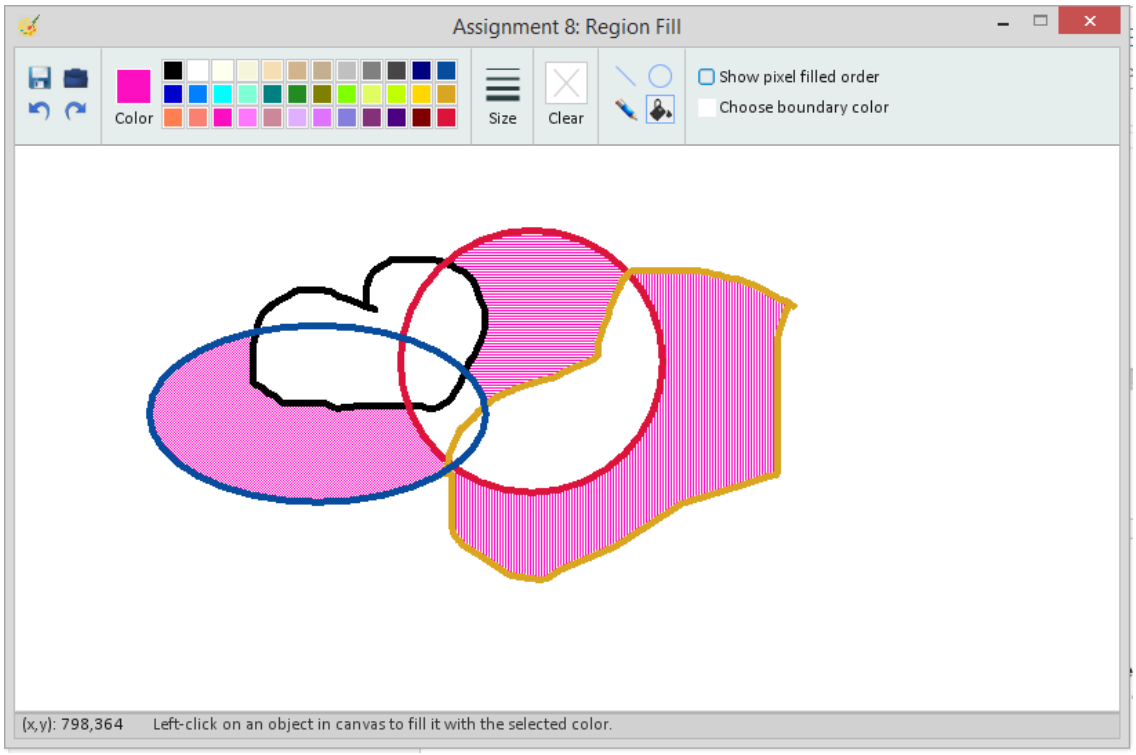


5. Fill with checkered patterns

To do fill with checkered patterns, firstly after we draw the picture, the next thing we need to do is to choose fill vertical stripped patterns by choosing fill tool button. In here also we set the target color to hot pink.

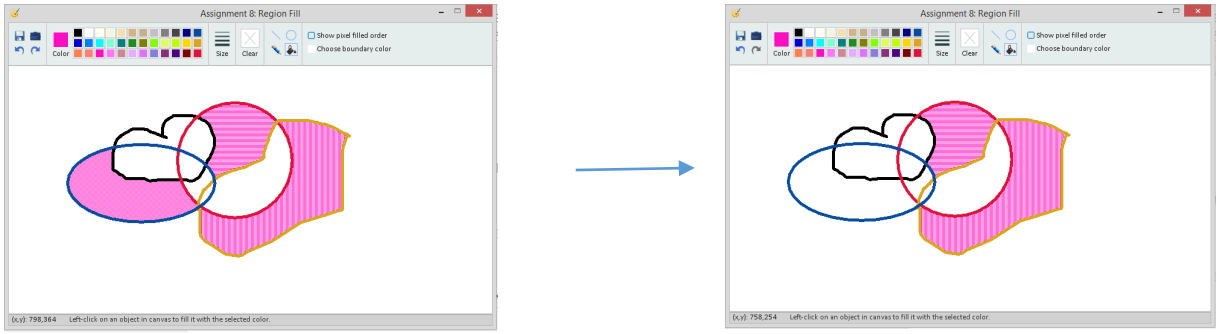


Next, we click the region that we want to fill with the target color, in here for example we just take the left most region of the drawing that we have made. Then we click on that region so now the region is filled by the target color.



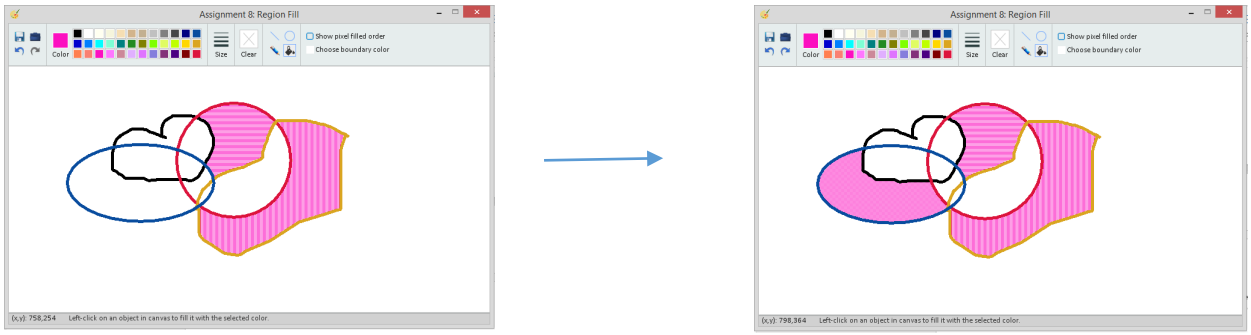
Undo-ing

Undo-ing a work can be done by clicking undo button in the ribbon or just type ctrl + z from keyboard. We take example from fill with checkered method case



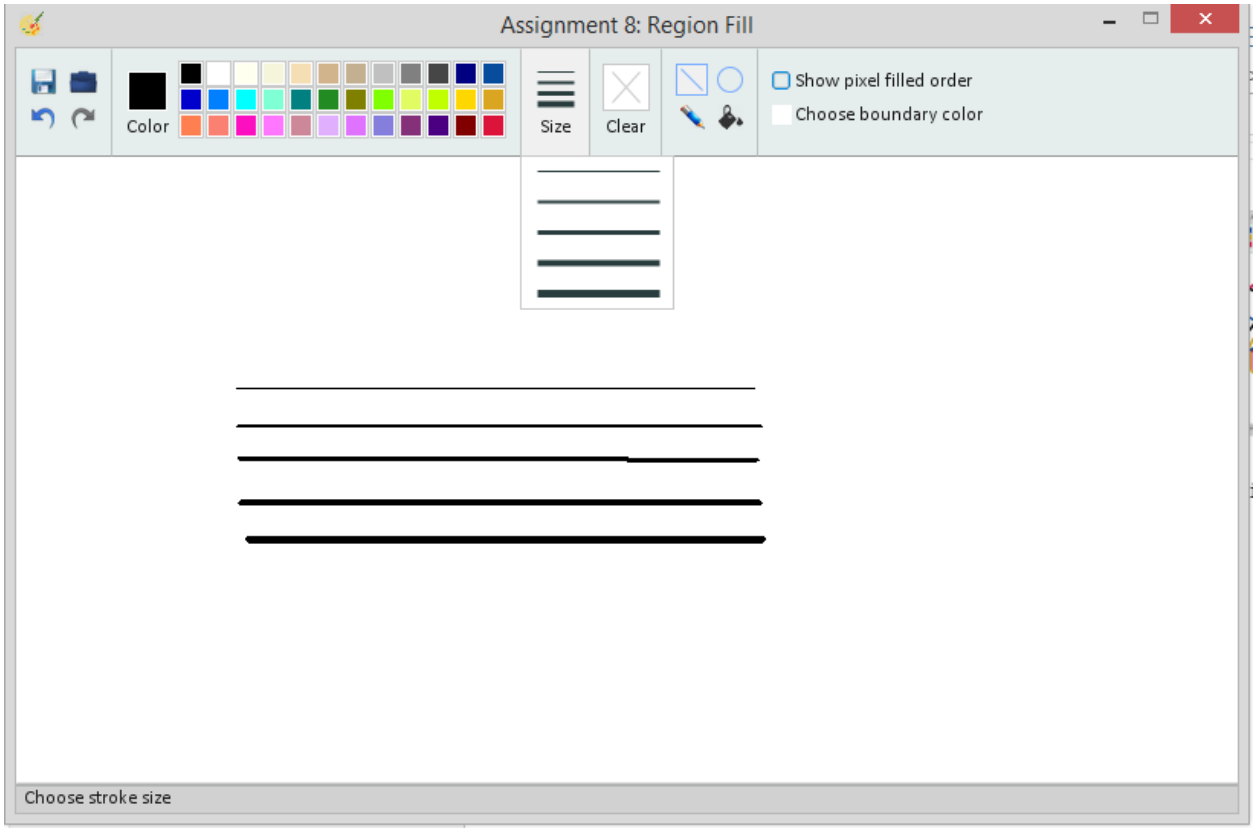
Redo-ing

Redo-ing can be done by clicking redo button in ribbon or we can just type ctrl + y from our keyboard. From undo-ing case, we just redo-ing the thing that hae been undo before.



Controlling the size of the line

Controlling the size/thickness of the line can be done by clicking the “size” menu in the ribbon.



Show pixel filled order

Means, it will show about how are the order of the process when doing a filling into a region. If the “show pixel filled order” is checked, it will show the order of doing the filling.

When “show pixel filled order” is checked, we can directly see the final result of the region filling by clicking “space” in our keyboard.