

1. which tasks I have completed

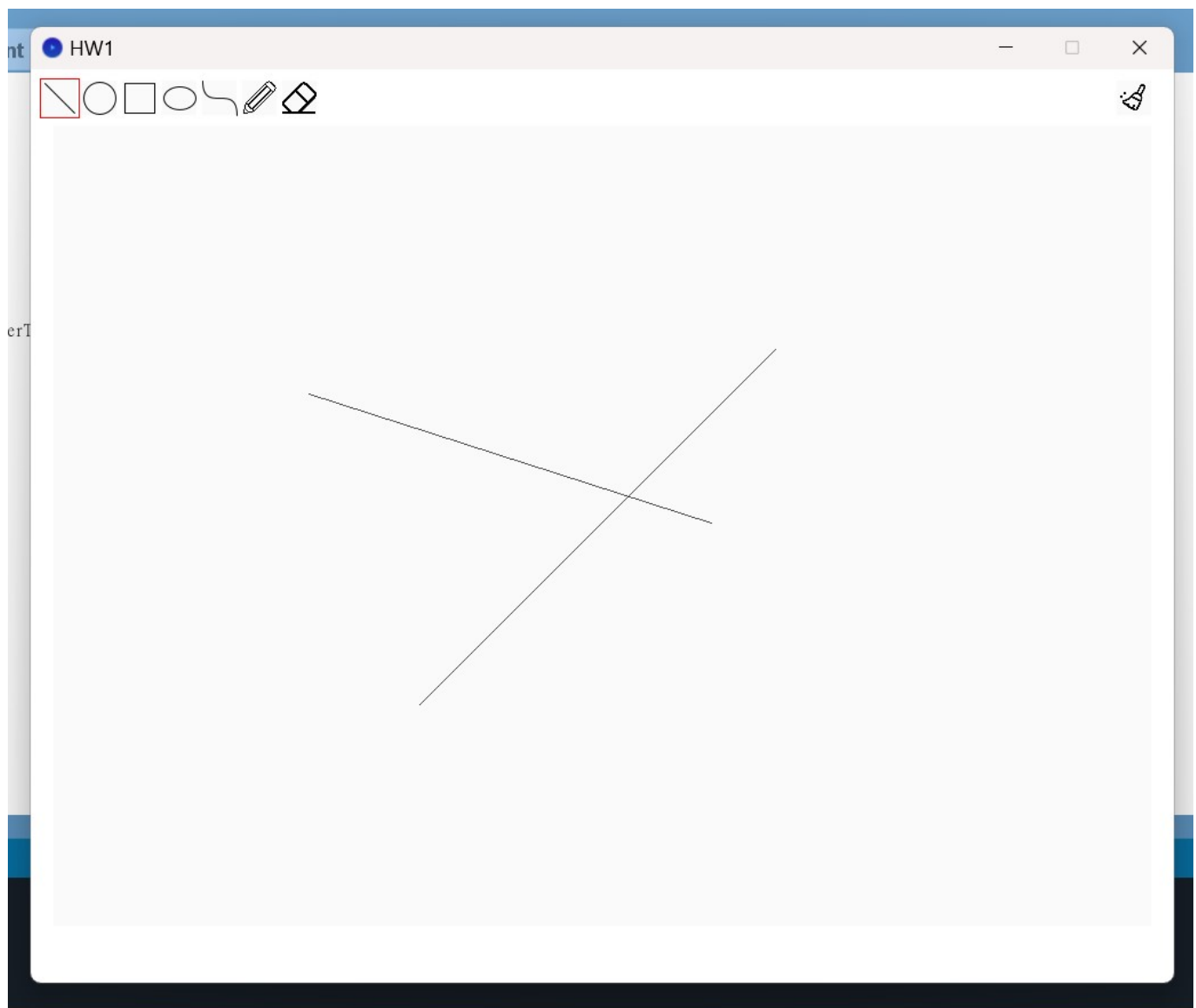
I think this assignment is simulating a small painting application, where I use the algorithms taught in class to implement the functionality of drawing lines and shapes.

2. some screenshots of this work

(1) Draw Line.

I try to use Midpoint Line Algorithm to draw a line. (by asking ChatGPT)

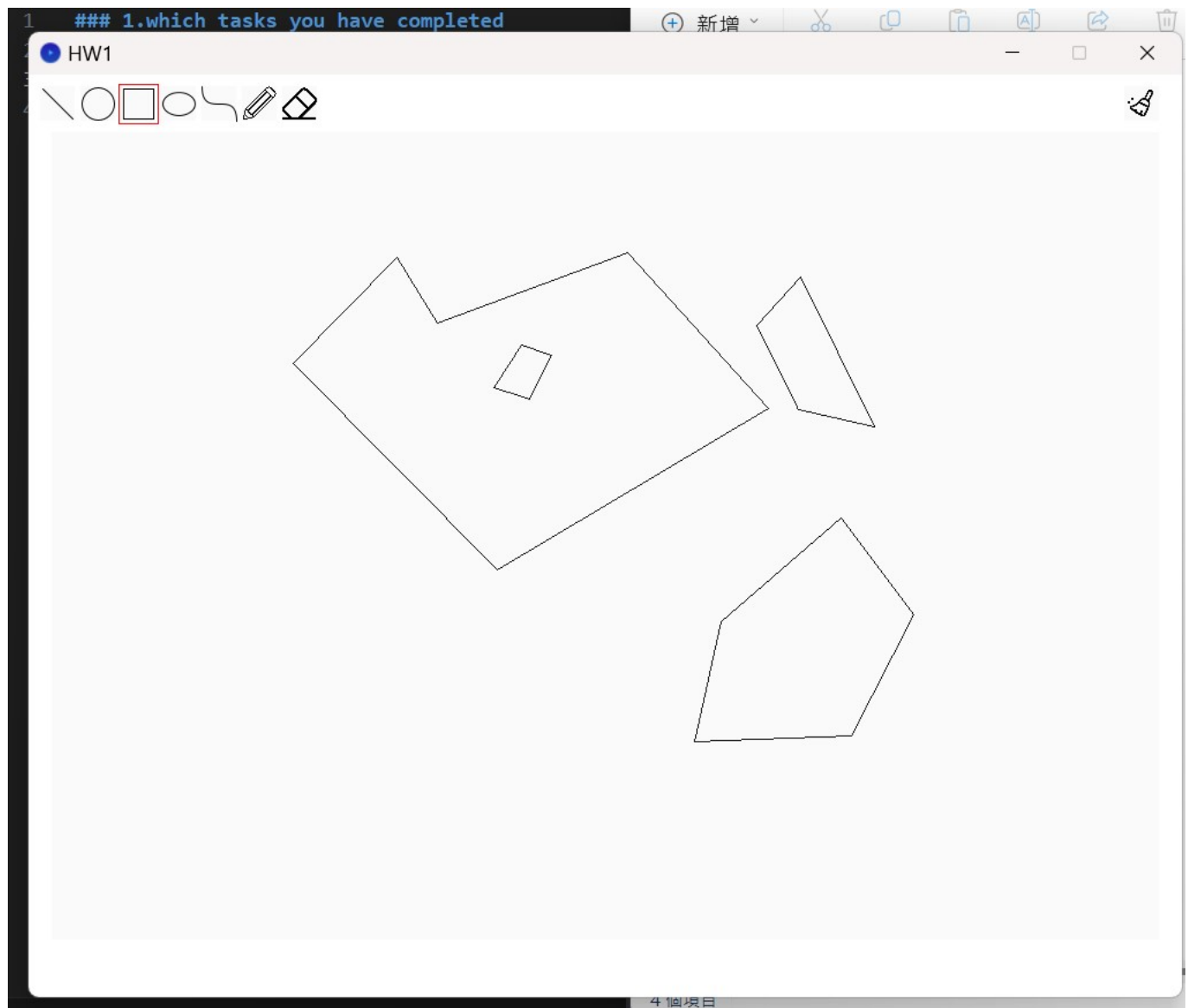
But I also learned that there are other common algorithm to draw line, like DDA algorithm.



(2) Draw Polygon.

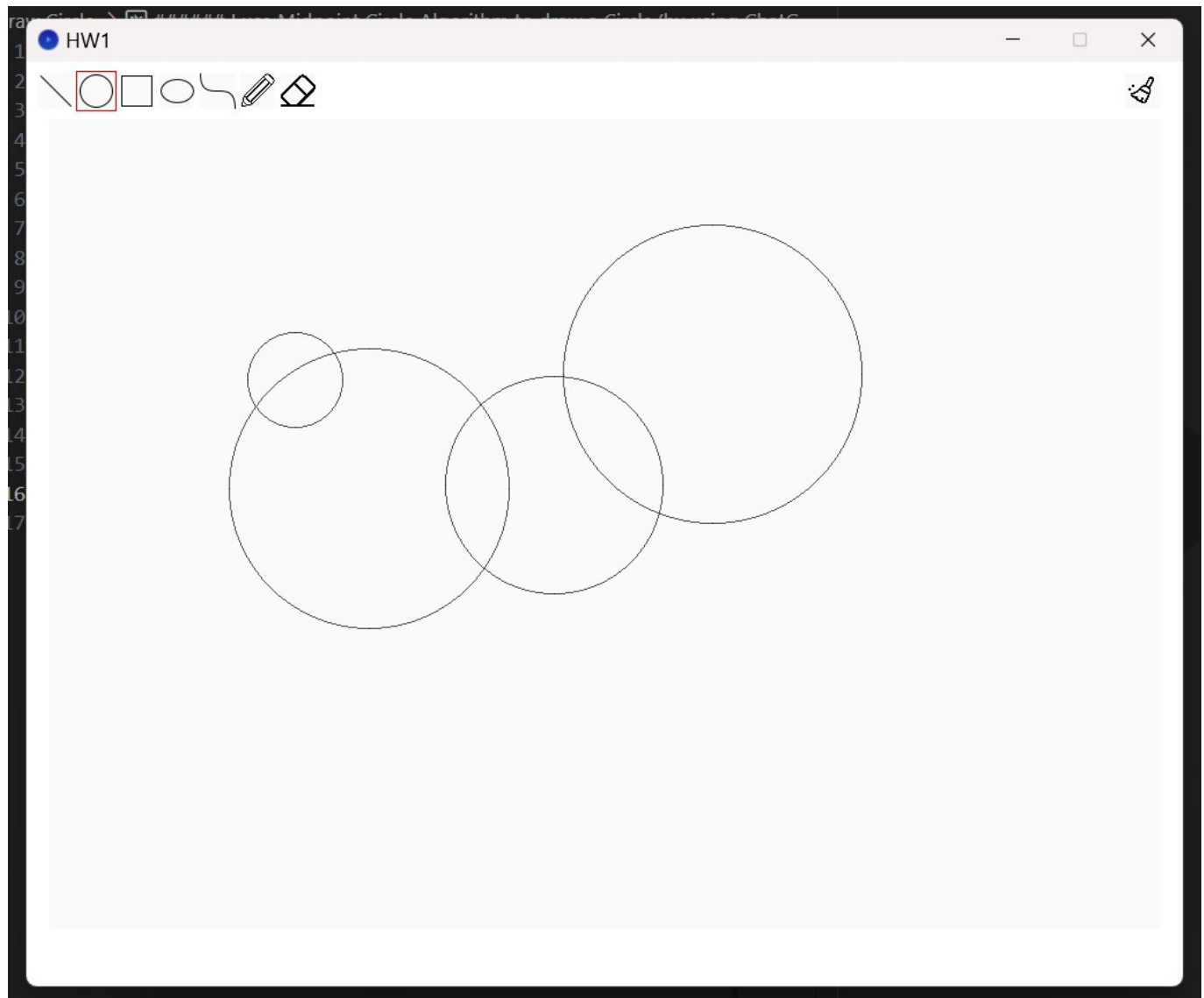
At first, I am unable to close the polygon. When I return to the starting point, it still draws a line.

So I carefully checked the code and found that when returning to the starting point, you need to "right-click" the mouse, and then it works.



(3) Draw Circle.

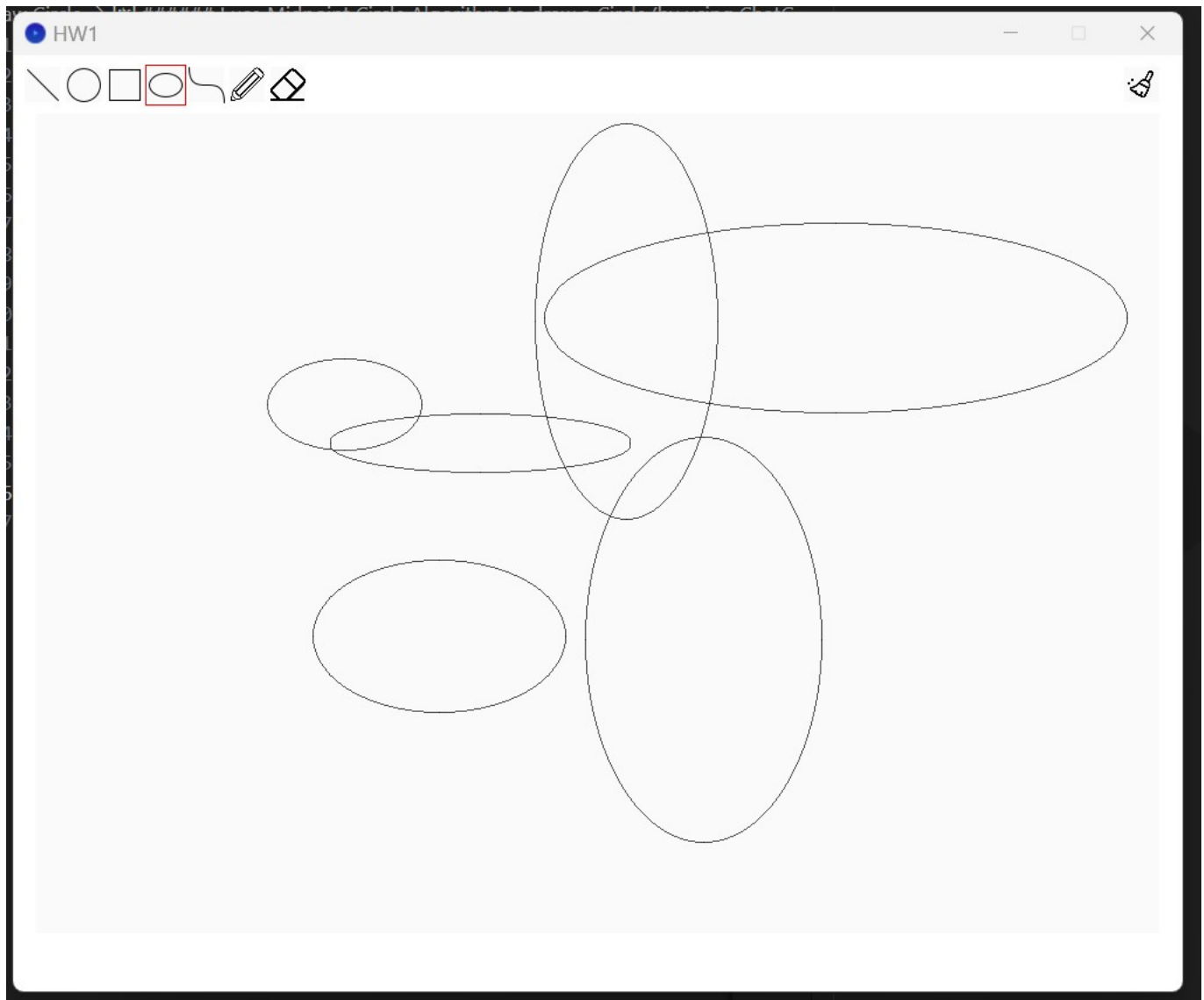
I use Midpoint Circle Algorithm that teach in classes to draw a Circle.(by using ChatGPT as well)



(4) Draw Eclipse.

For this part, The HackMD for Assignment 1 includes some reference websites, so I visited the [Geeksforgeeks.org](https://www.geeksforgeeks.org/midpoint-ellipse-drawing-algorithm/) website and used the Midpoint ellipse drawing algorithm to complete the ellipse drawing.

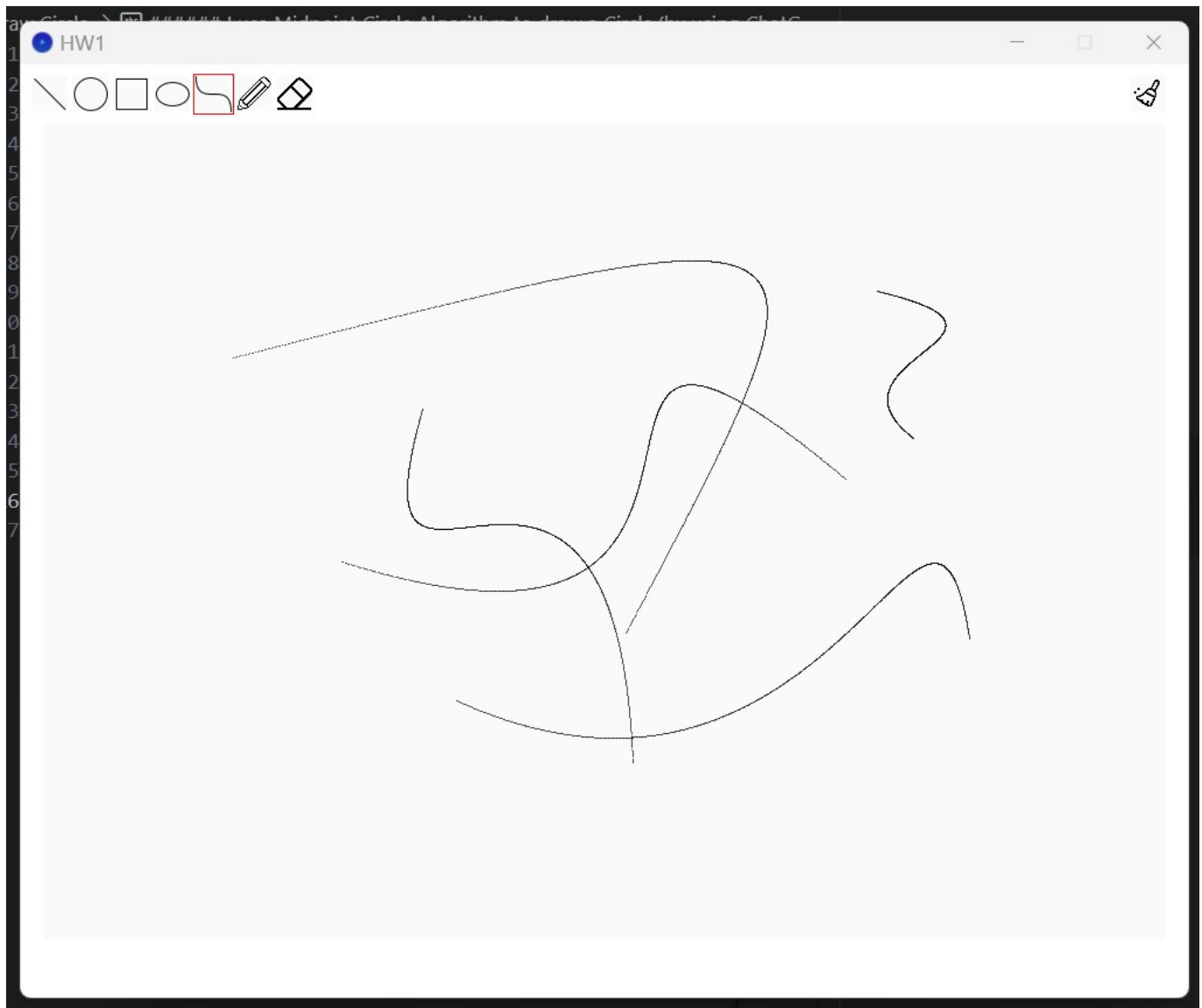
I also asked ChatGPT for guidance on how to write the code.



(5) Draw Curve.

So same as drawing Eclipse, I visit the website present on HackMD, and with the help of ChatGPT.

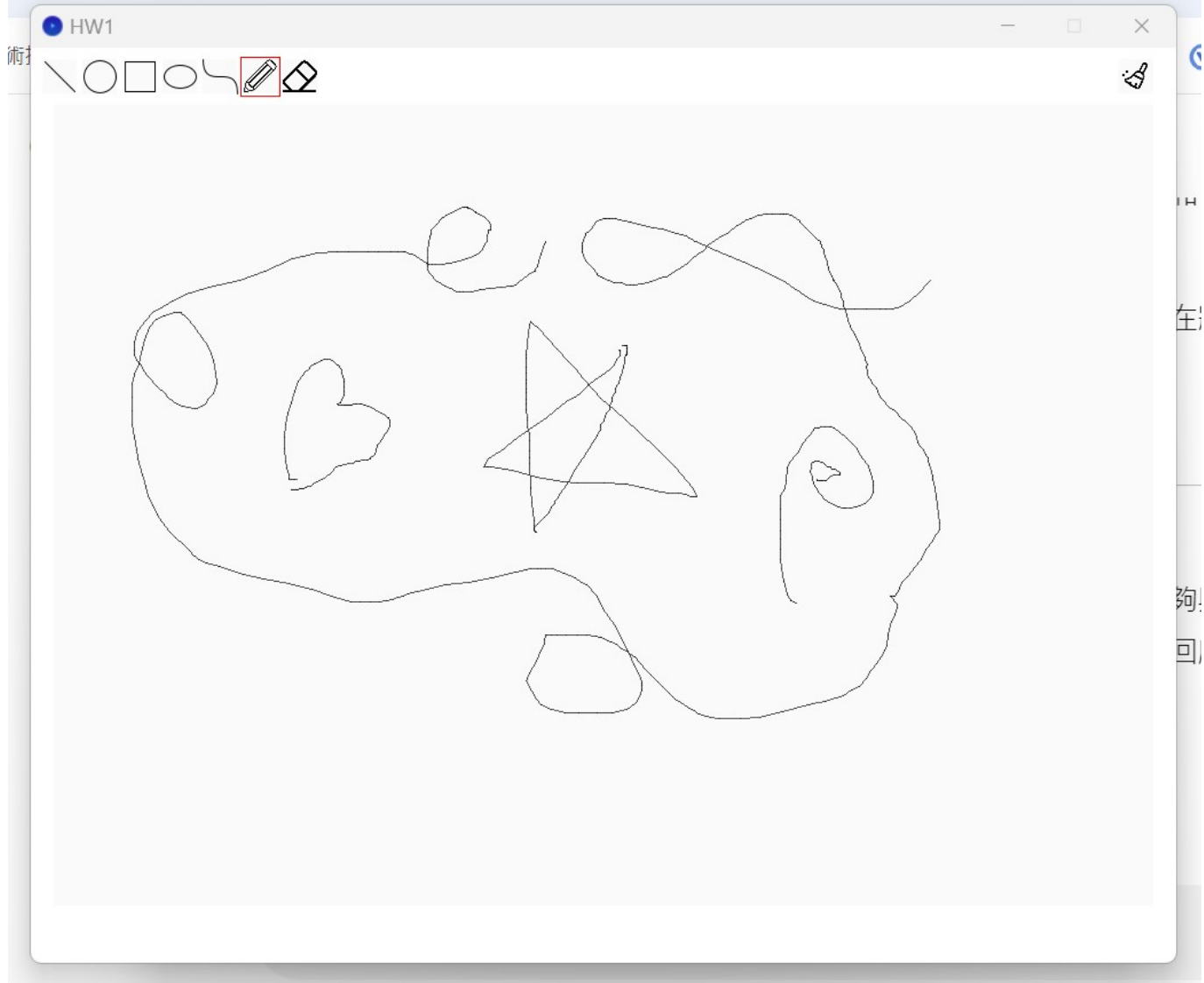
But the code ChatGPT initially provided drew curves as many individual points rather than connected lines, so I added a "segment" variable. By increasing the number of segments, the drawn curve became continuous.



(6) Pencil Line.

Pencil line is actually based on Line drawing function, so this part is easier.

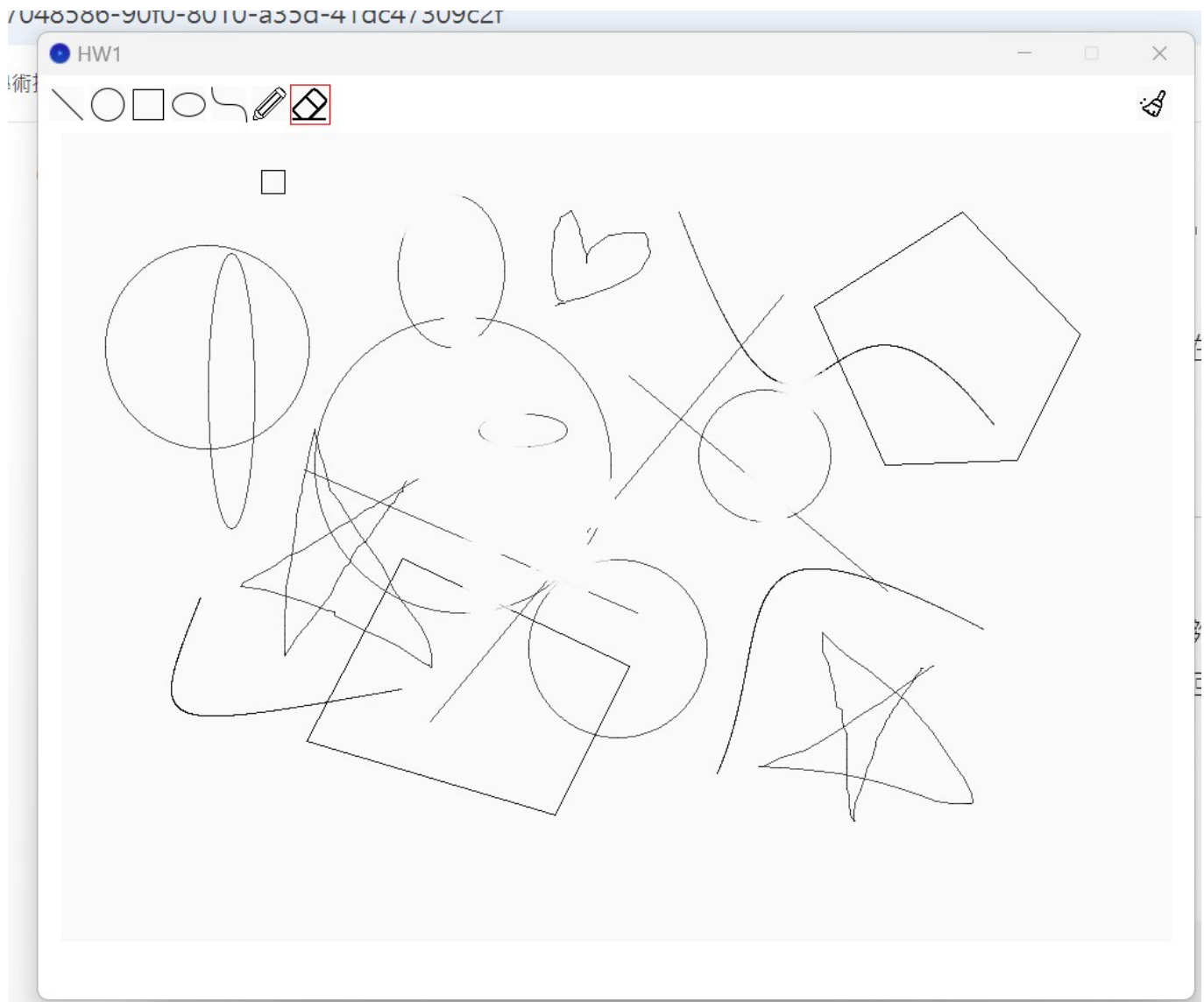
048586-90f0-8010-a35d-41dc4/309c2f



(7) Eraser.

I use the method to determine the minimum and maximum x and y coordinates between the two points to define the rectangular erase area.

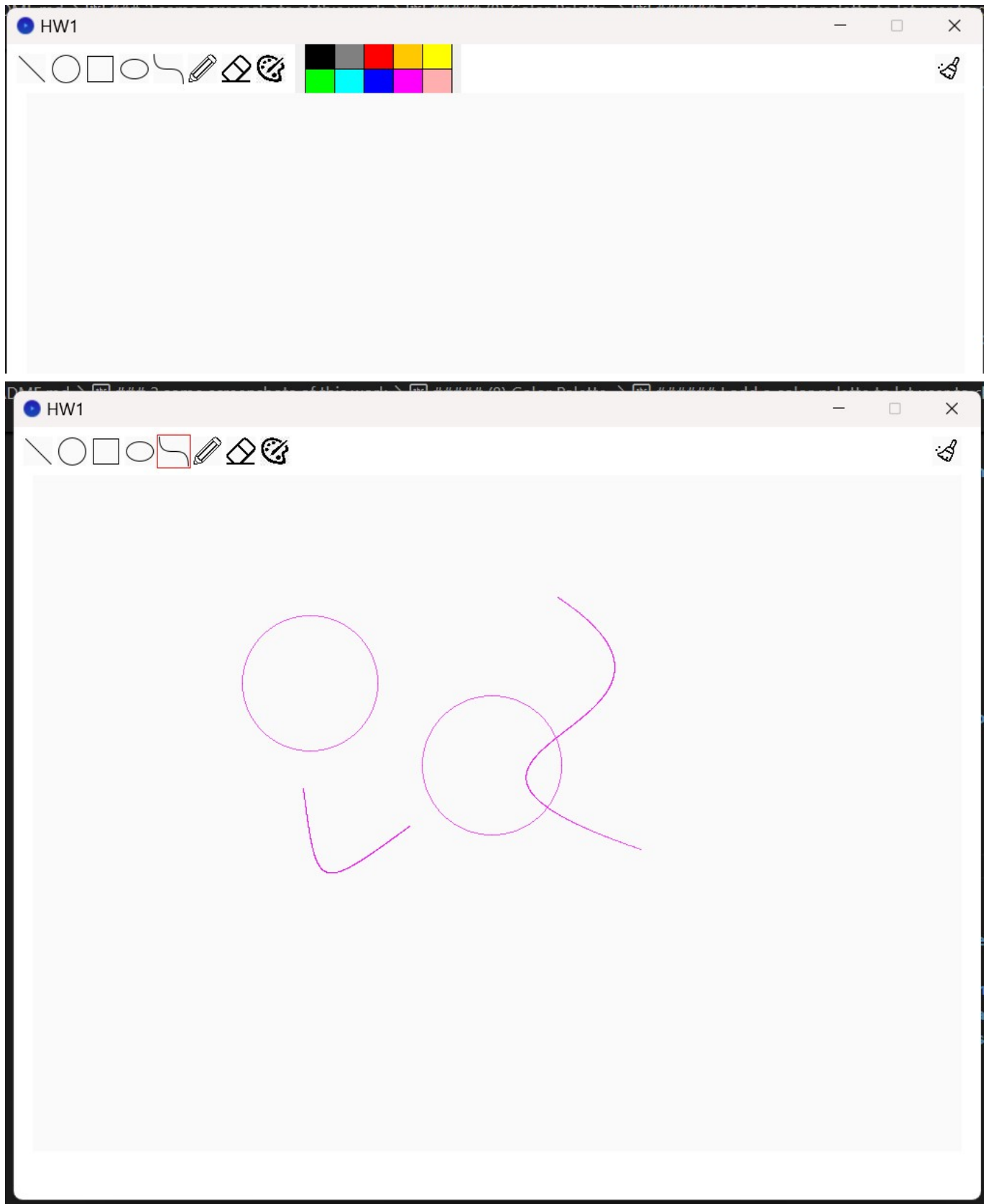
And changes all pixel color to the background color.



(8) Color Palette.

I add a color palette button to let user to choose color and draw. After clicking the button, the palette will show, and you can pick a color.

But there's a problem, after I choose another color, the shape I draw before will also change to a new color too. I'm still can't figure it out due to the time limit.



3.how I completed these tasks

Since there are many pdf file and functions inside, so at first, I uploaded each .pde file to ChatGPT to let it explain the functions of these files.

Then, I used screenshots to send the algorithms mentioned in class and asked it how to combine them with the structure of this assignment to write the code. I also provided links to ChatGPT to help it better understand what I was talking about.

For the problem I encounter in this Homework, I usually give ChatGPT clear instructions, such as what kind of effect I want to achieve or which part I hope to change. This way, problems can be solved more quickly.