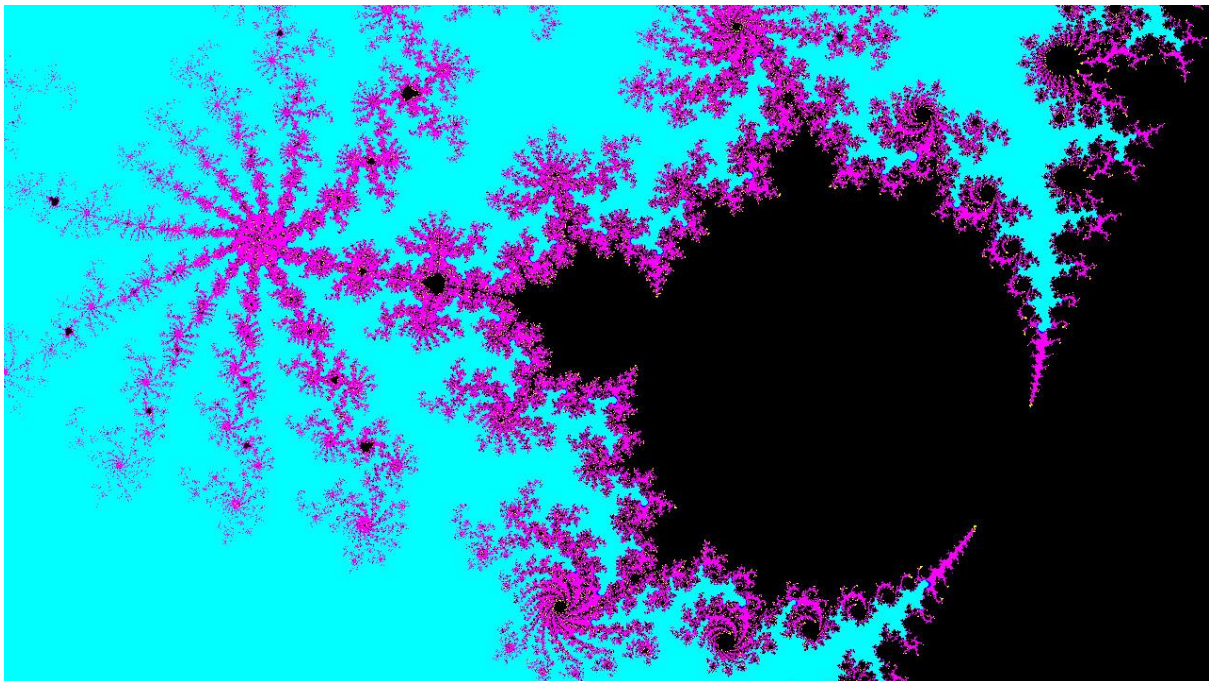
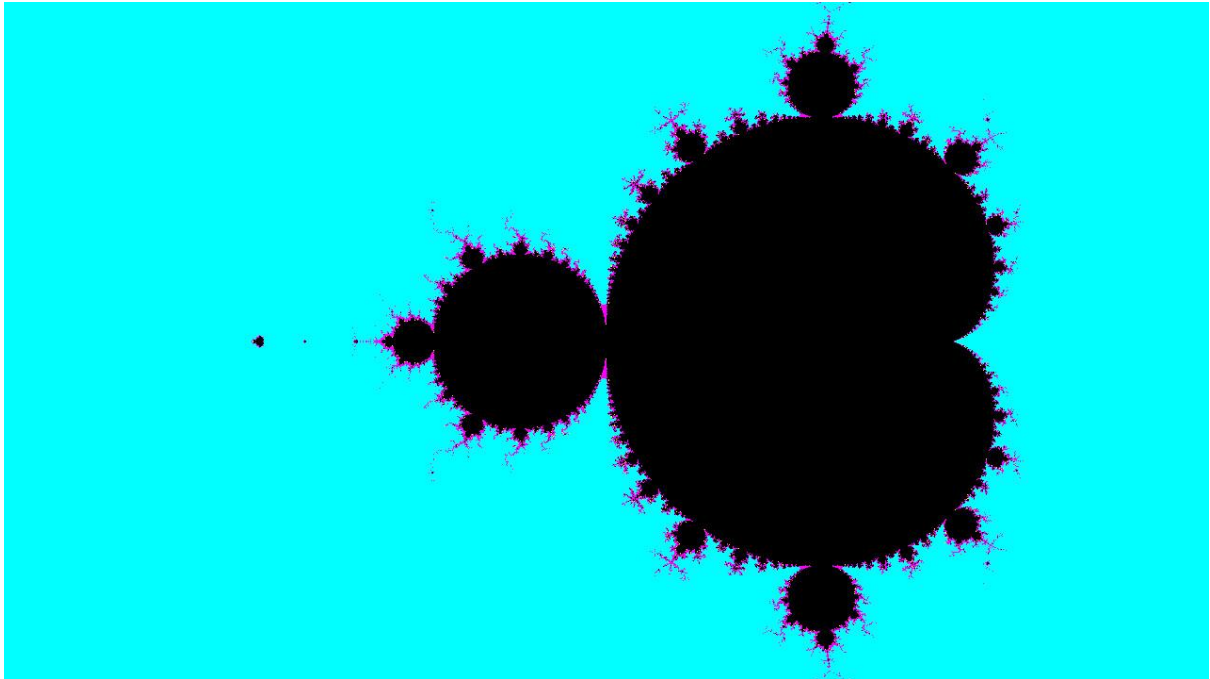


# Mandelbrot Zoom

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The Mandelbrot set is the set of complex numbers  $c$  for which the function  $f(z)=z^2 + c$  remains bounded when iterated from  $z=0$ -  $f(0)$ ,  $f(f(0))$ , etc are bounded. We get a beautiful plot on plotting the complex numbers  $c$  on a complex plane.

This are examples of mandelbrot plots created using C++ and SFML:



The other functionalities added are:

- Zooming in wherever we click on the screen
- Zooming out at the centre of the screen
- Zooming in at the centre of the screen
- Arrow Keys for moving the plot up, down , left and right
- Increasing and decreasing the precision(max iterations) of the plot
- Returning to the original state of the plot
- Saving a screenshot of the plot as an image
- Changing the colour of the plot

This was coded in C++ using the graphics library SFML.

To run the code, unzip the file and type mingw32-make in the corresponding directory.

I could not include the executable directly in the bodhitree submission due to size issues.

I have included it in the folder containing the demo video.

Link to demo video:

[https://drive.google.com/drive/folders/1FGuHFBFm\\_5HmjXvRtR5XVgRFmN1QtOgp?usp=sharing](https://drive.google.com/drive/folders/1FGuHFBFm_5HmjXvRtR5XVgRFmN1QtOgp?usp=sharing)