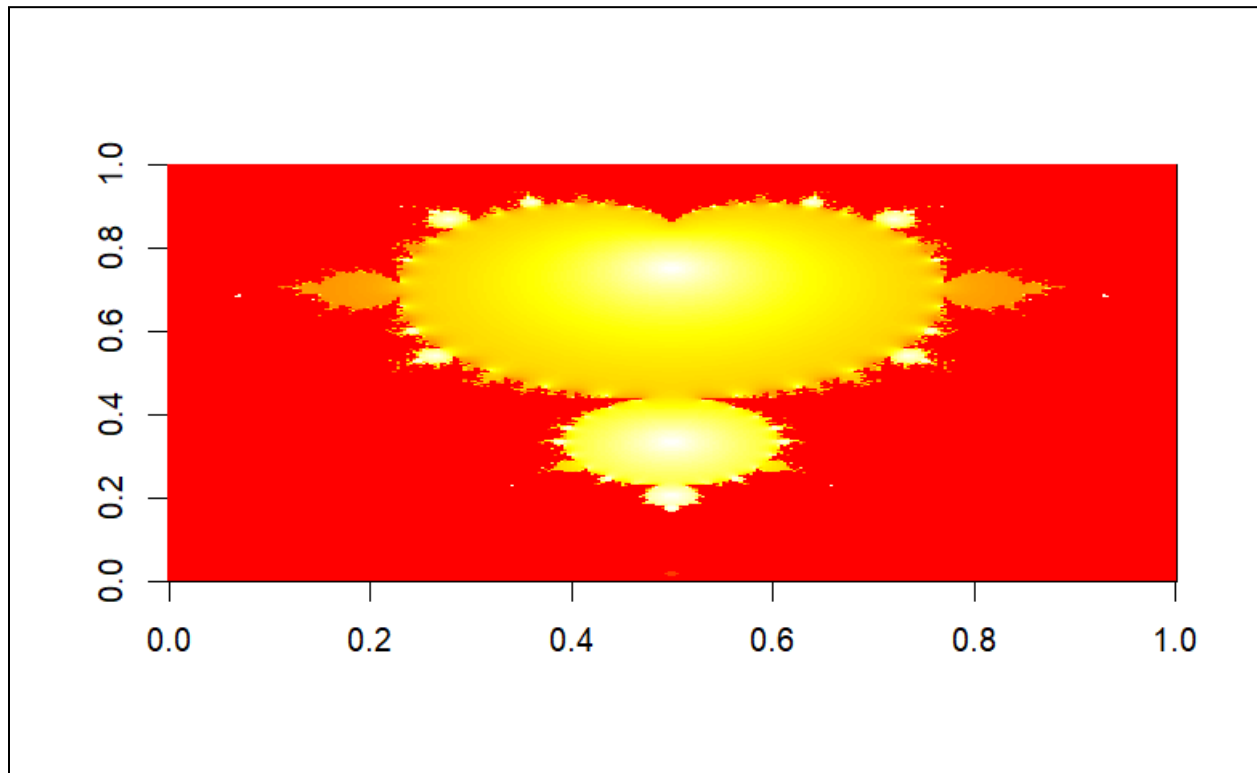
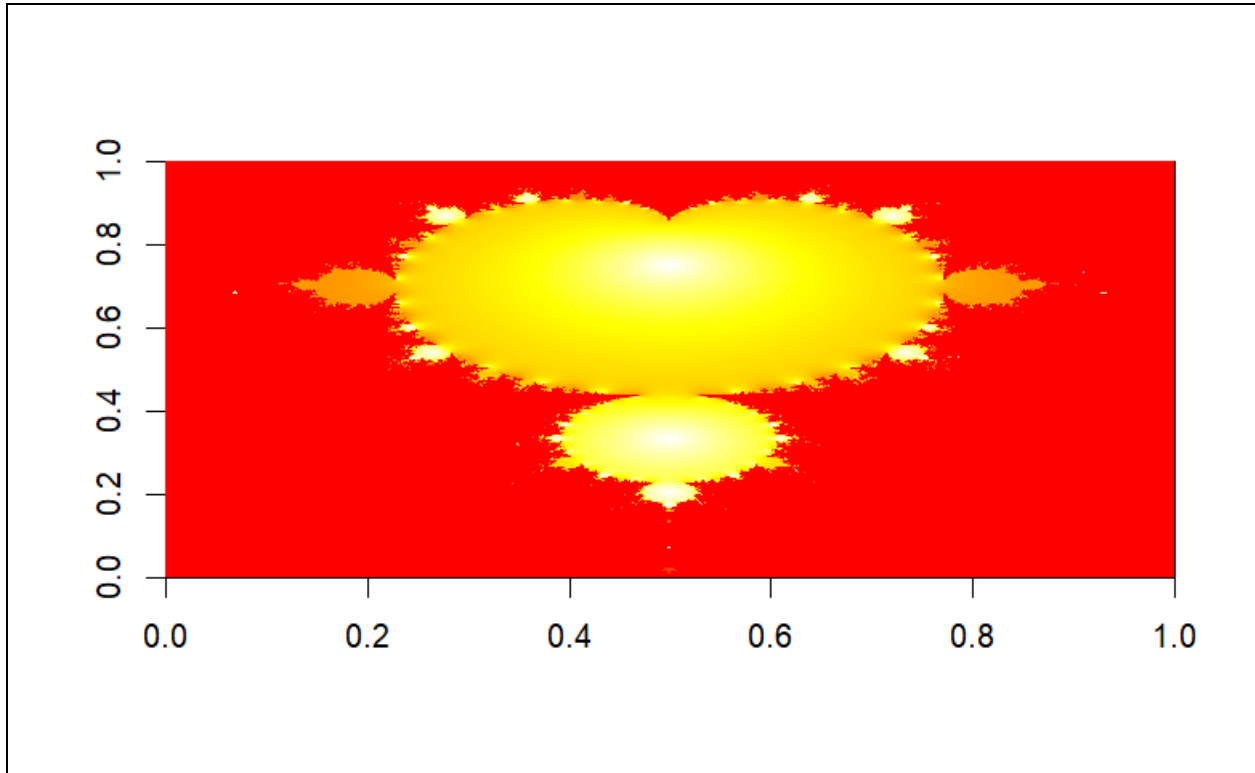


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Lab 1 Report  
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1. Output for `fractal(iters=40, dim=300, xlo=-1.8, xhi=0.6, ylo=-1.2, yhi=1.2)`:

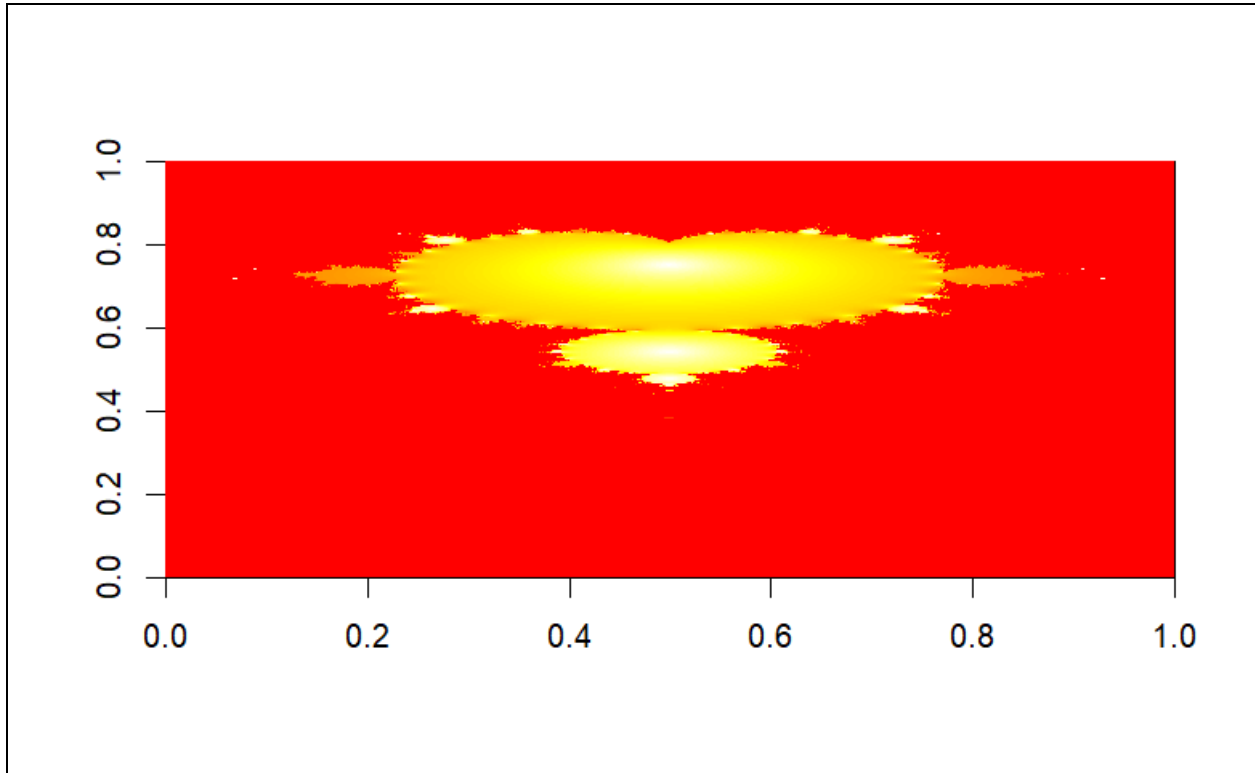


2. Changing the `dim` parameter to 1000:



The dims represents the dimensions in fractal, and the higher the dimensions is the higher the resolution in the fractal image. Additionally, the computational time took longer.

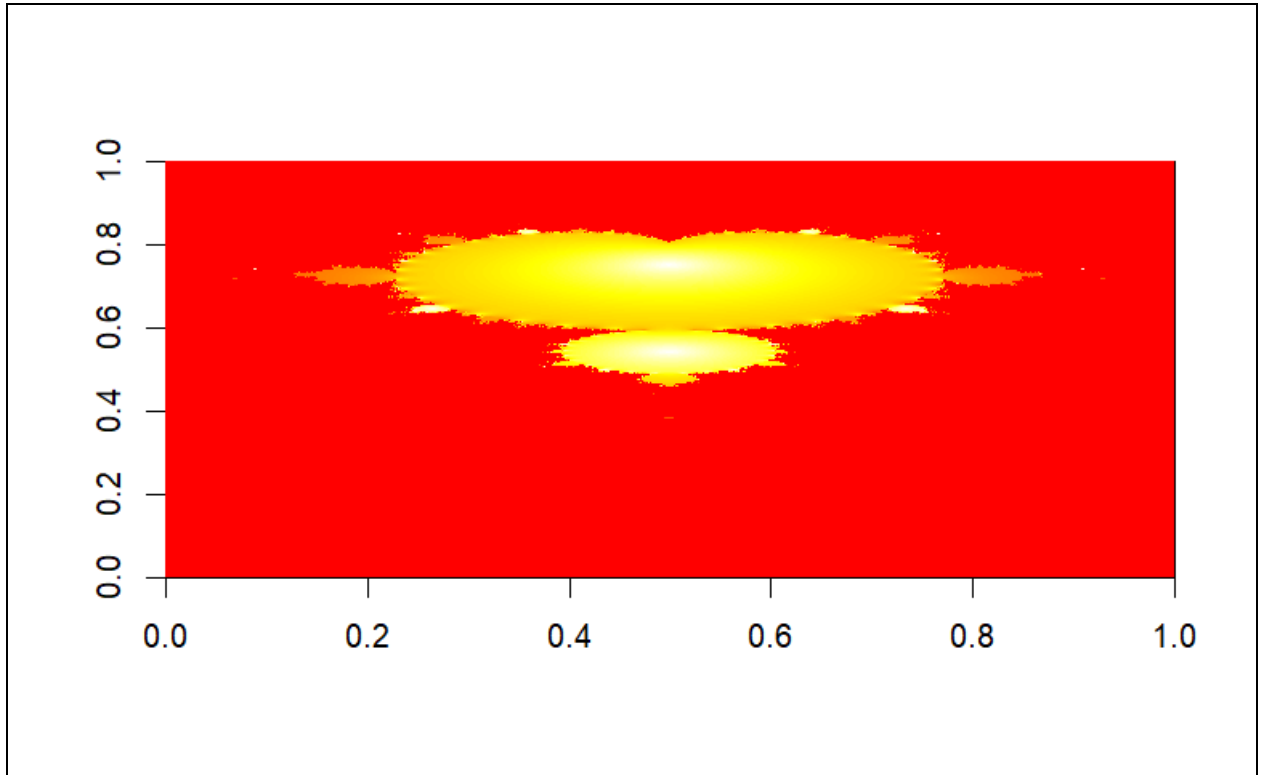
3. Change xlo to -3.6 and xhi to 1.2:



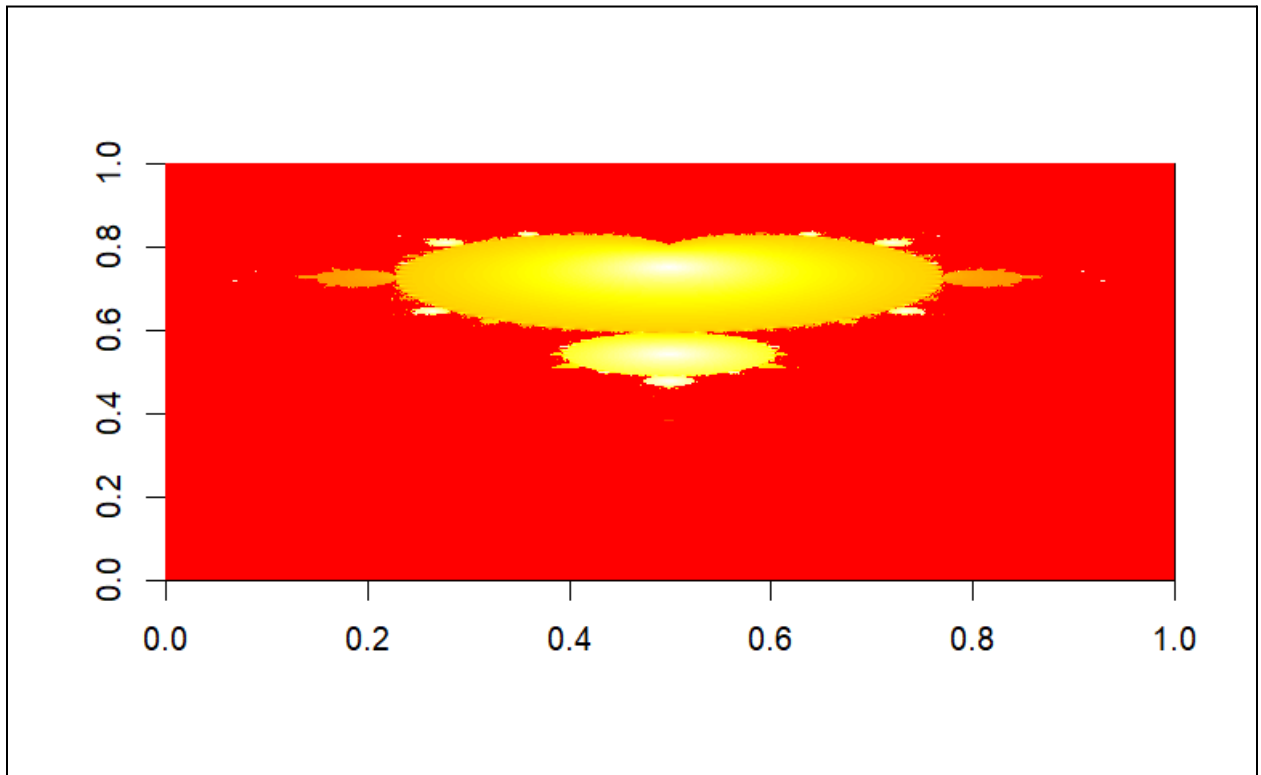
The xlo and xhi in the fractal function represents the values used for the x-axis in the computation of the fractal image. When the xlo and xhi are each doubled, it expands the x-axis ranges.

4. Change iters to 50, 100, and 1000:

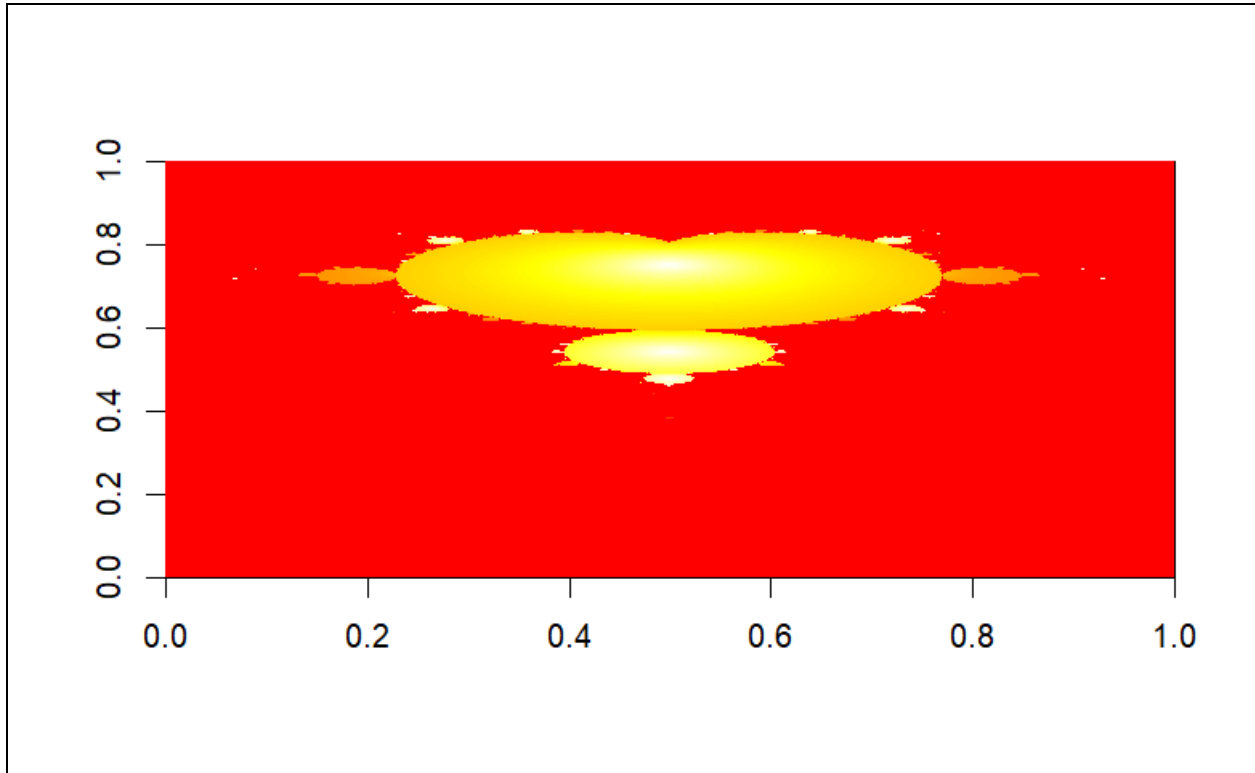
Iterations at 50:



Iterations at 100:

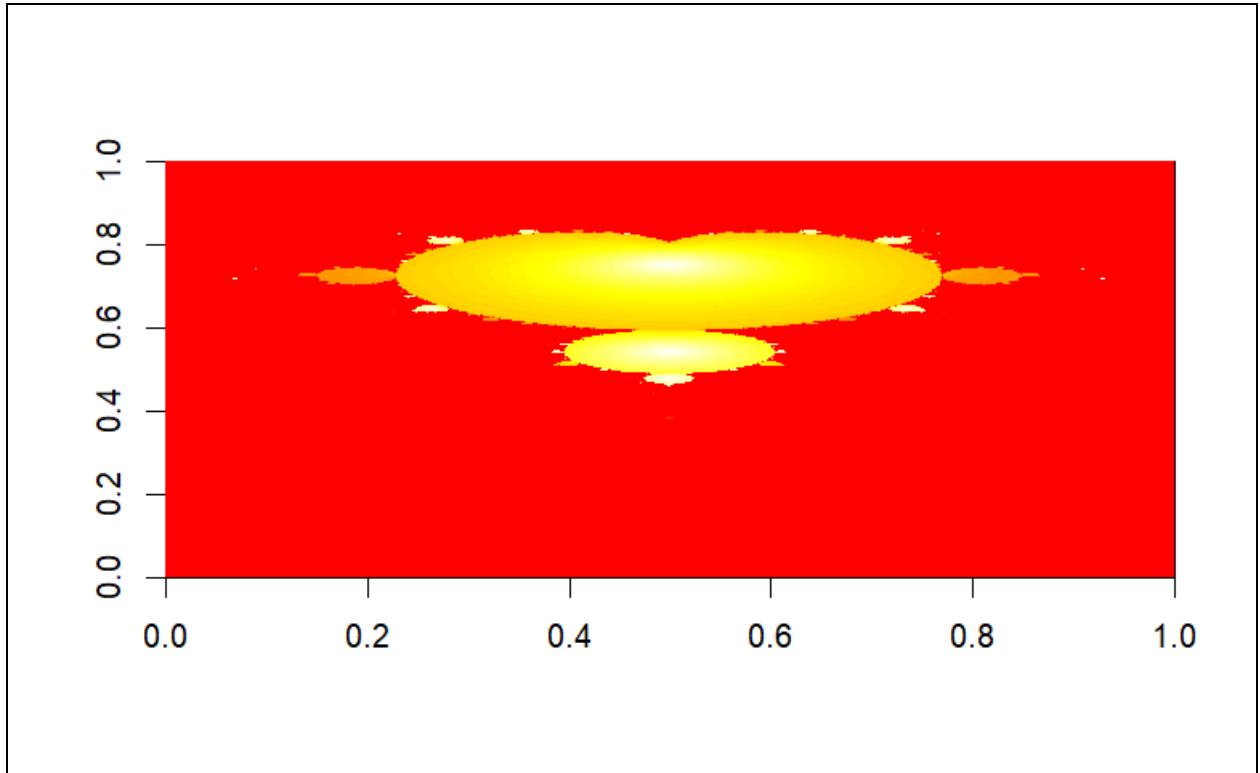


Iterations at 1000:



Iterations in fractal is the iterations that it does. The more iterations, the clearer the image and less grainy it is. Additionally, the higher the iterations the more computational time.

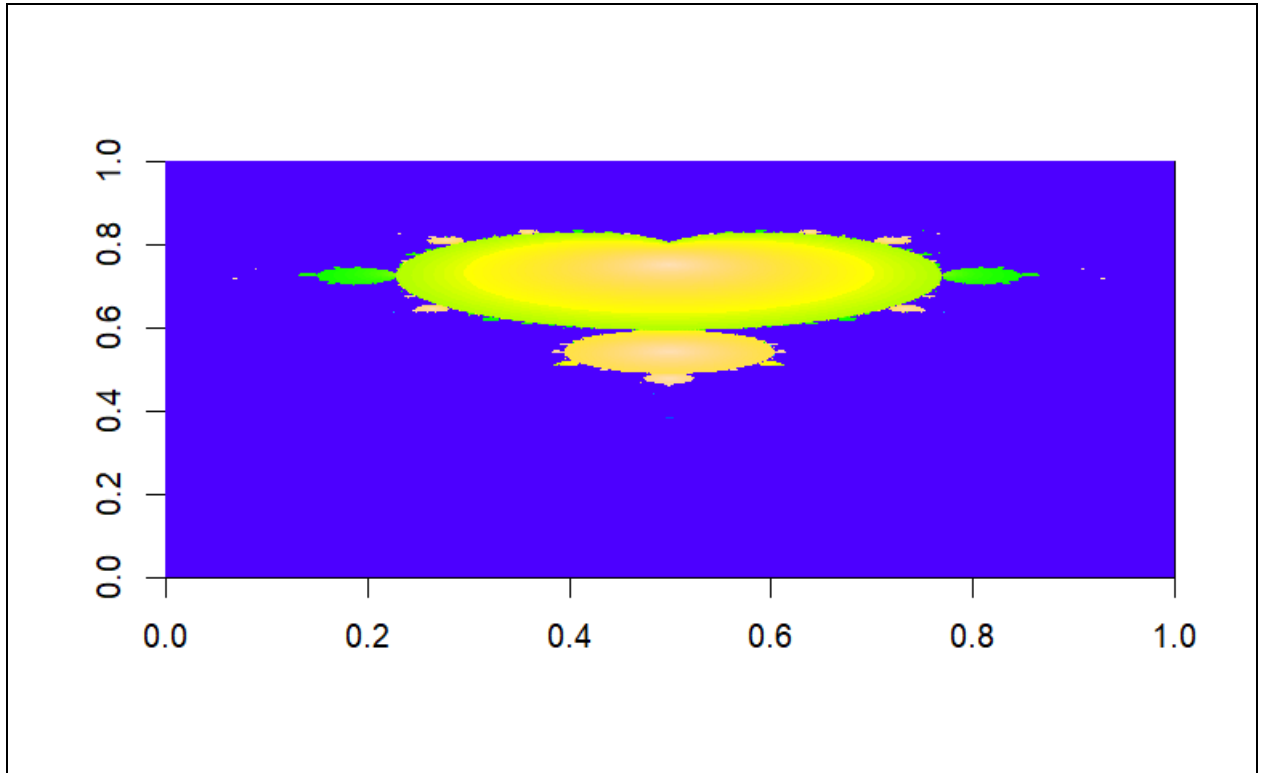
5. Change `heat.colors(100)` to `heat.colors(50)`:



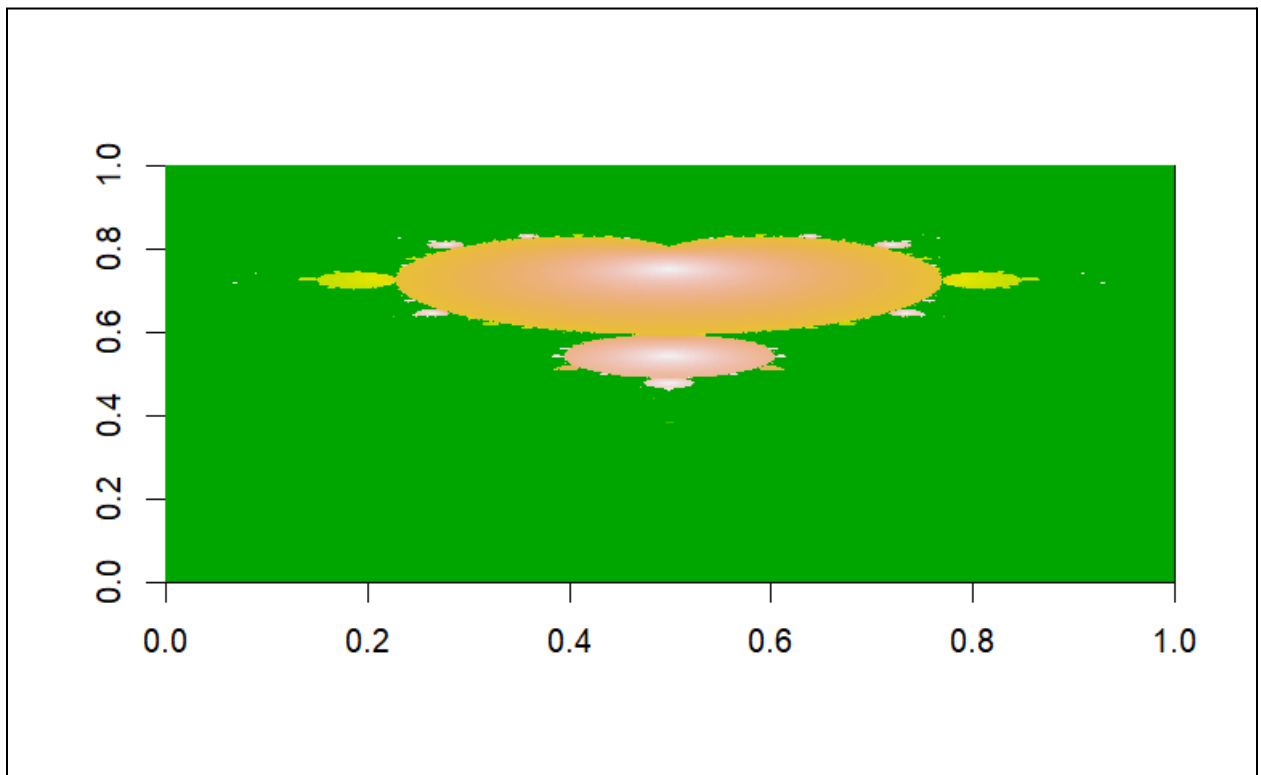
From my understanding, when changing `heat.colors` from 100 to 50, the palette of colors is reduced. With this being said, there would be visually less differences between highs and lows. However, looking at the current image and the previous image there are very little differences.

6. Changing `heat.colors(100)`:

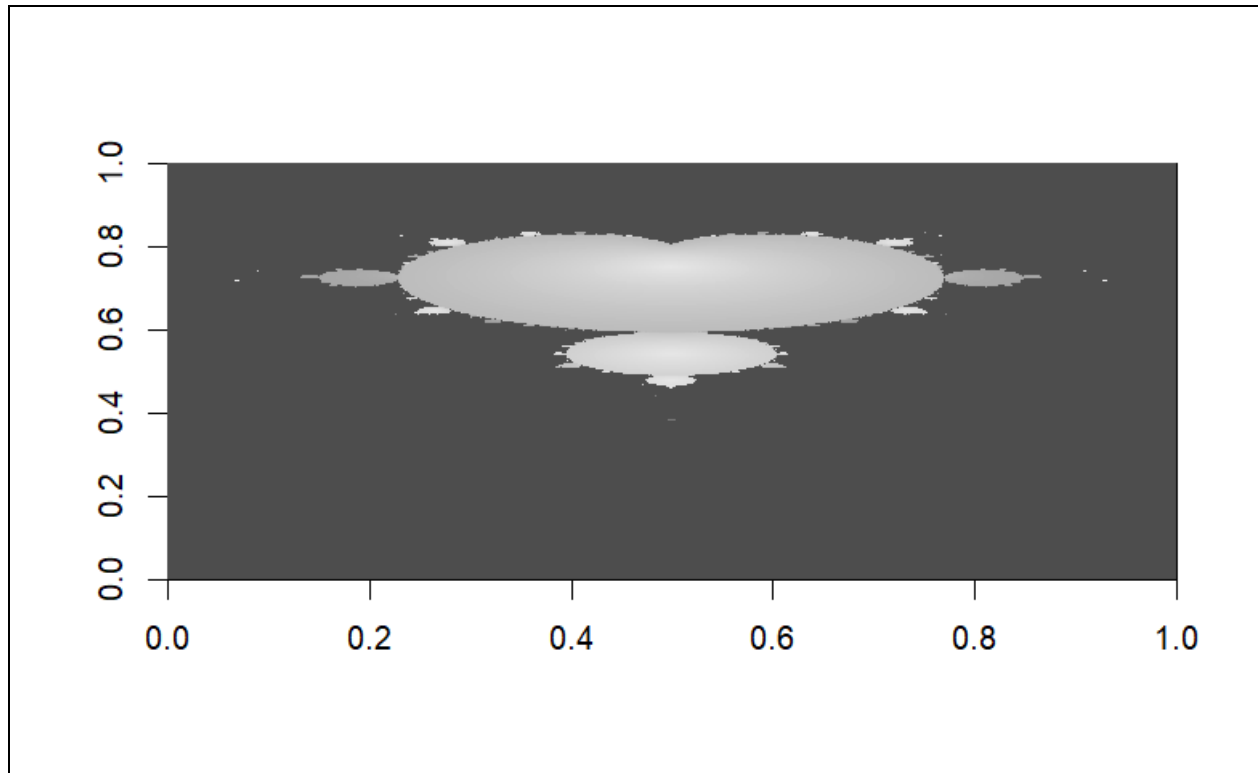
Changed to `topo.colors(100)`:



Changing `terrain.colors(100)`:



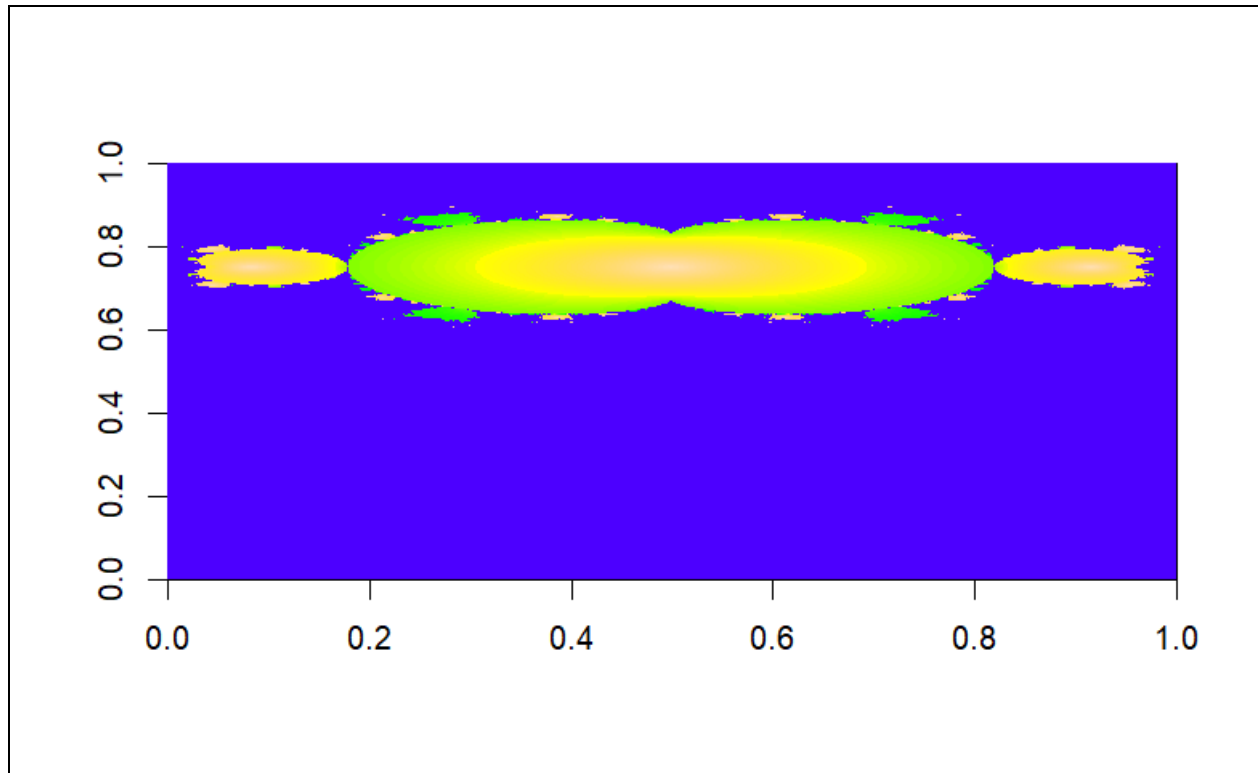
Changing `gray.colors(100)`:



Changing `heat.colors` to each of the ones listed above changed it to different color arrays that show highs and lows differently.

7. Change the expression to  $Z \leftarrow Z^3 + C$ :

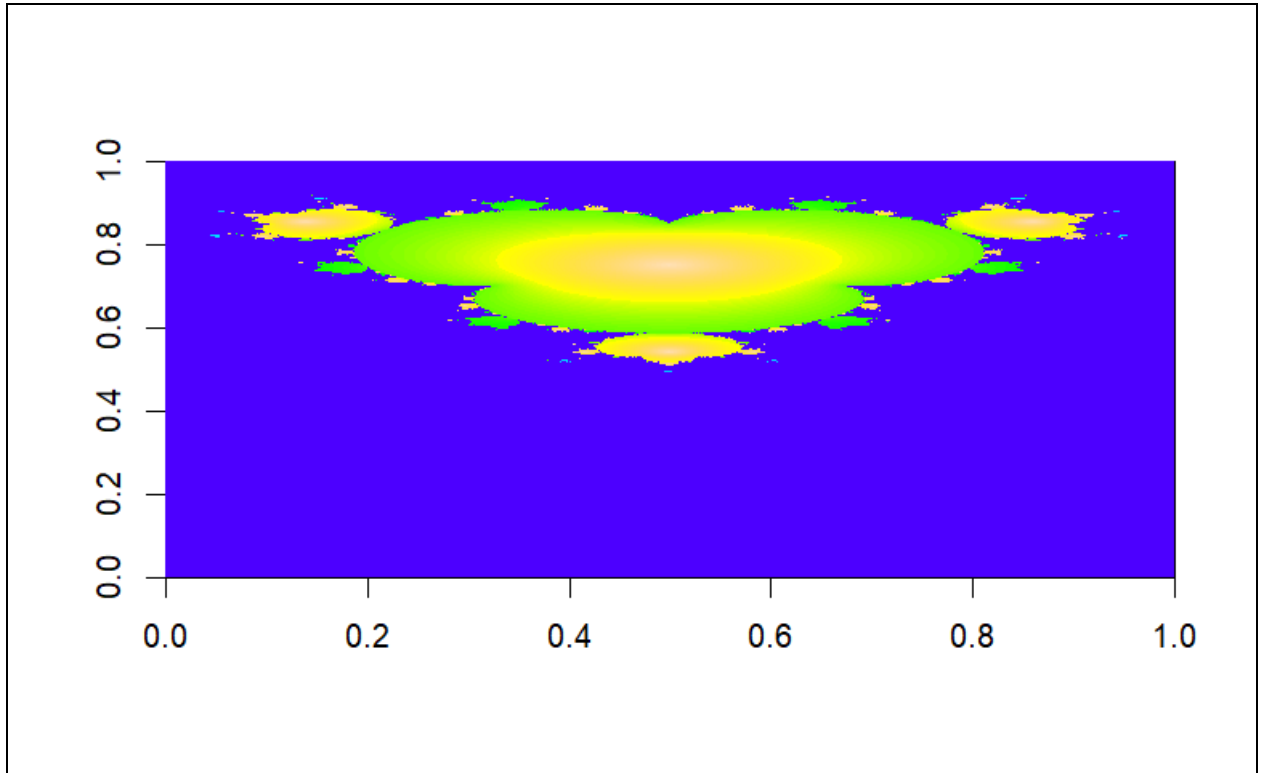




When changing it to  $Z \leftarrow Z^3 + C$ , performs a cubic iteration on the complex numbers instead of a quadratic iteration. This results in changing the shape.

8. Changing something else:

Changed to  $Z \leftarrow Z^4 + C$ :



Changing ylo to -2.4 and yhi to 2.4:

