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EE 5373
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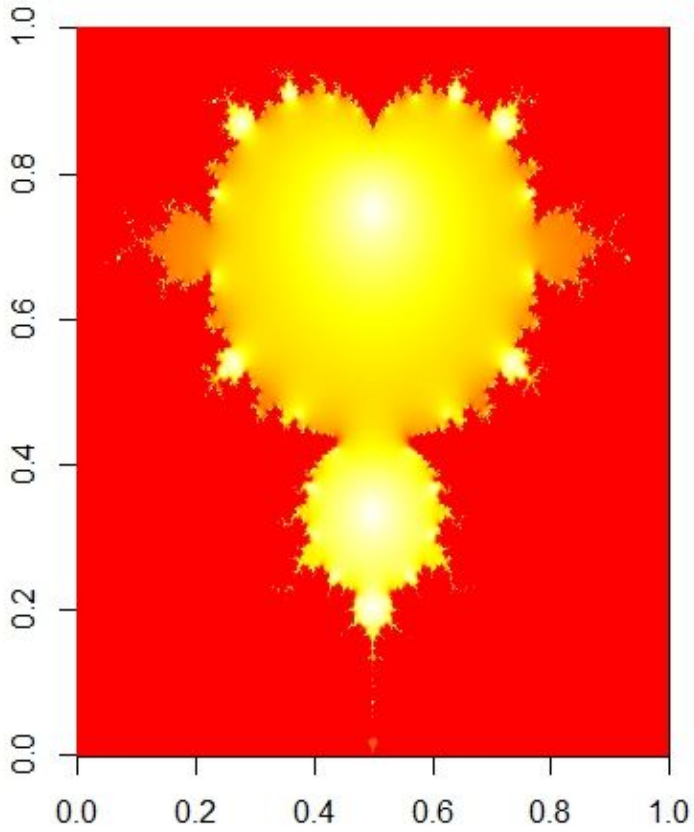
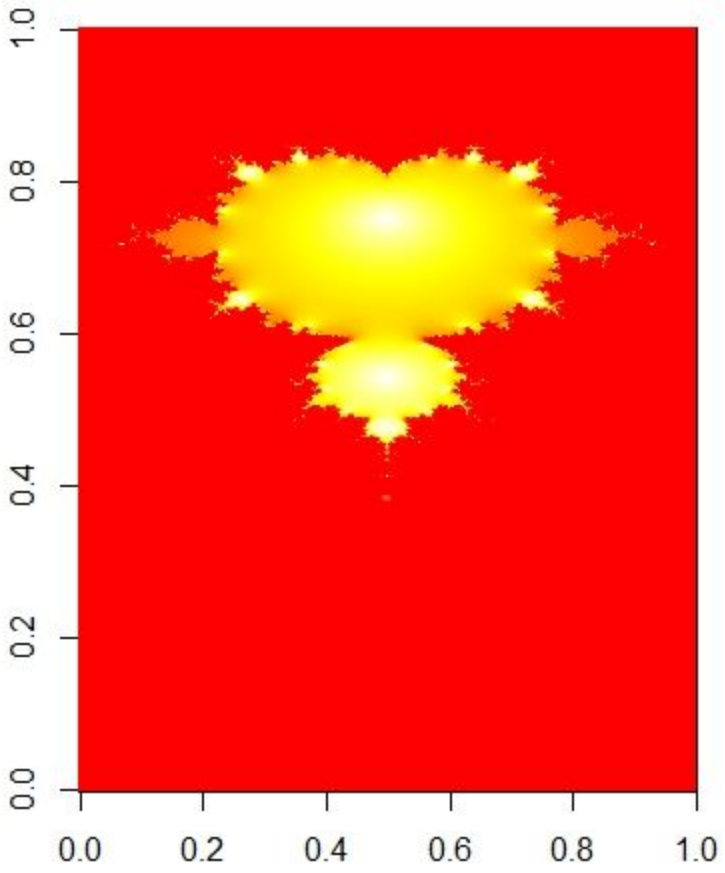
Lab 1

1 .Change the dim parameter to 1000



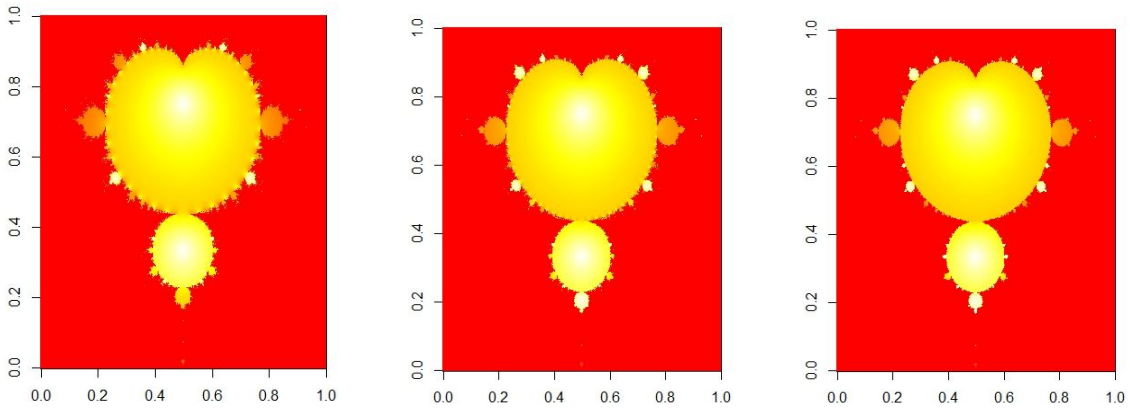
- Increasing **dim** leads to have more data points as the image above represents a matrix of size (**dim** x **dim**) which leans to have more detailed image.

2. Change xlo to -3.6 and xhi to 1.2



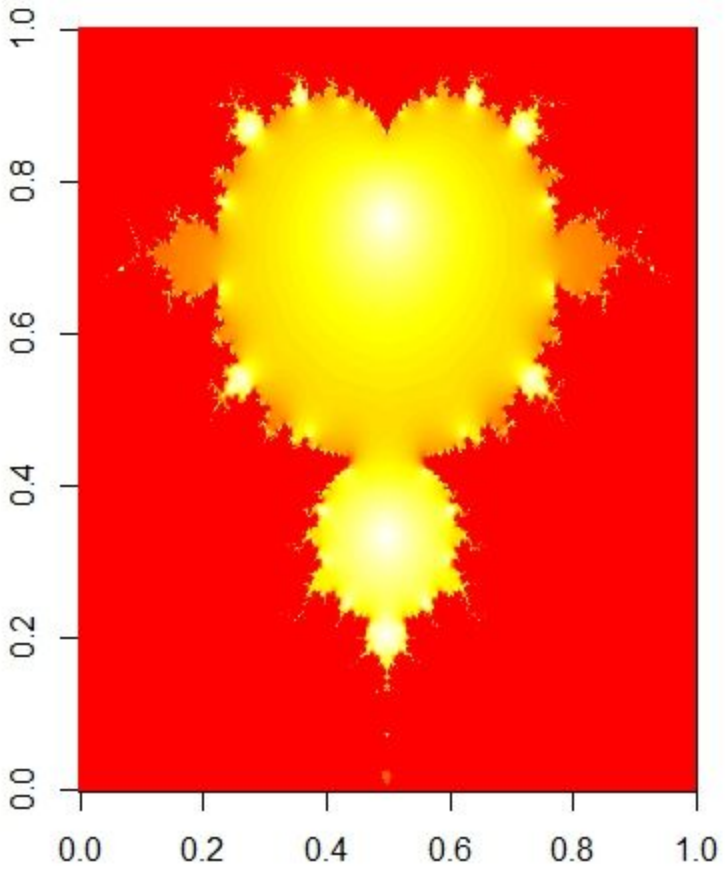
- By changing parameter **xlo** and **xhi,** it will only affect the points in between those two vertically wise. The colors in the image depend on the value that every point holds. Since we change xlo to -3.6 and xhi to 1.2, the image became shorter and it was shifted up.

3. Change iters to 50, 100, and 1000



- Those 3 images represent **iters** 50, 100 and 1000 respectively.
- As **iters** increases, image contrast increases too because red points get more red and yellow point get more yellow.

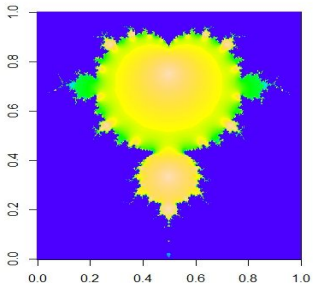
4. Change heat.colors(100) to heat.colors(50).



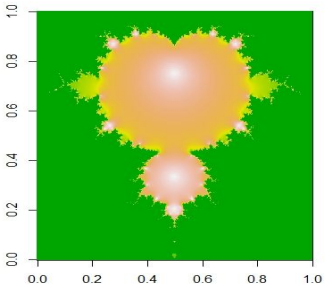
- Change **heat.colors(100) to heat.colors(50)** leads to less **heat** color degree of variations from the highest degree point to the least degree point. As **heat.colors(100) uses 100** variations of the color **heat.** Whereas, **heat.colors(50)** have only 50 variations of the color **heat.**

5. Change heat.colors(100) to each of the following:

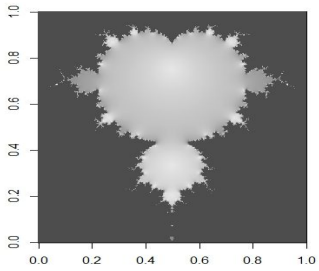
A. topo.colors(100)



B. terrain.colors(100)



C. gray.colors(100)



- We are changing the color of the points as we keep the degree of variations from the highest degree point to the least degree point.
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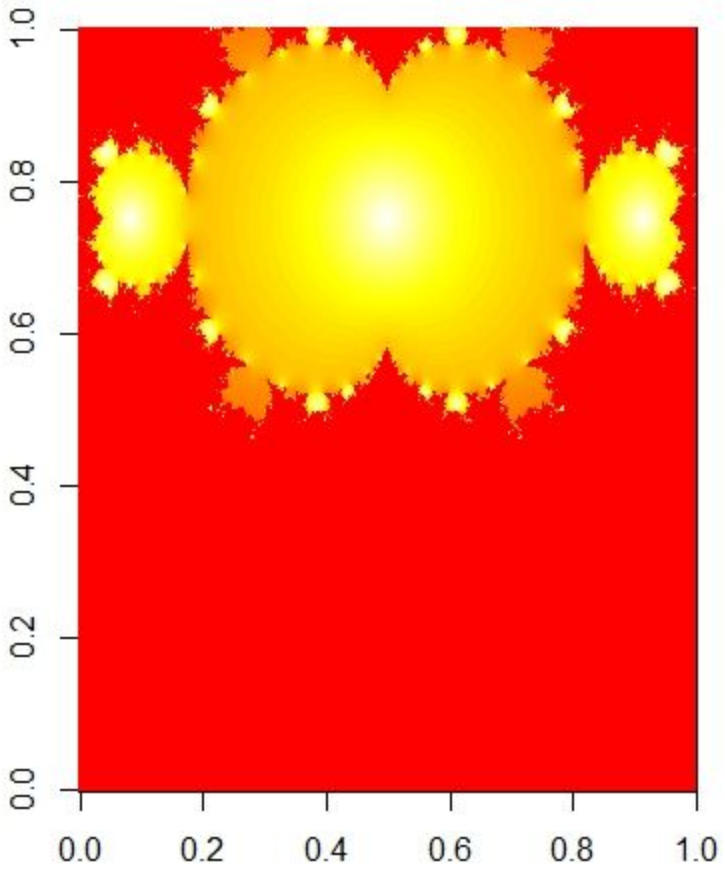
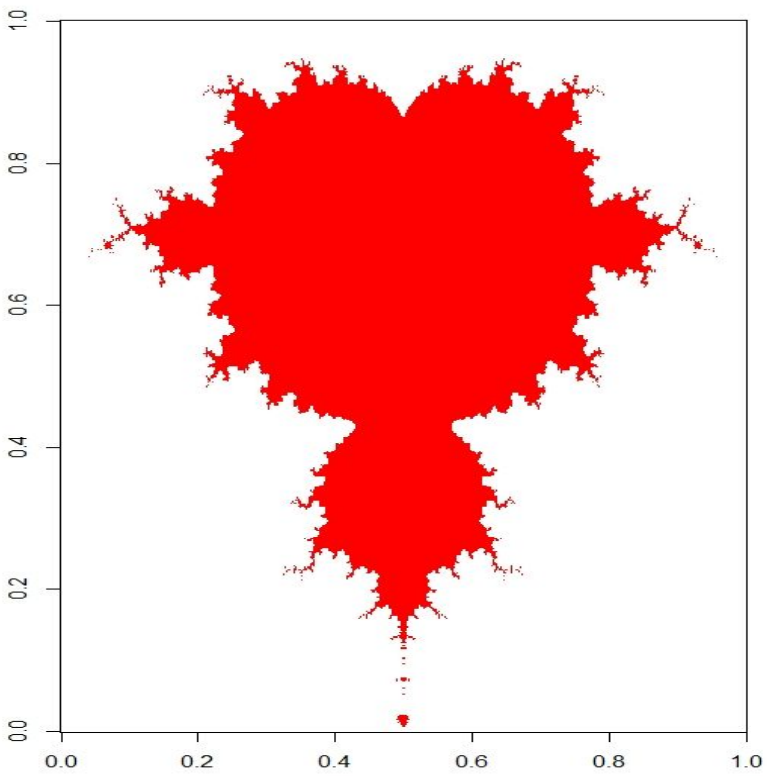
6. Change the expression in the for loop to Z <- Z^3 + C



- As we raise the degree of the parameter **Z,** a different shape appears in the image because every point has two parts: real and imaginary. Sometimes, summing two points may leads to increase the degree of the color and other times it may decrease the degree of the color or even cancel out each other.2

7. Changing exp(-abs(Z)) to exp(abs(Z))



- The command **exp(-abs(Z)) will** inverting degree of every point. For example if a point has a 5% degree of color, when inverted the point will have 95% as a degree of color.
- By deleting the minus sign as in the adjusted command **exp(abs(Z))**, it leaves every point as it is which makes the value that has 0 value be white which is the least degree instead of heat color which represent the max degree.