Project Documentation

The Mandelbrot Set

Team 3

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Project Description

The Mandelbrot Set describes the behavior of the complex-valued function $f(x) = x^2 + c$ under iteration. We want to create an application that will allow a user to specify an arbitrary plane in C^2 and render that slice of the Mandelbrot set that lies in that plane.

Exemplary Use-case

- The user will input a valid arbitrary plane
- The application will render a picture of the set that lies in the specified plane
- Depending on the plane given: the application will render the picture in a timely manner

Background

The Mandelbrot Set describes the behavior of the complex-valued function $f(x) = x^2 + c$ under iteration. It is a function of the initial input x and the offset c, both of which are complex numbers, making it a 4-dimensional object overall. The normal image that we see (the one that's our server icon) is the two-dimensional slice through the plane $c=0$.

History

- Modification
- Date