Specification

The project is going to be composed of four main parts. First we will be developing a C++ library that will deal with fractal generation. The user should be able to specify resolution. We also want a command line application which uses the aforementioned library to generate output. Next our goal is to create a Python package which is a simple wrapper for our C++ library. Finally we will create a web application whose backend will be written in python, using the Flask framework. This will use our Python package for fractal generation and also other packages for image processing (Figure 1.). The expected behaviour of our web application is summarized in Figure 1.

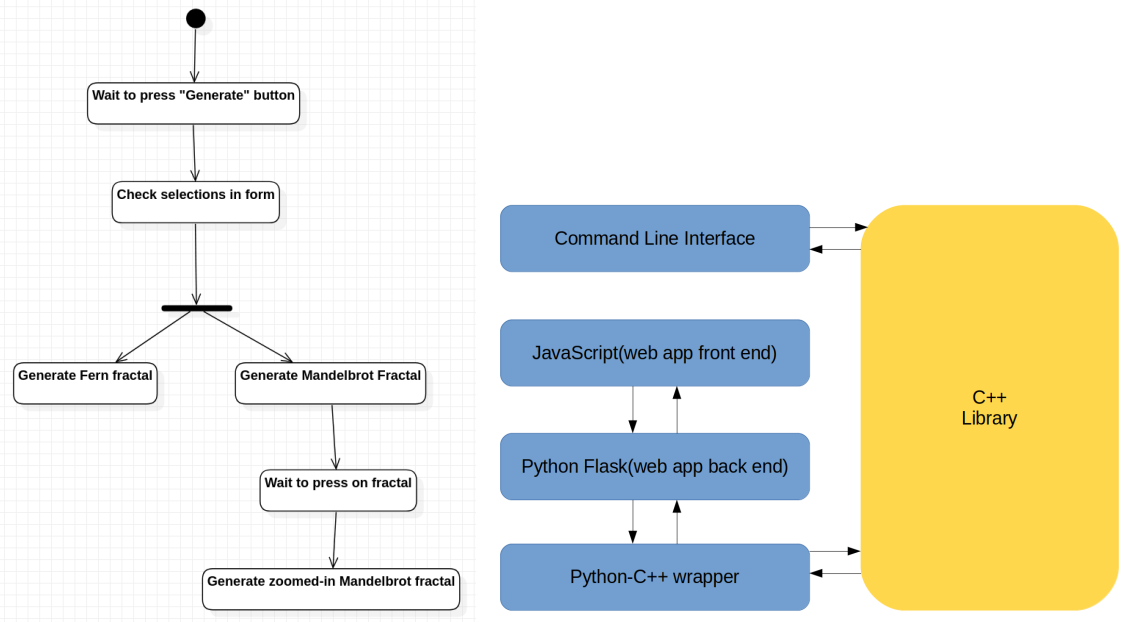

Figure 1.*: Left: Activity diagram of the project. On the website will be a form for selecting the desired properties of the fractal to generate. If the button is pressed the desired fractal will be generated. If the user selects mandelbrot, the zooming functionality will be also added. On click on the fractal the zoomed-in fractal will be generated. Right:* Specification diagram of the desired application.

The styling of our webpage is going to be made with the JavaScript and the CSS languages, where CSS is used to define directly the styles of an HTML document. On this website we will create different labels, where the user can select the type and the resolution of the fractal to be generated, and a button will be created for the generation, so by clicking on the button the fractal will be generated. For the zooming we will create a special rocket cursor, but we will also use different types of cursors. For the background we are going to set an animation with different colored balls. This website will also include a link to the documentation page.