

Chapter 1

Requirements

From my research and analysis I have created a set of requirements that I aim to fulfill. I have split these requirements into development iterations that they will be linked with. Each iteration has a theme that most of the requirements will follow.

- Iteration 1 - Emphasis on Core Functionality
 - Plot a explicit function in x
 - Plot multiple functions
 - Zoom in/out of the graph
 - Pan around the graph
- Iteration 2 - Emphasis on the User
 - Identify roots and turning points
 - Plot special functions such as trigonometric functions, logarithmics, modulus functions, etc.
 - Multiple plots that you can switch between
 - Save plots as pictures
 - Save workspace to resume later
 - \LaTeX equation support
 - Dark Theme
- Iteration 3 - Advanced Features
 - Identify intersections between functions
 - Differentiate explicit continuous functions with respect to x
 - Polar equations
 - Implicit equations
 - Parametric equations

I will use Java to accomplish this task. Java platform independent meaning that I do not have to compile for many different systems. It also means that if I want to create a mobile version I will only have to recreate the UI. Within Java I will use JavaFX for my UI. JavaFX allows for customisation of UI elements through CSS, as well as an easy interface to draw objects onto through the screen, through its Canvas class. I am also comfortable with the language which makes it the best language for this project.