

Advisor: Randy Appleton

Committee: Hadi Shafei , Jeffery Horn

Objective

The goal of my senior project is to create a viable text editor capable of satisfying basic tasks for which I believe a text editor should have. The project will take influence from other text editors such as both emacs and vim, both functionally and aesthetically. The reasoning behind this project is my desire to develop an application that I could use in everyday programming. Many text editors today I use, I dislike due to either them being slow or cumbersome with configuration. With myself writing a text editor I could fill my checkboxes for what I want while also learning about how to write fast and robust code. The project should fulfill the task of basic text editors today which would include file opening, file saving, text modification, basic syntax highlighting, reverse and forward search, replace, marking, and more.

Technologies

The project will be completely written in C. This choice comes from my desire for speed and control over memory especially when it comes to rendering the characters to the screen. The project will consist of two libraries, SDL2 and KiWi. For the source control of the project I will be using Git.

Learning Objectives

During the course of this project, I will have to obtain knowledge of the two libraries I will be using which are SDL2 and KiWi. In addition to this to further my knowledge about SDL2 I will research the graphics framework OpenGL to further understand how SDL2 populates the screen and to possibly implement speed ups from this knowledge. Prior to this project I have used C, but have rarely used memory to the extent in this project. Due to this, my learning objective regarding C is to become conscious of writing memory friendly code. One major goal for this project is to run it through a profiler and obtain an insight into slow downs and how to fix them to allow the editor to be as fast as possible. During this project I would like to improve my source control to help define major points during the production and to keep an active backup. Which is why for this project I will be using Git during its entirety.

Proposed Elements

Prerequisites

- Learn SDL2 and some basic OpenGL
 - Learn more about C memory management
 - Learn about KiWi and how to setup a viable gui
-

Character Rendering

- Use a font map to layout glyphs for each character
 - Render the characters to the screen via these glyphs
 - Implement cursor to keep track of position
 - Multiple rows
 - Hardware Accelerated
-

Features

- Common keyboard shortcuts such tab, alt + tab, Ctrl + s, Ctrl + c, etc
 - Console Key (Ctrl + x)
 - Arrow key movement
 - Delete word
 - Delete line
 - Marking (Emacs style)
-

GUI

- File (Open, Save, New)
 - Edit (Copy, Paste, Cut)
 - Command Console
-

Major Goals

- Ease of use
 - Fast
 - Profile Code
 - Multiplatform?
-