

Vim (Presentation #4)

Special Topics (CS3001)

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A Brief Introduction

They often say

"A Developer Is Only As Good As His Tools"

Although I don't agree with this sentiment, I always wanted to become better with tools I was constantly using. One of the tools I use most is my code editor: **Vim**.

A Brief Introduction

- Vim has been around since 1991, and is almost ubiquitous on all Unix machines. It has served mostly as a terminal text editor (see attached video).
- Also, Vim has greatly improved a lot since then, to incorporate many of the new features that IDEs and Text Editors have brought to the table.
- Along with that, a lot of projects have set out to make Vim look and feel more like a regular text editor (as apposed to a terminal editor).

A Brief Introduction

```

1 // matrix-base.h
2 //
3 // matrix-base.h
4 // lib
5 //
6 //
7 // Lilya Strikov/Rachel Mulligan, Section 1A, 10883141
8 // cs50s10 - Object Oriented Numerical Modeling
9
10 #ifndef matrix_base_h
11 #define matrix_base_h
12
13 #include "matrix.h"
14
15 // Forward Declaration For RectangularMatrix
16 template <class T>
17 class RectangularMatrix;
18
19 // ** Class: BaseMatrix
20 *
21 * - Brief A base that defines default behavior for a matrix
22 *
23 * - Stiparam T must have the following operations defined:
24 *   - Addition (+)
25 *   - Subtraction (-)
26 *   - Multiplication (*)
27 *   - Equal To (==)
28 *   - Less Than (<)
29 *   - Greater Than (>)
30 *   - Negation (-T)
31 *
32 //
33 template <class T>
34 class BaseMatrix : virtual public Matrix<T> {
35     static T zero;
36
37 public:
38     template <class S> friend bool operator==(const BaseMatrix<S> & lhs, const BaseMatrix<S> & rhs) {
39         return lhs == rhs;
40     }
41     template <class S> friend RectangularMatrix<S> operator+(const BaseMatrix<S> & lhs, const BaseMatrix<S> & rhs) {
42         return lhs + rhs;
43     }
44     template <class S> friend RectangularMatrix<S> operator-(const BaseMatrix<S> & lhs, const BaseMatrix<S> & rhs) {
45         return lhs - rhs;
46     }
47     template <class S> friend RectangularMatrix<S> operator*(const BaseMatrix<S> & lhs, const BaseMatrix<S> & rhs) {
48         return lhs * rhs;
49     }
50     template <class S> friend Vector<S> operator*(const BaseMatrix<S> & lhs, const Vector<S> & rhs) {
51         return lhs * rhs;
52     }
53     template <class S> friend RectangularMatrix<S> operator*(const Vector<S> & lhs, const BaseMatrix<S> & rhs) {
54         return lhs * rhs;
55     }
56     template <class S> friend bool isDiagonallyDominant(const BaseMatrix<S> & matrix) {
57         return isDiagonallyDominant(matrix);
58     }
59     virtual T zero() const noexcept override;
60
61     template <class S> friend std::ostream& operator<< (std::ostream& os, const BaseMatrix<S> & matrix) {
62         return os << matrix;
63     }
64
65 #include "matrix-base.hpp"
66
67 #endif // matrix-base.h

```

```

> Press ? for help

.. (up a dir)
</2010-sp-a-hw6-isgx2/lib/
> exceptions-
  banded-matrix.h
  banded-matrix.hpp
  diagonal-matrix.h
  diagonal-matrix.hpp
  eigen.h
  matrix-base.h
  matrix-base.hpp
  matrix.h
  rectangular-matrix.h
  rectangular-matrix.hpp
  symmetric-matrix.h
  symmetric-matrix.hpp
  vector.h
  vector.hpp

```

```
NORMAL +0 -2 -0 | master /Users/starboy/Desktop/ninjas/2018-sp-a-hw6-1sgx2/lib/matrix-base.h
```

```
cpp utf-8(unix) 15% == 9/58 ↓ : 1
```

NERD

Prior Knowledge

- I've been using Vim since my freshmen year. However, I never worked with the advanced features of Vim, only the top level features.
- I knew that Vim had an expansive feature set, and I wanted to dive into that.

Motivation

- Upon graduation, I will likely be using Vim full time at my time at Garmin.

Goals

- To become more efficient at using Vim.
- To become familiar with the modern parts of Vim.
- To learn more of the keystrokes and shortcuts for Vim.

Resources

- A lot of the learning came from playing around with Vim. Anytime I found myself doing something repetitive, I simply tried to find a way to automate. Most of the time, there was a way.
- Book Resources (That I Actually Bought!):
 - [Modern Vim](#)
 - [Practical Vim](#)
- Online Resources:
 - [The Vim Subreddit](#), for everyday improvements or general knowledge on Vim.
 - [VimCasts](#), for when I want to get a deeper look into a subject.
 - [Vim Adventures](#), a little game to help understand Vim through a text adventure.

Goal Accomplishment

- I am much more fluent in using Vim, using shortcuts that significantly improve my workflow.
 - See attached videos for details.
- I have also learned to use plugins, to do completions.
- I have also learned to use many of the different parts of Vim I was unfamiliar with, such as:
 - Buffers
 - Registers
 - Advanced Search
 - Tags

And a lot more!

Side Note

```
presentation-4.tex
\begin{itemize}
\item \href{https://www.reddit.com/r/vim/}{The Vim Subreddit}, for everyday improvements or general knowledge on Vim.
\item \href{http://vimcasts.org/}{VimCasts}, for when I want to get a deeper look into a subject.
\item \href{https://vim-adventures.com/}{Vim Adventures}, a little game to help understand Vim through a text adventure.
\end{itemize}
\end{frame}
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\frametitle{Goal Accomplishment}
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\begin{itemize}
\item Buffers
\item Registers
\item Advanced Search
\item Tags
\end{itemize}
\end{itemize}
\end{frame}
\begin{frame}
\frametitle{Side Note}
\begin{figure}[H]
\centering
\includegraphics[width=0.8\linewidth]{presentation}
\caption{The entirety of this presentation was made in Vim!}
\end{figure}
\end{frame}
\begin{frame}
\frametitle{In Closing}


All question, comments, and insults can be directed towards me:



\begin{center}
\begin{description}
\item {\faComment} \href{mailto:starkov@st.edu}{starkov@st.edu} | starkov@st.edu
\item {\faLinkedin} \href{https://www.linkedin.com/in/allixstarkov/}{https://www.linkedin.com/in/allixstarkov/} | Iliya Starkov
\item {\faGithub} \href{https://github.com/IliyaStarkov/IliyaStarkov}{https://github.com/IliyaStarkov/IliyaStarkov}
\item {\faRSS} \href{https://rreanaticarray.com/}{https://rreanaticarray.com/}
\end{description}
\end{center}
\end{frame}
```


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Figure: The entirety of this presentation was made in Vim.

In Closing

All question, comments, and insults can be directed towards me:

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 [FreneticArray.com](#)