

CMPSC 290
Principles of Software Development
Fall 2013

Laboratory Assignment Two: Using Vim as an Integrated Development Environment

Introduction

Practicing software engineers normally use an integrated development environment (IDE) to manage various tasks associated with the design, implementation, and testing of software. In this course, we will use Vim as an IDE. In this laboratory assignment, you will work with your team members to learn about the basic features associated with Vim and prepare a tutorial that explains how to use Vim runtime configuration files and plugins to manage tasks in the software development life cycle. Students should program the HTML-based tutorial slides using Vim.

Learning the Basics of Vim

Before you start to use Vim during this laboratory assignment, you may want to review some of the reason why people like to use this text editor, as explained at <http://usevim.com/2012/10/26/why-vim/>. When you are finished learning about some of the reasons behind using Vim, you can start to use the Vim text editor in a terminal window or the GVim text editor in a stand-alone window. Please work with your team members to identify, learn, and document some of the basic features that are offered by Vim. For instance, make sure that you know how to perform the following actions. Students are encouraged to learn how to use Vim with key commands.

1. Open, close, and save files in windows or tabs
2. Move to the beginning and end of a file
3. Navigate to specific lines and columns within a file
4. Enter and exit command mode
5. Enter and exit insert and append mode
6. Select line(s) of text in visual mode
7. Copy, paste, and delete lines of text
8. Undo the result of a previous command
9. Search for and replace specific words in a file
10. Additional features that your team deems to be useful

Since we will be using Vim throughout the semester, please make sure that you can easily invoke all of the editor's most important commands. You should take notes and screenshots to demonstrate that your team understands how to use basic Vim commands. Then, your team members must work together to create a simple presentation that explains these commands.

Using Runtime Configuration Files

It is very easy to configure Vim by writing VimScript in your `.vimrc` and `.gvimrc` files. To complete the next phase of the assignment you should download the file <http://www.cs.alleggheny.edu/~gkapfham/teach/cs290f2013/labs/lab2/provide/vim-cs290F2013.tar.gz>. After saving this file to the root of your home directory, you should decompress it using the `tar` command in your terminal window. Now, please restart Vim. Do you see that the color scheme is different? If you would like, you can customize the color scheme by using the “Edit” and “Color Scheme” menus.

What other features have now been added to Vim? To learn more about how I have configured Vim for use in Computer Science 290 Fall 2013, you should study the VimScript in the `.vimrc` and `.gvimrc` files. Make sure that you and your team members understand these configuration files.

Using Plugins to Extend Vim

We will use a variety of Vim plugins to ensure that Vim can operate as a full-fledged integrated development environment when you complete the laboratory assignments and the final project. In this phase of the assignment, you are responsible for learning how to use all of the plugins in the following list. Next, you should prepare a tutorial that explains the inputs, outputs, and behavior of the key features offered by the each plugin. Finally, you should learn more about how Vim supports the installation of plugins through the use of either Vundle or VAM.

1. fugitive
2. ctrlp.vim
3. vim-session
4. tagbar
5. gitv

Summary of the Required Deliverables

This assignment invites your team to submit one printed version of a tutorial that contains:

1. A description of the basic features associated with the Vim text editor
2. A description of how Vim uses runtime configuration files
3. A complete introduction to the use of Vim plugins

You must also ensure that the instructor has read access to your Bitbucket repository that is named according to the convention `cs290F2013-lab2-team k` , with k representing the number of your assigned team. Each team should submit both the source code and the browser-rendered version of their slides. At the start of the next laboratory session, team 1 will present the basics of using Vim, team 2 will explain the use of runtime configuration files, and teams 3 through 7 will each demonstrate the use of one plugin. Please see the instructor if you would like to print your tutorial slides in color or you have questions about the presentations that you will give next week.