Tutorial II. VIM editor

1. Historical retrospectives

2. Basics

3. Architecture and Code base

4. How does VIM talk to NetBeans?

Historical perspectives
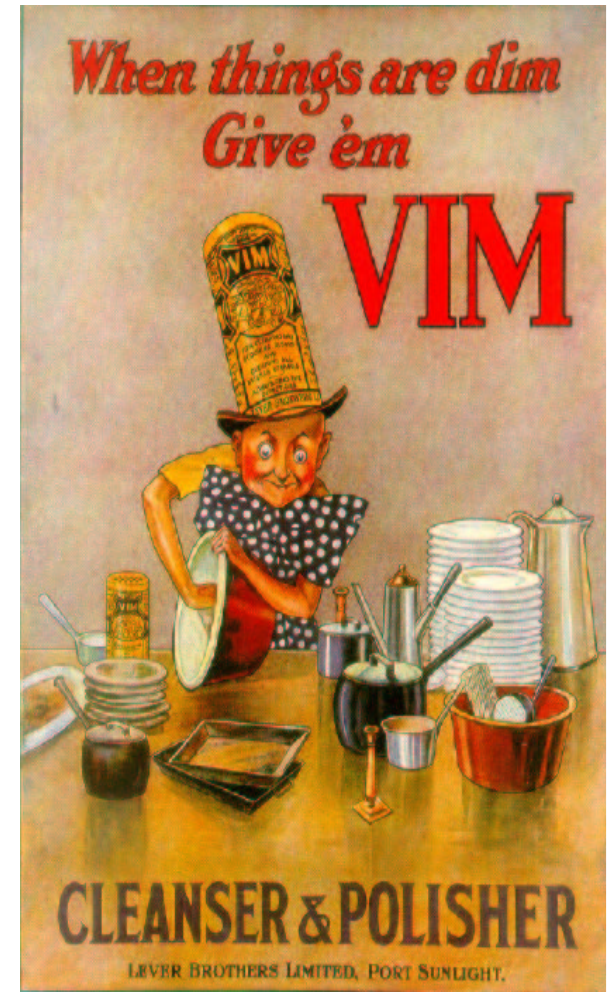
- Vi(ew) is a popular programmer's text editor in Unix, with many clones
- http://www.vim.org: Vi Improved, an open-source project started by Bram Moolenaar. Now VIM is the de facto Vi !
- Current release: 6.3
- It has been ported to dozens platforms
- You have it in CDF: /usr/bin/vim 6.3.13
- The source code is at ~yijun/src/vim63/src

Basics

- At command line, start by vim<ENTER>
- Type :help<ENTER> to get an online hypertext help, which has all explanations
- Type :help tutor<ENTER> to get a quick tutor session
- Surf http://www.vim.org/6kbyte.php to find a brief introduction in your native language
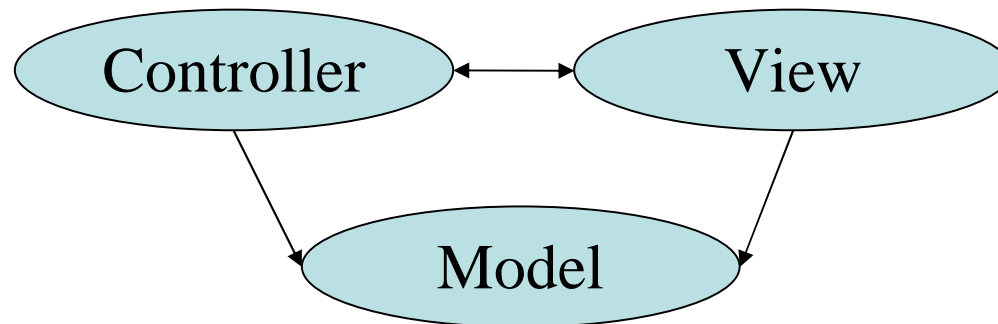- Surf http://www.vim.org/tips/index.php to find more tips on the VIM usage

Features

- :help feature

- Most notable features:
  - Syntax highlighting
  - Multiple buffers, views, and folding
  - Searching with regular expressions
  - Auto-indenting
  - Clipboard and registers
  - Macros and scripts

- Try GVIM if you want to use more GUI features

Architecture of VIM

- See references at end of slides....
- We consider MVC architecture
- VIM is not quite MVC... but close

Understanding VIM code base

- ls vim63/src/*.h vim63/src/*.c
- What are the basic files? vim src/README.txt
- What is the design? :help development
- How does VIM talk to other tools?
  - Environment: scripting and shell
  - Files: fileio
  - Other IDE
- Can you relate these files to the MVC components?
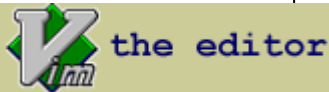
How does VIM talk to NetBeans?

- netbeans.c

- The editor integration protocol (based on socket programming): org.netbeans.modules.emacs

- How does this protocol work?

- How to replace it with web services programming?

VIM and NetBeans IDE

External editor protocol

netbeans.c

the editor

org.netbeans.modules.emacs

netBeans.ORG

A look at netbeans

- We can get Beans IDE to use VIM
  – The external editor module should set it for you
  – ~yijun/software/NetBeans3.6/bin/runide.sh

- Unfortunately, not easy to twist Beans IDE for webservice

- VIM support for netbeans is incomplete

A closer look at netbeans

- The protocol is text-based!
  http://externaleditor.netbeans.org/ExtEdProtocol.html

- And VIM documents what is/isn't done!
  http://www.vim.org/htmldoc/netbeans.html

A hacky demo

- ## We can write a simple server to listen...

- ## We can make vim hook to any port...
  ```
  gvim -nb:<host>:<port>
  ```

- ## Try to issue commands!
  ```
  1:editFile!1 "simplesrv.c"
  1:getText/2
  1:getCursor/3
  1:startDocumentListen!4
  1:stopDocumentListen!5
  ```

So what?

- Current netbeans.c isn't enough
- But can be a great starting point
- Any other examles?

How does VIM talk to other environments

- Sun Workshop: integration.c, workshop.c
- TCL: if_tcl.c
- TCL/TK + X Windows command server: if_xcmdsrv.c
- Windows: os_win32.c, term.c
- Visual Studio: VisVim plugin, Tip# 580
- Eclipse: viPlugin: http://satokar.com/viplugin/index.php
- *Can we have better solution?*

References

- J. B. Tran, M. W. Godfrey, E. H. S. Lee, and R. C. Holt. "*Architecture analysis and repair of open source software*". In Proc. of 2000 Intl. Workshop on Program Comprehension (IWPC'00), Limerick, Ireland, June 2000

- http://plg.uwaterloo.ca/~migod/papers/iwpc00.pdf

References

- *"Secrets from the Monster: Extracting Mozilla's Software Architecture"*, by Michael W. Godfrey and Eric H. S. Lee, Proc. of the Second Intl. Symposium on Constructing Software Engineering Tools (CoSET-00)

- http://plg.uwaterloo.ca/~migod/papers/coset00.pdf