# Powerful tools for Linux C/C++ developers in Eclipse

FOSDEM 2012

Andrew Overholt
Red Hat

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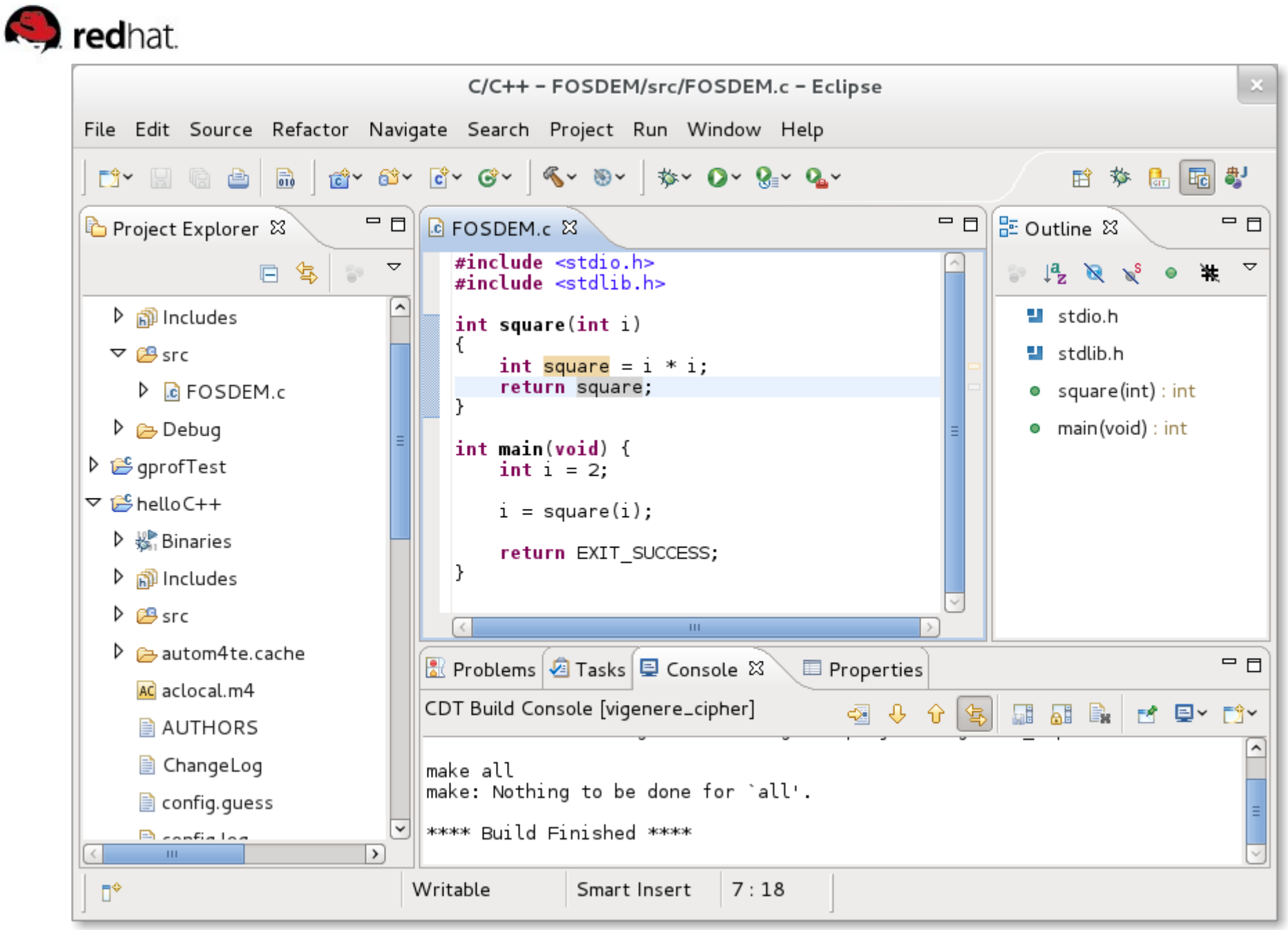
# C/C++ Development

- Editing
- Building
- Debugging
- Profiling


redhat.
C/C++ – FOSDEM/src/FOSDEM.c – Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
Project Explorer
Includes
src
FOSDEM.c
Debug
gprofTest
helloC++
Binaries
Includes
src
autom4te.cache
aclocal.m4
AUTHORS
ChangeLog
config.guess
FOSDEM.c
#include <stdio.h>
#include <stdlib.h>
int square(int i)
{
int square = i * i;
return square;
}
int main(void) {
int i = 2;
i = square(i);
return EXIT_SUCCESS;
}
Outline
stdio.h
stdlib.h
square(int) : int
main(void) : int
Problems Tasks Console Properties
CDT Build Console [vigenere_cipher]
make all
make: Nothing to be done for `all'.
**** Build Finished ****
Writable
Smart Insert
7 : 18

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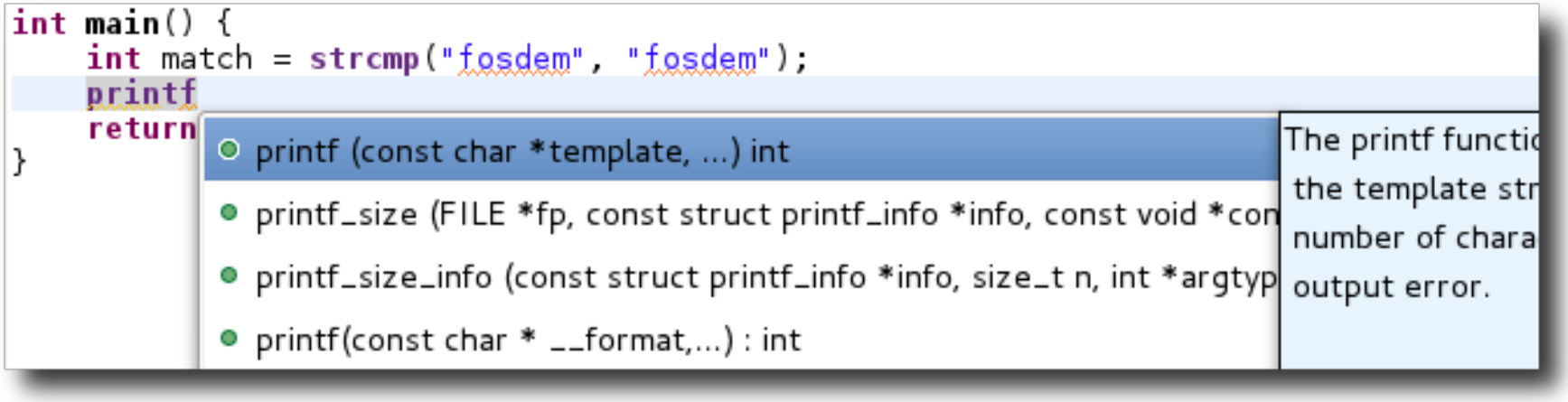
# Code Completion




# Ctrl-<Spacebar>

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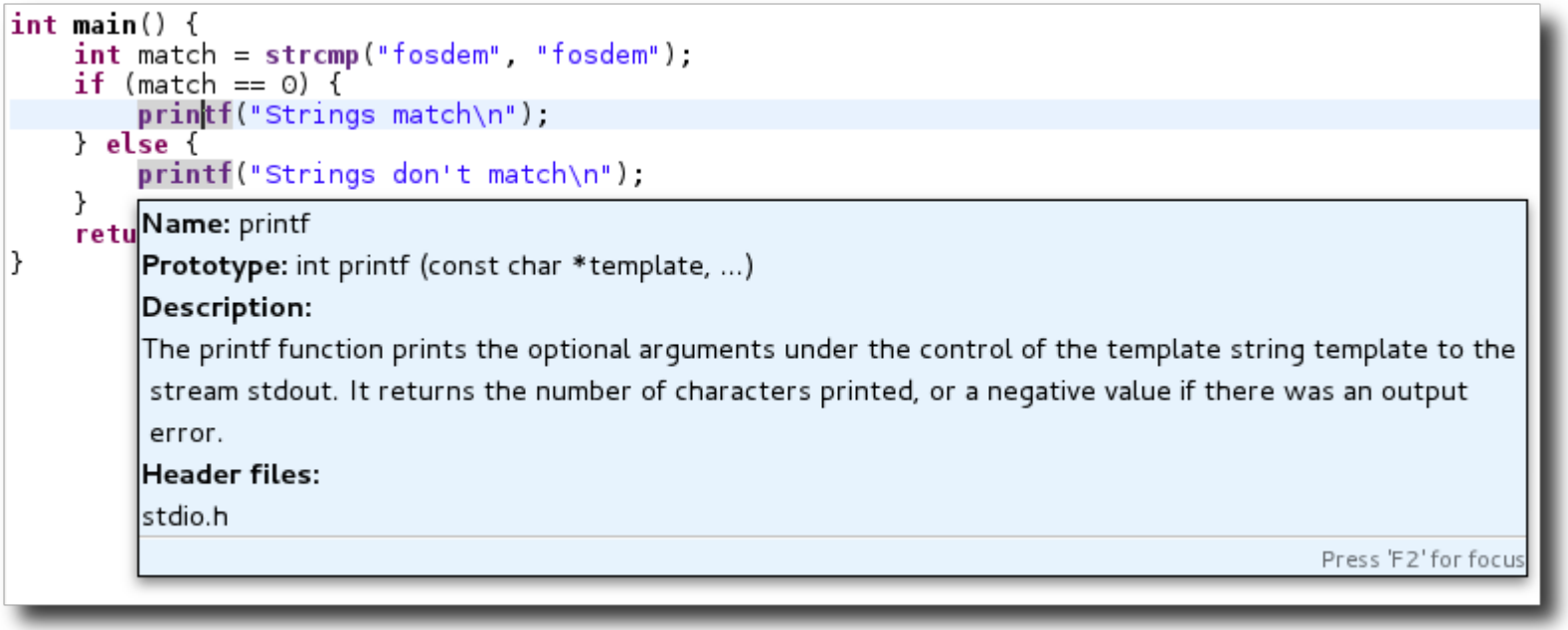
# API documentation



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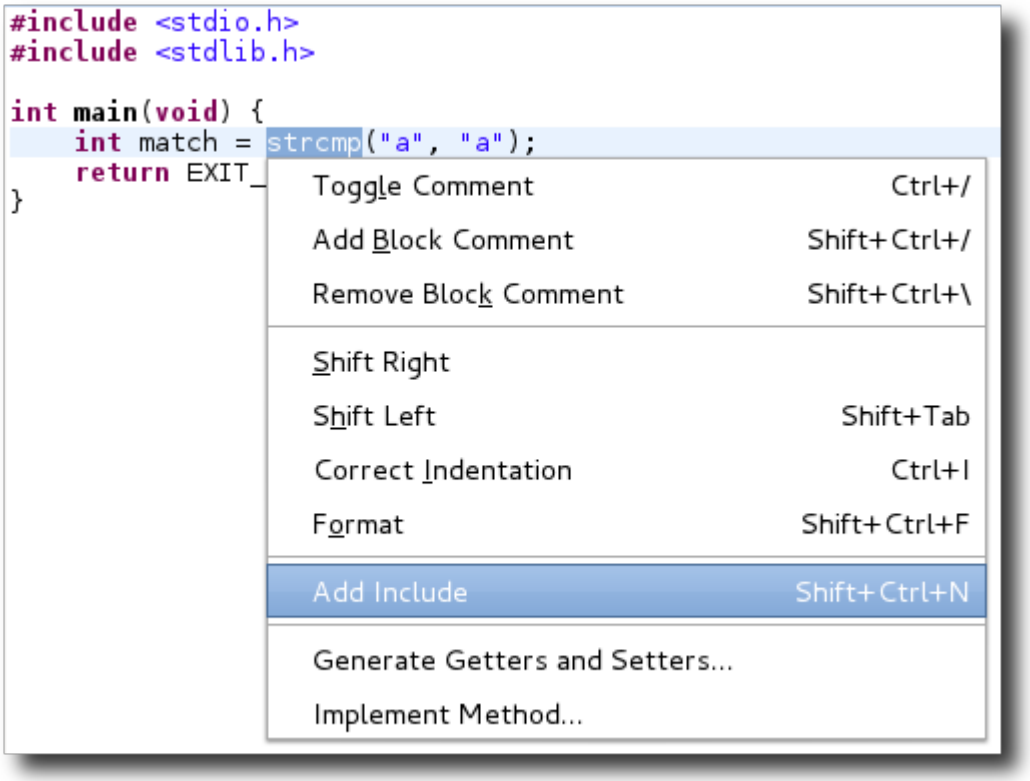
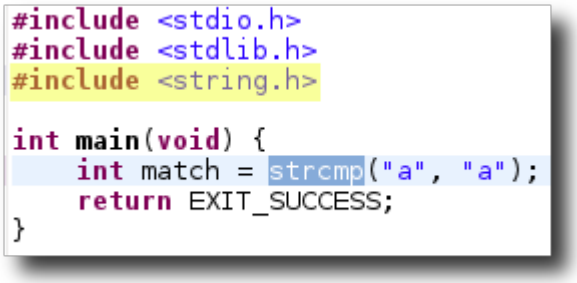
# Add #include



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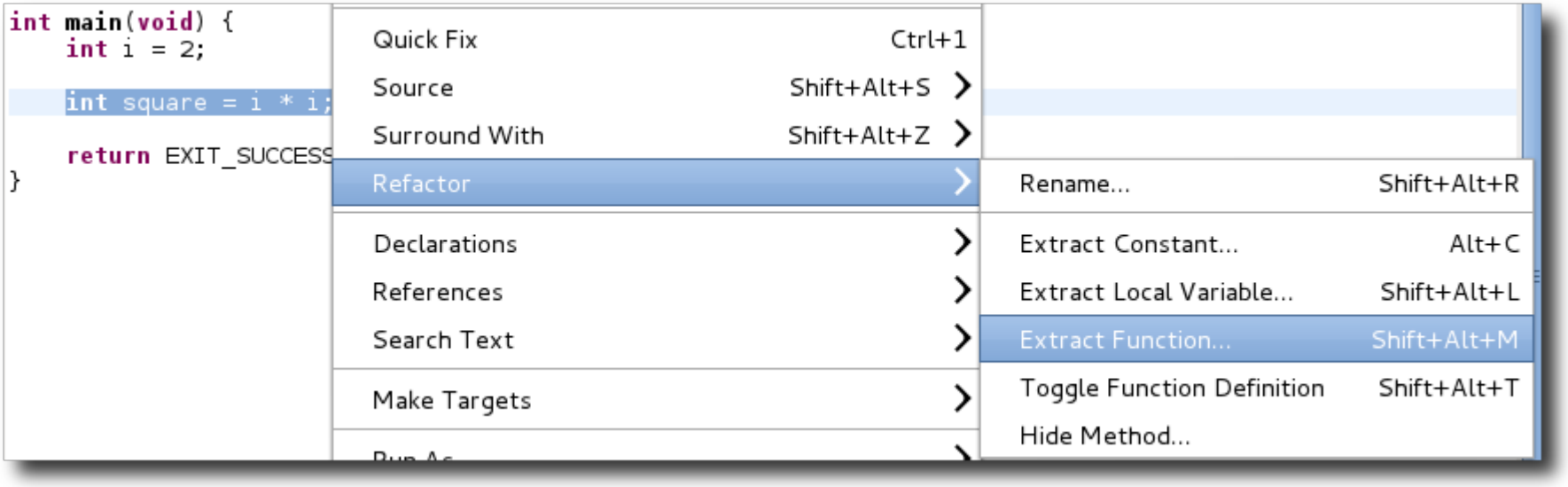
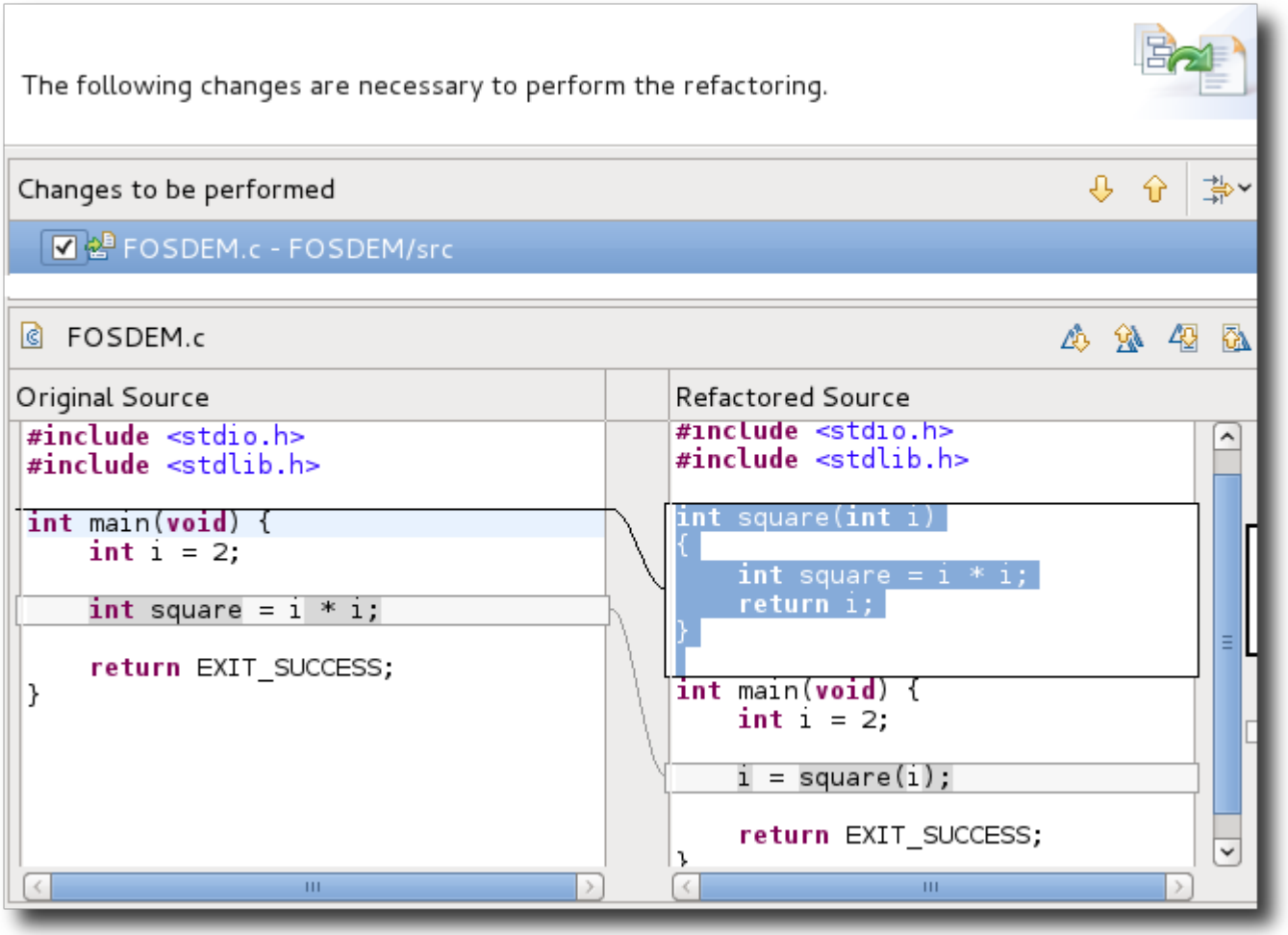
# Refactoring



redhat.

# Refactoring



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# Refactoring

```c
int main(void) {
    int i = 2;

    int square = i * i;

    return EXIT_SUCCESS;
}
```

```c
int square(int i)
{
    int square = i * i;
    return i;
}

int main(void) {
    int i = 2;

    i = square(i);

    return EXIT_SUCCESS;
}
```

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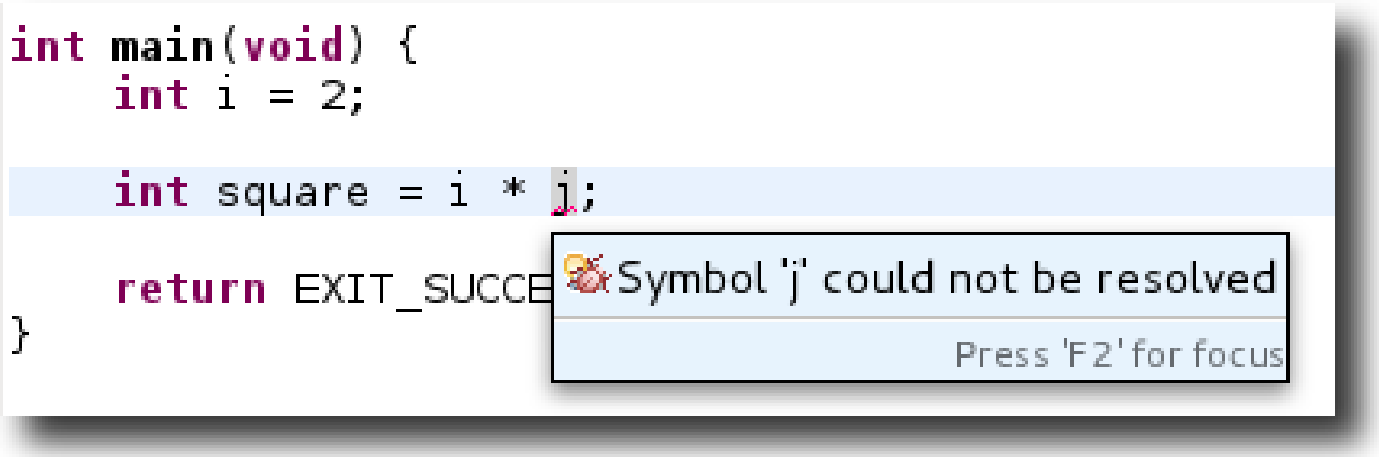
# Error Highlighting



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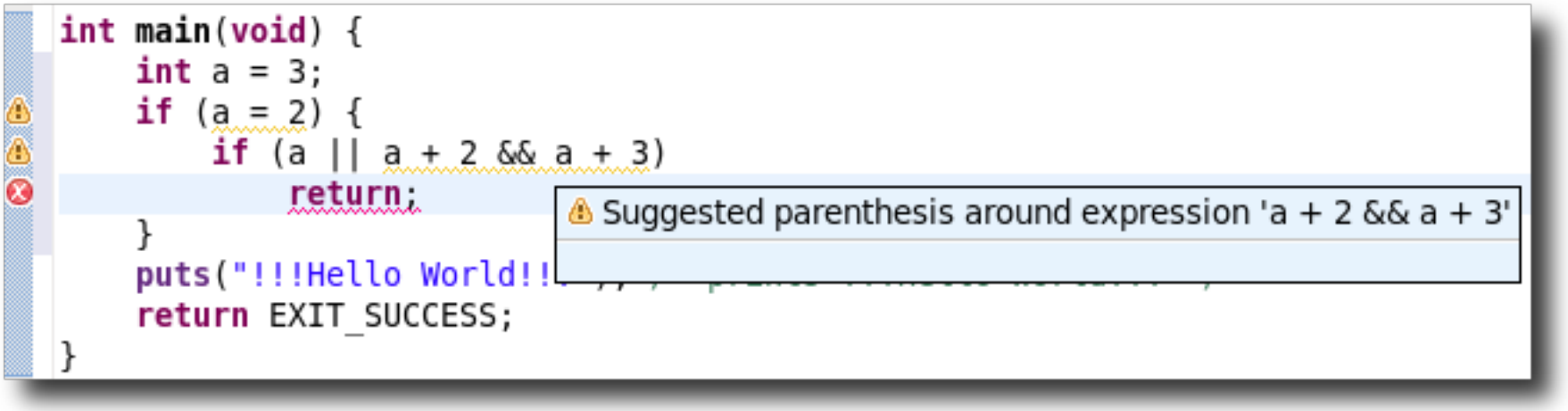
# Static Analysis



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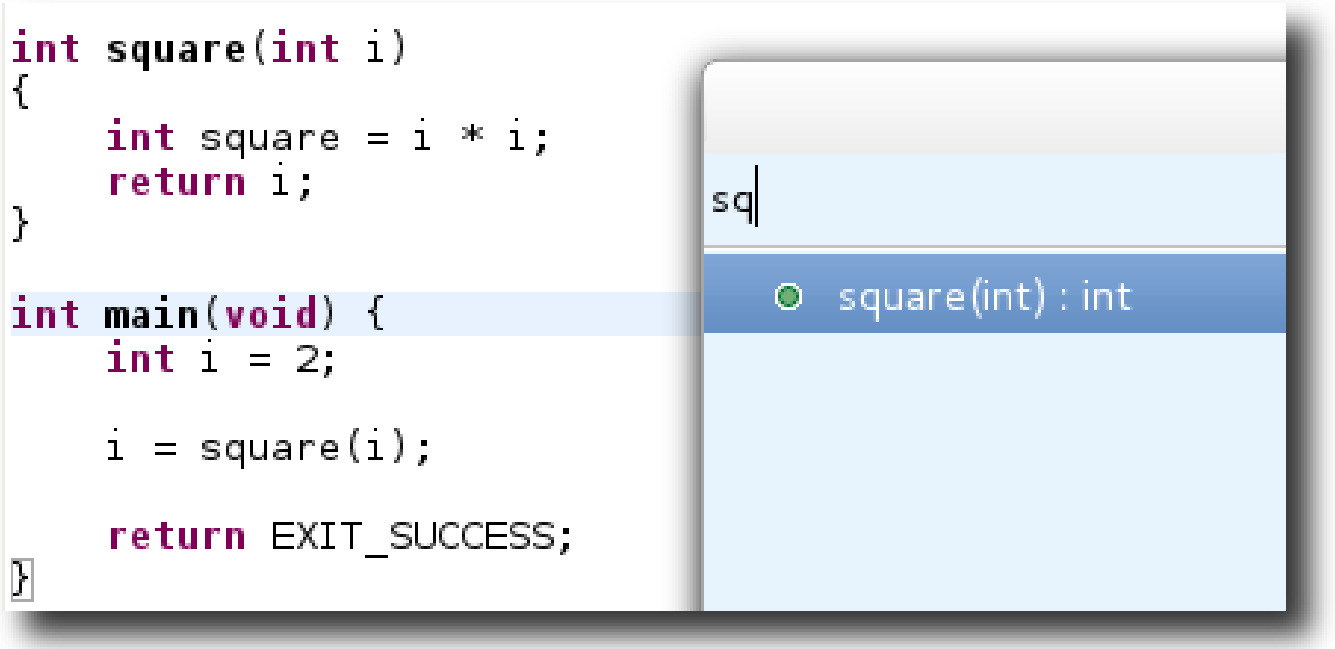
# Outline




# Ctrl-o –
# Quick Outline

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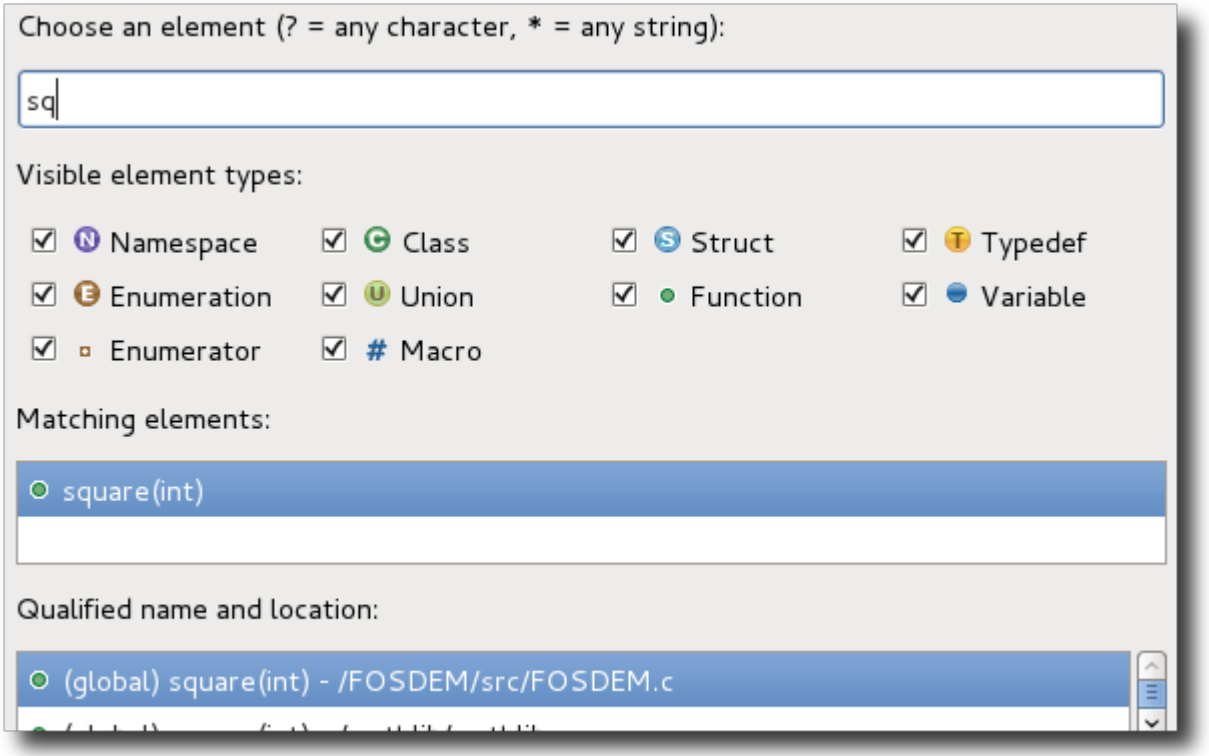
# Navigation




# Ctrl-Shift-t – Open Element

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# Building

- gcc
- Makefiles
- GNU Autotools

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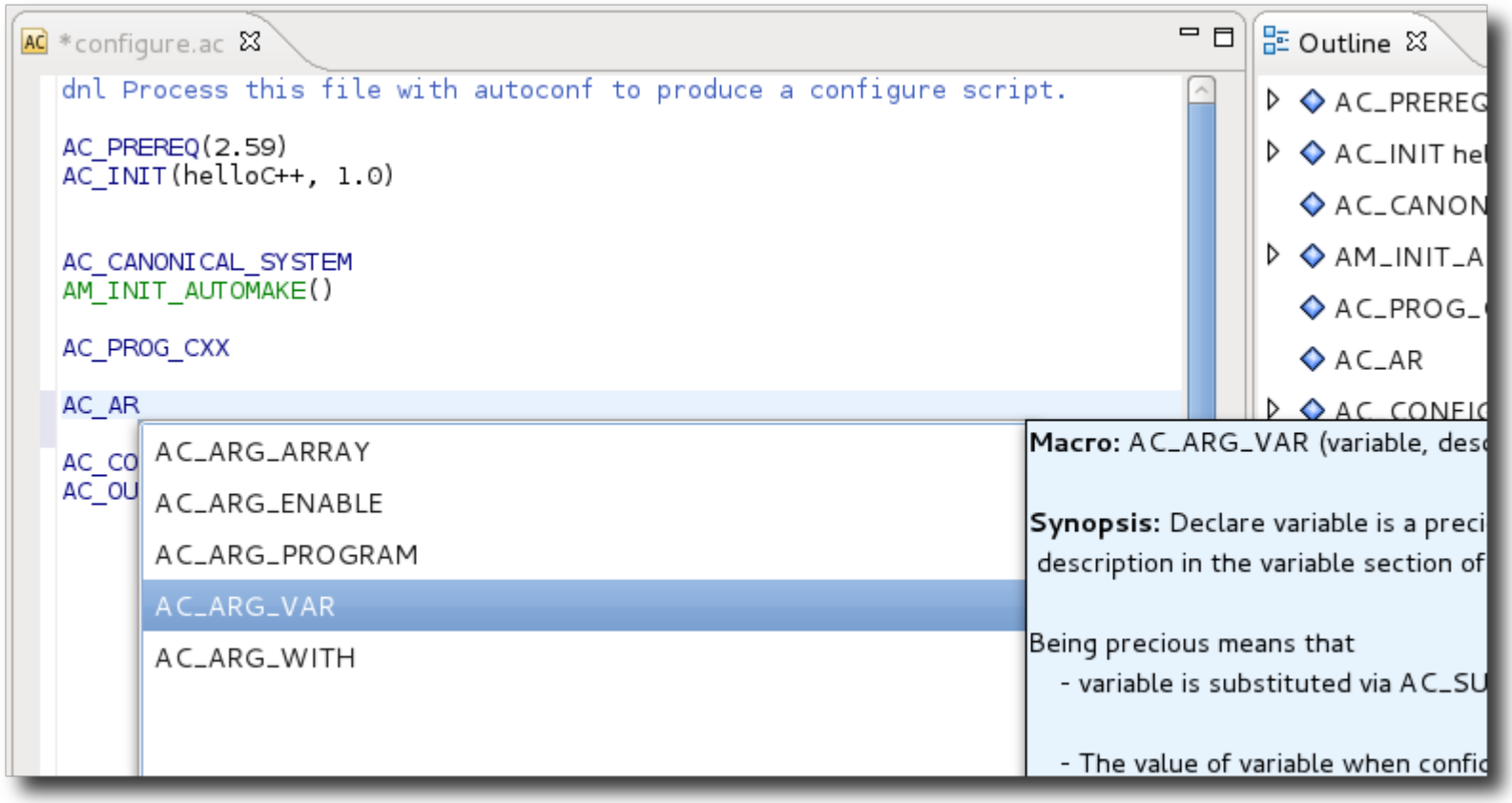
# autoconf completion



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# Build System Future

- install dependencies listed in pkg-config information (configure.ac) and build logs
- management of changes required in multiple files (ex. configure.ac and Makefile.am)

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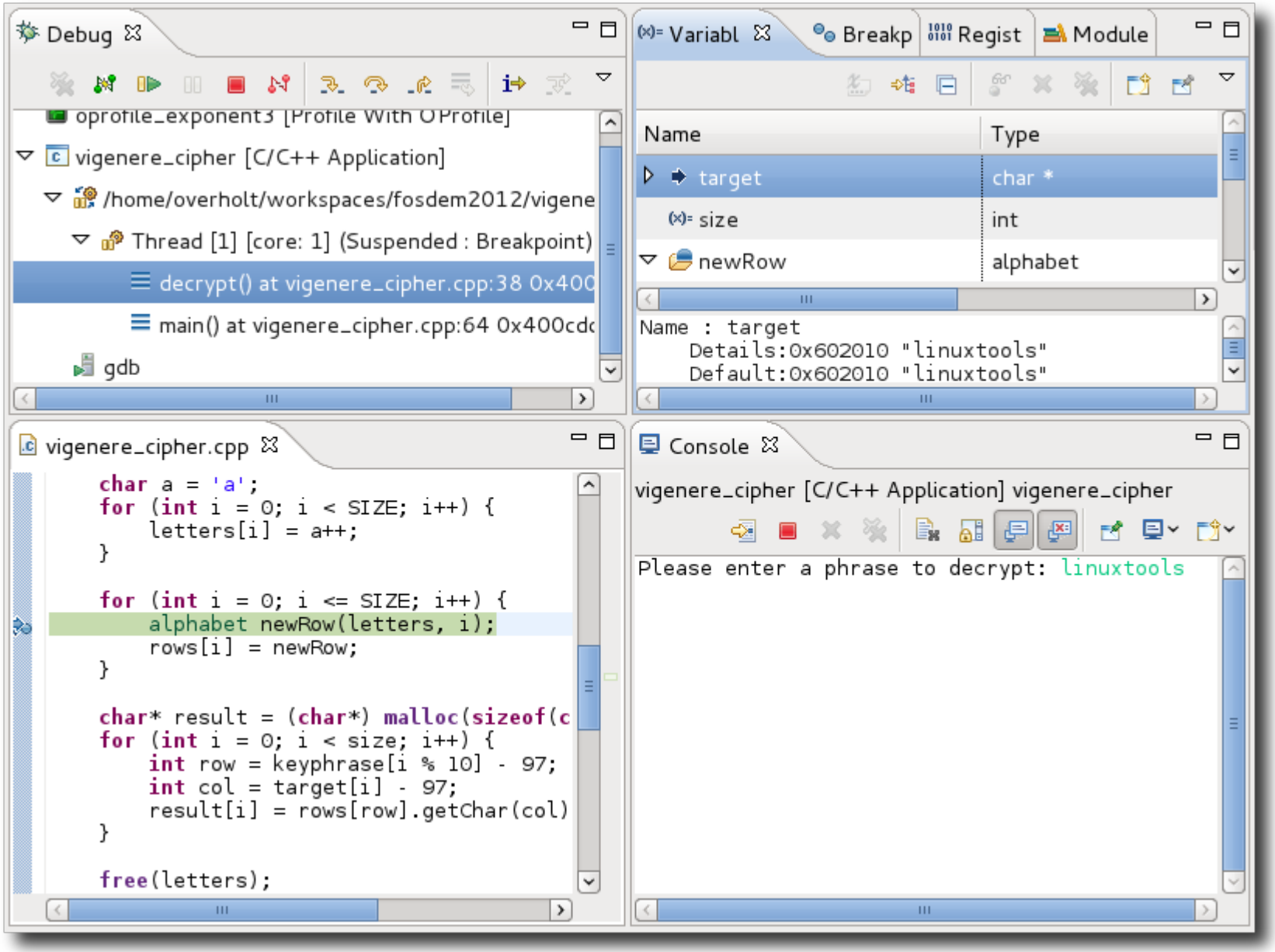
# Debugging



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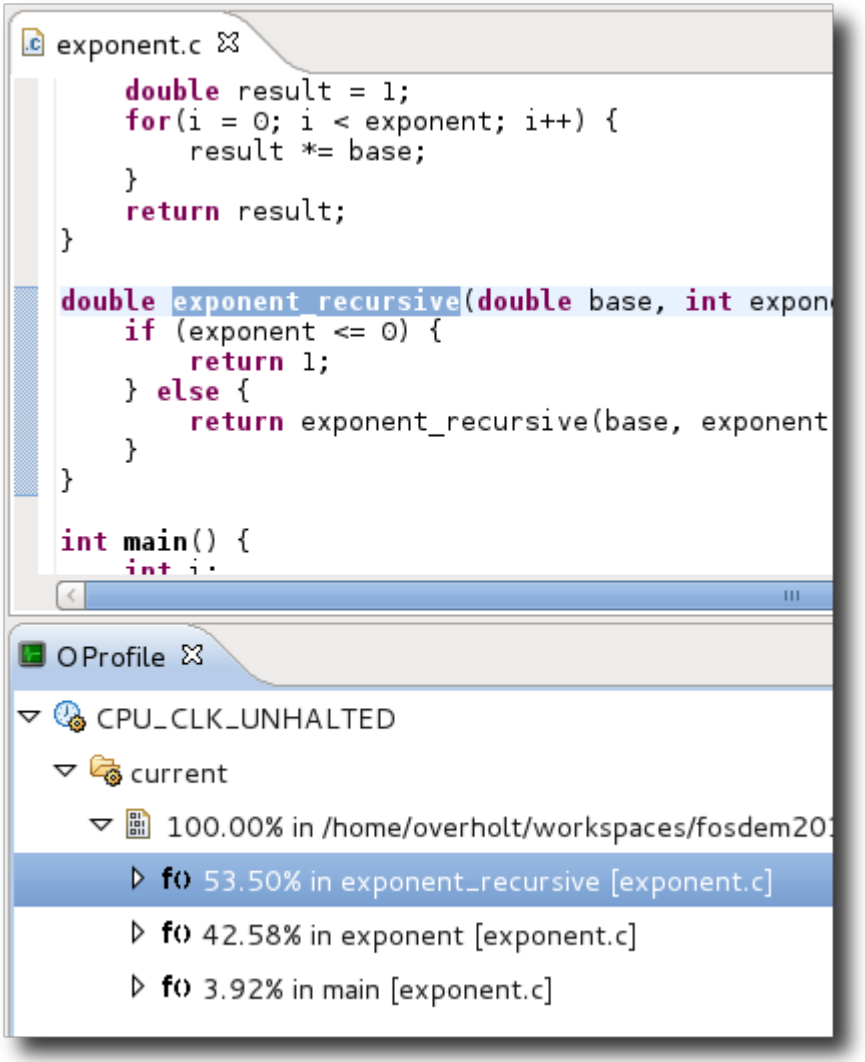
# OProfile



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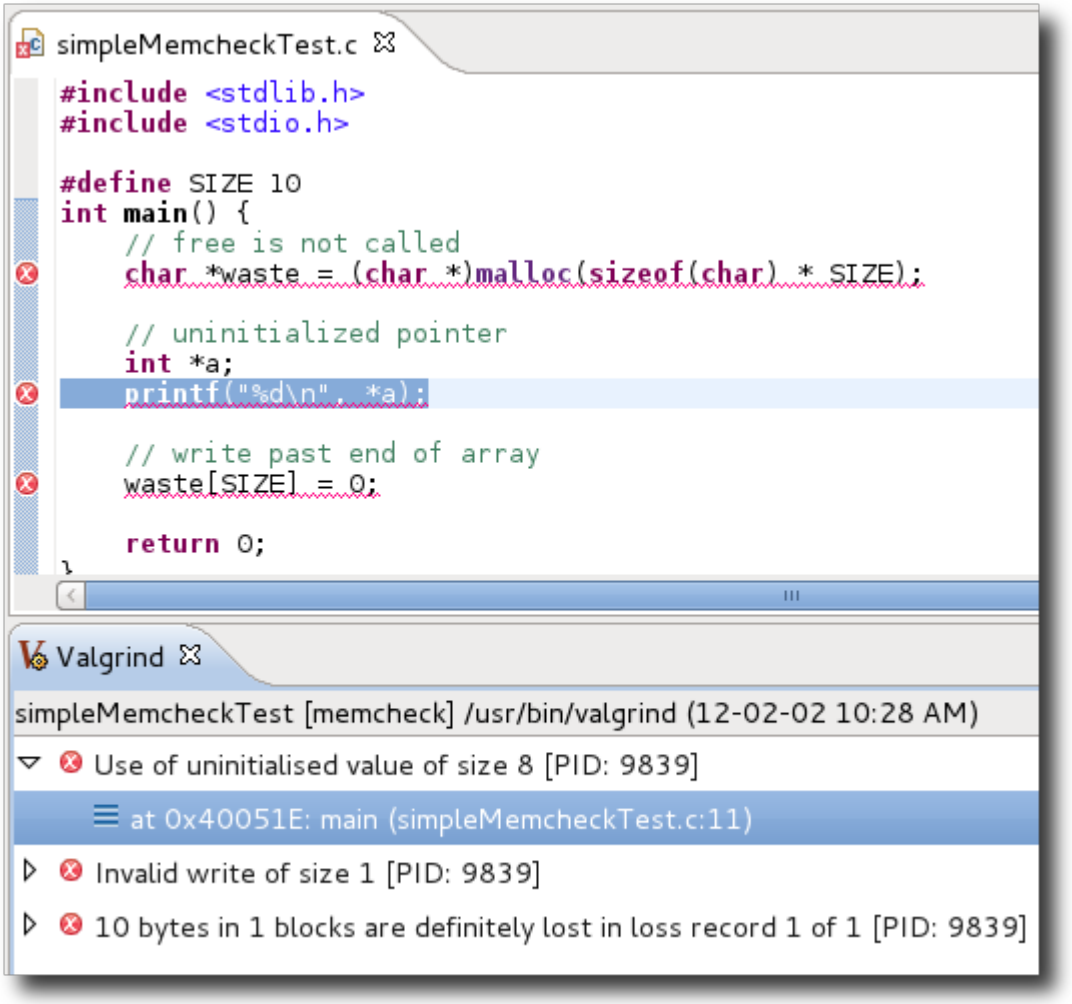
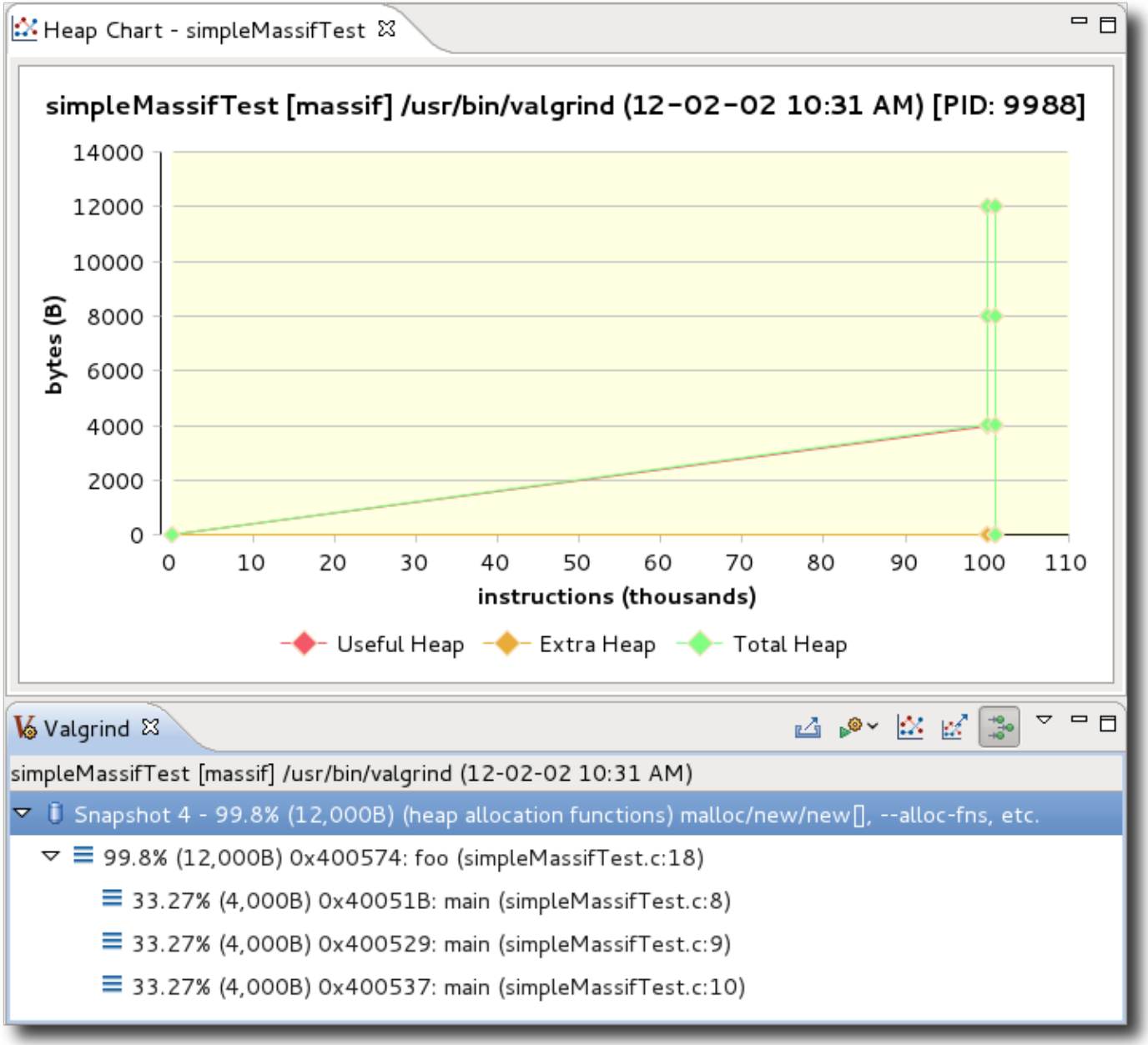
# Valgrind Memcheck



# Valgrind Massif



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# Future

- perf
- remote
- VM integration?
- <your ideas here>

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# Other stuff

- git
- Bugzilla/JIRA/Trac
- RPM tools
- a whole lot more

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# Join us

- We welcome contributors of all forms!
  - Bug filers and feature requesters
  - Testers
  - Developers
  - Designers
  - Writers

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# Contact Information

- Eclipse
  - http://www.eclipse.org
- CDT
  - http://www.eclipse.org/cdt
- Linux Tools Project
  - http://www.eclipse.org/linuxtools