

Development Tools 3: IDE's

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IDE's

There are a number of IDE's that can be used for C development in Linux, some FOSS and some not (or not "fully free").

Among the FOSS IDE's found in most distros are:

- **Anjuta** – GNOME IDE for C/C++, uses GCC
- **Bluefish** – IDE for web and C/C++/etc, uses GCC
- **Builder** – GNOME IDE for GNOME apps, uses CLANG
- **Code::Blocks** – C/C++ IDE, uses GCC
- **CodeLite** – C/C++ IDE, uses GCC
- **Eclipse** – C requires **CDT** plugin, uses GCC
- **Geany** – editor/lite IDE, uses GCC
- **KDevelop** – KDE IDE for C/C++/PHP, uses GCC
- **NetBeans** – requires **Bundle for C/C++**, uses GCC

IDE's (contd.)

Other “free of cost” IDE's not found in most distros:

- **Atom** – Github developed IDE, supports C/C+/etc
- **Visual Studio Code (vscode)** – free offering from MS

Other *non-free* options:

- **CLion** – 30-day free evaluation
- **Sublime Text** – free evaluation with popups

IDE Selection

The best IDE to use (if any), depends on many factors.

Some people may be perfectly happy using a powerful *text editor*.

A key issue is previous familiarity, since IDE's can involve fairly steep learning curves due to their extensive features.

Another key issue may be the programming languages that are supported (doesn't typically make sense to have to switch IDE's to code with different languages).

Yet another issue is whether the IDE is *cross platform*, so development can be carried out on and for different OS environments.

IDE Selection (contd.)

Many of the listed IDE's are now cross-platform, including: Atom, Code::Blocks, CodeLite, Eclipse, Geany, KDevelop, Netbeans, and VSCode.

The most popular “free” cross-platform IDE's are probably: Eclipse, Netbeans, VSCode.

Among the IDE students have generally found easiest to learn and use are: Geany, Eclipse, and Netbeans.

These three IDE's will be covered briefly here.

All listed IDE's have websites with documentation and downloads.

If an IDE is provided by your distro, you will generally want to use the distro-supplied package (so check the PMS first).

Geany

Geany is a GUI editor that is popular and has many IDE-like features: <http://www.geany.org/>

Key features:

- Make-based builds
- syntax highlighting
- code indenting
- code folding
- symbol auto completion
- tabbed editor
- can invoke GCC and provide error links to source file
- can invoke GDB with plugin

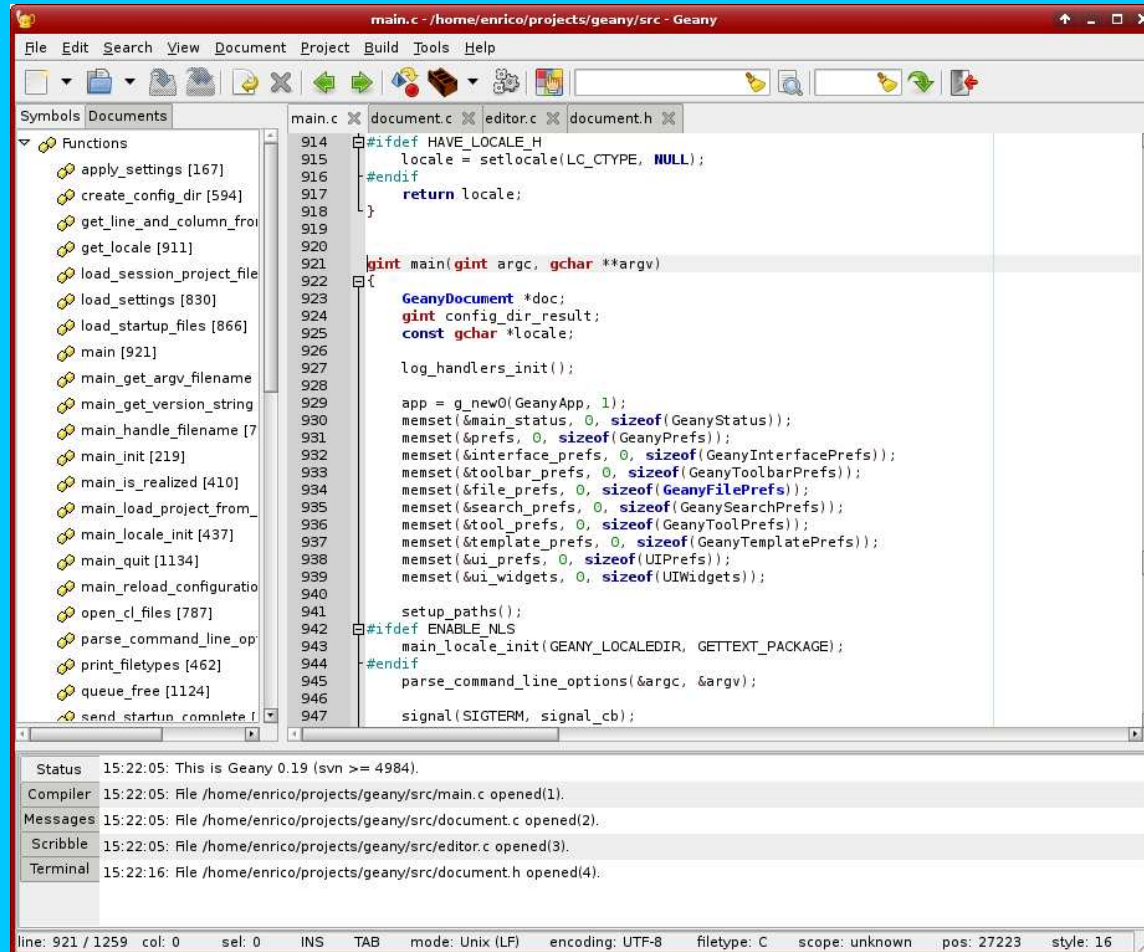
Geany (contd.)

It is a good choice for students that want more of the integration of tools that come with IDE's vs. editors, but without all the bloat.

It should be available with most Linux distros and is quite easy to learn to use.

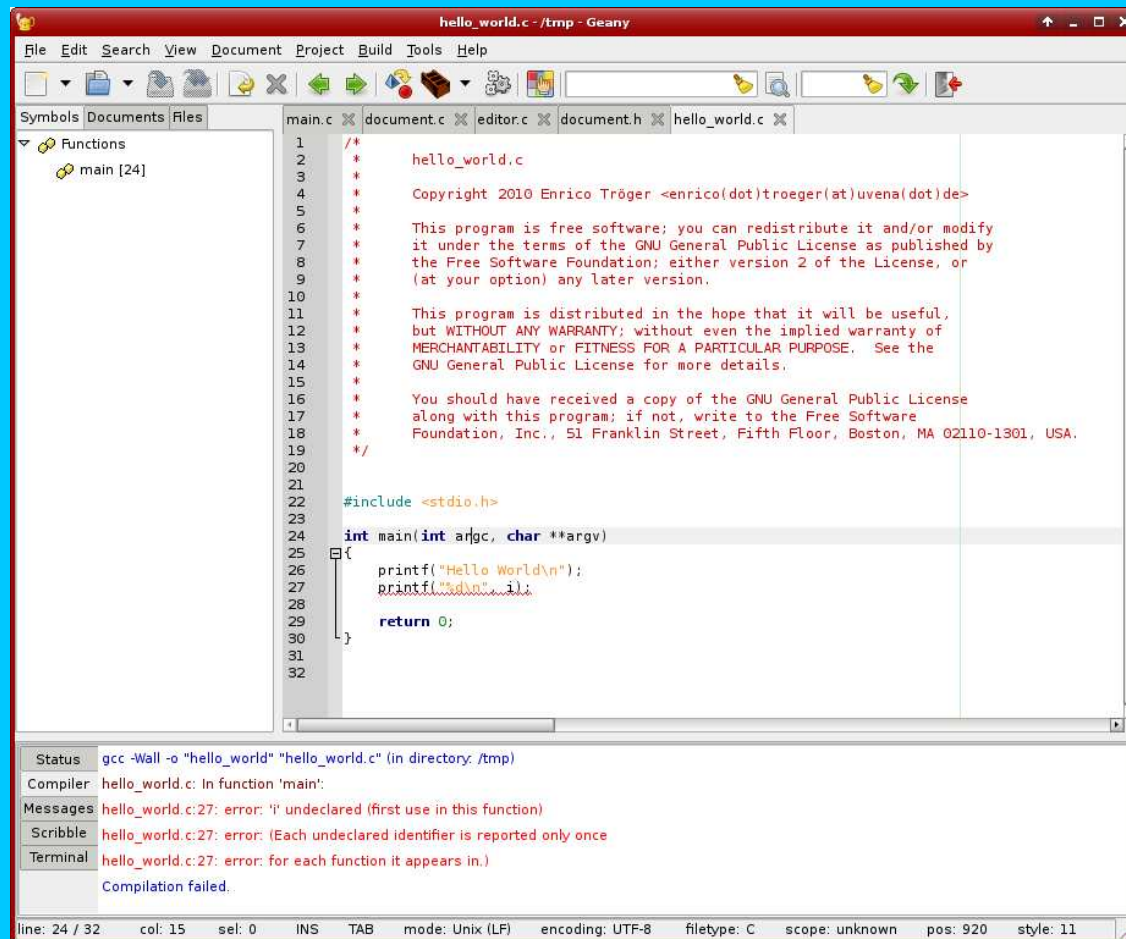
Geany (contd.)

Standard layout:



Geany (contd.)

Compiling (using GCC):



Eclipse

Eclipse is one of the most popular IDE's for development in a variety of programming languages.

To use Eclipse for C/C++ development requires installation of the **CDT** project (C/C++ Development Tooling) plugins.

Eclipse and CDT are available with most Linux distros.

Eclipse is a fairly large and complex software package, and it has a fairly steep learning curve.

However, many students have used Eclipse for Java development, and these students adapt fairly easily to using it for C.

Eclipse

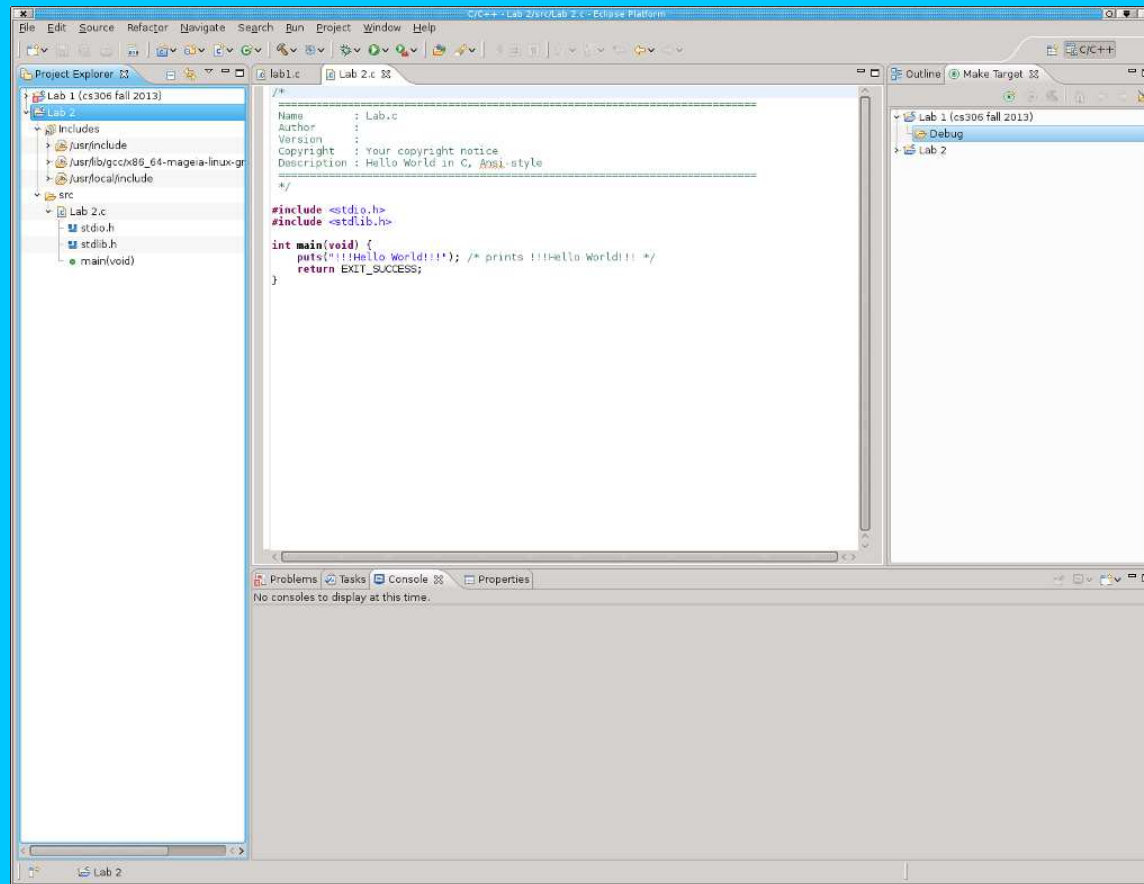
Eclipse CDT on Linux uses GCC, GDB, GNU Make, etc.

Features include (from CDT website):

- Make-based builds
- syntax highlighting
- code indenting
- code folding
- symbol auto completion
- call graphs
- visual debugging tools
- code refactoring
- static code analysis

Eclipse (contd.)

A Hello World project in Eclipse CDT:



Netbeans

Netbeans is another cross-platform IDE that students may have used for Java development.

NetBeans IDE Bundle for C/C++ allows this Java IDE to support C/C++ development.

Netbeans for C on Linux is integrated with/uses GCC, GDB, etc.

Students often find it easier to learn how to use Netbeans for C development than to learn Eclipse.

Due to licensing restrictions, Netbeans will not be provided by most Linux distributions

You must download it from: **netbeans.org**

Netbeans (contd.)

Features of Netbeans for C/C++:

- Make-based builds
- syntax highlighting
- code indenting
- code folding
- symbol auto completion
- call graphs
- visual debugging tools
- code refactoring

