

MATH 676

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**Finite element methods in
scientific computing**

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Lecture 7:

Learning to use modern tools, part 1

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Eclipse: an Integrated Development Environment (IDE)

On using state-of-the-art tools

All of us have our favorite editor, often the first one we learned well:

- vi/vim/gvim
- emacs
- ...

But: Just because we know them well, this doesn't mean:

- That they are well suited to the task
- That they are state of the art
- That they are the tools that let you be most productive.

**The rarest resource is *your* time, not CPU time etc.
You *must* be willing to keep learning new tools!**

IDEs

All of us have our favorite editor, often the first one we learned well:

- vi/vim/gvim
- emacs
- ...

The problem with most of these:

- They are (good) editors but not code exploration tools
- They are text-based, not graphical

Excellent, modern tool are for example:

- eclipse
- kdevelop
- Xcode, Microsoft Visual C/C++

IDEs

What an IDE can do for you:

IDEs “know” about your code base, i.e., they *parse all* of the files that belong to your project.

Thus, the IDE...

- Knows where a variable is declared (even if in a different file)
- Knows its type and can help you with *code completion*
- Can *rename* a variable everywhere
- Can keep declaration and definition in sync
- Can help you with function arguments
- Makes you *faster* and make *far fewer mistakes*.

Eclipse

We will be looking at *eclipse*:

- Probably the largest and most widely used IDE
- Open source
- Cross platform
- Developed by a consortium containing practically all large software companies
- Supports almost everything you ever want to do with software

Download, documentation, help, information:

<http://www.eclipse.org/>

Eclipse

To set up *eclipse* for deal.II:

On the command line, call
eclipse

Then follow the instructions given in the deal.II FAQs.

We will be using the (excellent) C/C++ Development Tools (CDT) plugin to provide Eclipse with knowledge about C++

Documentation on it can be found here:

<http://eclipse.org/cdt/>

Eclipse

Summary:

- There is a difference between *editors* and *integrated development environments (IDEs)*
- Don't settle for an editor!
- You will be so much more productive with an IDE

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