

# Emacs as a Python IDE

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# What is Emacs?

- ▶ Programmers editor. Customisable using elisp.
  - ▶ Customisability is a feature (not an add on).
  - ▶ Hence lots of “applications” in Emacs.
- ▶ Widely ported.
- ▶ Older than many of us.
- ▶ Almost religious following.

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- ▶ Common terms have different meanings.



- ▶ Major modes are “environments”.
- ▶ Minor modes are “utilities”.

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- ▶ Major modes are “environments”.
- ▶ Minor modes are “utilities”.

- ▶ Emacs' own dialect of lisp.
- ▶ Customisation and configuration language.
- ▶ All modes, utils etc. implemented using this.
- ▶ Quite old, not very fast but works.
- ▶ Arguably one of the most popular lisp dialects today.

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- ▶ The kill ring
  - ▶ Each `copy` or `kill` (cut) is saved in a ring.
  - ▶ After doing a `yank` (paste), you can cycle through the ring.
- ▶ Keyboard Macros
  - ▶ Save a long sequence of keystrokes.
  - ▶ Replay them (sometimes with minor changes).
- ▶ Expansion
  - ▶ Expand abbreviations intelligently.

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# Major modes

- ▶ There are 2 major modes for Python.
- ▶ `python.el` developed by the Emacs community.
- ▶ `python-mode.el` developed by the Python community.
- ▶ Both provide
  - ▶ Navigation.
  - ▶ Semantic selection.
  - ▶ Inferior interpreter process.
  - ▶ Intelligent indentation.
  - ▶ PDBTrack support.

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- ▶ Distributed as part of Emacs.
- ▶ The newer of the modes.
- ▶ Less features than `python-mode.el`.
- ▶ Uses an `emacs.py` module to introspect buffer code.
- ▶ Inferior interpreter to evaluate buffers.
- ▶ Buffer examination using `pylint`.

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- ▶ Separately developed by the Python community.
- ▶ Older and more features in addition to `python.el`.
- ▶ Uses `pymacs` for code completion.
- ▶ Has an accompanying `doctest-mode`.
- ▶ Better syntax highlighting.

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- ▶ PyMacs is a library that allows Emacs extensions to be written in Python.
- ▶ Runs a separate Python process.
- ▶ Communicates via. a lisp protocol.
- ▶ Many extensions use this.

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# Virtualenv integration

- ▶ `virtualenv.el` allows setting virtualenv for Emacs.
- ▶ Simply specify the virtualenv and the major modes will use it.
- ▶ Never worked for me. :(
- ▶ Available at <https://github.com/aculich/virtualenv.el>

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References

- ▶ Following code as it is stepped through the debugger.
- ▶ Useful for the `import pdb; pdb.set_trace()` trick.
- ▶ When the interpreter enters the debugger, Emacs will track the active file.
- ▶ Works out of the box for both modes.

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# Syntax checkers

- ▶ Emacs has `flymake-mode` to run compliations and highlight errors.
- ▶ This can integrate with `pyflakes` or `pylint`.
- ▶ Highlights possible errors in your code as you type.

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```
import subprocess
import logging

def foo():
    x = subprocess.Poen()

```

Error (E, foo): Module 'subprocess' has no 'Poen' member

1:-- foo.py All (2,0) (Python AC Flymake:1/2)-- [89.6%]  
Warning (W): Unused import logging

- ▶ Example with `pylint`.
- ▶ Uses (ugly) tooltips by default.
- ▶ Uses heuristics so not totally accurate.
- ▶ Not virtualenv aware.

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- ▶ Rope is a Python refactoring library.
- ▶ You need PyMacs.
- ▶ Makes refactoring tools available.
  - ▶ Boilerplate for classes, functions etc.
  - ▶ Extraction, inlining.
  - ▶ Completion and assistance.
  - ▶ Finding occurrences.
- ▶ Undo is *outside* the regular emacs flow.
- ▶ I don't like things that generate code.

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References

- ▶ Rope is a Python refactoring library.
- ▶ You need PyMacs.
- ▶ Makes refactoring tools available.
  - ▶ Boilerplate for classes, functions etc.
  - ▶ Extraction, inlining.
  - ▶ Completion and assistance.
  - ▶ Finding occurrences.
- ▶ Undo is *outside* the regular emacs flow.
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References

- ▶ Heavy duty IDE. Part of Emacs now.
- ▶ Project support
- ▶ Mostly geared towards static languages.
- ▶ Speedbar (file/class/function tree)

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# Org mode

- ▶ **Rule #6: Always mention `org-mode` in an Emacs talk.**
- ▶ Org mode is an outline mode that can also be used as a PIM and to keep notes.
- ▶ Very powerful and worth exploring.
- ▶ Hard to describe without a demo.

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- ▶ **Create tasks.**
- ▶ Set schedules and deadlines.
- ▶ Clock time spent.
- ▶ Create agendas.
- ▶ And finish them off.

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# Sample tasks

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```
* DONE Implement feature X
  SCHEDULED: <2011-09-17 Sat> DEADLINE: <2011-09-20 Tue> CLOSED: [2011-09-15 Thu 18:06]
* TODO Prepare presentation
  SCHEDULED: <2011-09-18 Sun> DEADLINE: <2011-09-20 Tue>
  CLOCK: [2011-09-14 Wed 10:05]--[2011-09-14 Wed 14:05] => 4:00
  CLOCK: [2011-09-12 Mon 18:05]--[2011-09-12 Mon 21:05] => 3:00
```

# Agenda

```
Week-agenda (w37):
Monday 12 September 2011 W37
Tuesday 13 September 2011
Wednesday 14 September 2011
Thursday 15 September 2011
  work: In 5 d.: TODO Prepare presentation
Friday 16 September 2011
Saturday 17 September 2011
  work: Scheduled: DONE Implement feature X
Sunday 18 September 2011
  work: Scheduled: TODO Prepare presentation

-1:%*- *Org Agenda* All (5,0) (Org-Agenda Week Ddl Grid Habit)--[86.9%]-
```

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# Sources of tasks

- ▶ **#TBD while coding.**
- ▶ Via. Email (“Can you do this?”).
- ▶ Via. Chat message (“Can you do this?”).
- ▶ Via browser (“Nice article. I need to read this.”).
- ▶ Via. real life (“Need to buy textbooks.”).
- ▶ Repetitive tasks (“Need to pay rents”).

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- ▶ **Single keystroke (C-c r) to *capture* something.**
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# Org-capture

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- ▶ <http://www.emacswiki.org/emacs/PythonProgrammingInEmacs>
- ▶ <http://orgmode.org/> **and** <http://members.optusnet.com.au/charles57/GTD/>
- ▶ [http://nibrahim.net.in/2011/07/17/my\\_org\\_mode\\_setup.html](http://nibrahim.net.in/2011/07/17/my_org_mode_setup.html)
- ▶ <https://github.com/nibrahim/Config-files>

# Questions

Emacs as a  
Python IDE

Noufal Ibrahim

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