



Produce impressive results and have fun too!

What is it?

Python® is a **mature, dynamic, object-oriented** programming language used for many kinds of software development. It can be learned in a few days, comes with extensive standard libraries, and offers strong support for integration with other languages and tools. Python's clean syntax and testing frameworks encourage readable and maintainable code. Python has a large community of friendly developers, several conferences, and many books.

What does it look like?

```
# Do something with every word in a file.
import re
word_pattern = re.compile(r"[\w'-]+")
for line in open(filename):
    for word in word_pattern.finditer(line):
        do_something_with(word.group(0))
```

```
import mx.ODBC.Windows as odbc
conn = odbc.connect('MyDSN')
cursor = conn.cursor()
cursor.execute("""
    SELECT name, citystate, phoneno
    FROM members
    ORDER BY citystate, name""")
for row in cursor.fetchone():
    print row.name, row.citystate, row.phoneno
```

Who uses it?

Industrial Light and Magic – integrated Python into their in-house C++ lighting tool, used to place light sources into a 3D scene and to facilitate the writing, generation, and previewing of shaders and materials used on CG elements.

Honeywell – integrated Python, COM, DocBook, OpenJade, and Word to create a documentation tool for BEACON, a visual programming environment. The tool was used for code reviews in corporate software development, leading to significant (>\$1M) in cost savings.

Google

Philips Semiconductor

EVE Online

What does it cost?

Python is distributed under an OSI-approved **open source** license that makes it **free** to use, even for commercial products. There are also vendors who sell feature-rich Python bundles and provide support services.

Do I have to run Linux?

Absolutely not! Python is platform-neutral and runs on **Windows, Linux/Unix, Mac OS X**, Palm handhelds, and Nokia mobile phones. Python has also been ported to the Java and .NET virtual machines; look for **Jython** and **IronPython**, respectively. Both include libraries to access the VM.



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What can I do with it?

Script Applications

OpenOffice.org, Blender, Emacs, Vim, GIMP, MS Office/Outlook using pywin32, Subversion, Mercurial, rpmlib, Paint Shop Pro

Write Desktop Apps

wxWidgets/wxPython, Tkinter, PyOpenGL, PyQt, PyGTK, PyObjC/Cocoa

Serve Web Pages

Zope, Twisted, Django, TurboGears, Google App Engine, mod_python/mod_wsgi

Access Relational DBs

PostgreSQL, SQLite, MySQL, Oracle, Informix, IBM DB2, ODBC, JDBC, mxODBC

Use Object DBs and ORMs

Zope Object Database (ZODB), Durus, Matisse, SQLAlchemy

Write Games

PyGame, Pyglet, Blender, "Freedom Force", "Blade of Darkness", "ToonTown", "EVE Online", "Cars with Guns", "Frequency (PS2)", MindLathe (AI middleware)

Read and Write XML/HTML

ElementTree, lxml, BeautifulSoup

Process Scientific Data

NumPy/SciPy, Molecular Modeling Toolkit (MMTK)

Visualize Scientific Data

Mayavi, PyMOL, VPython, DISLIN

Write and Read PDFs

ReportLab, Docutils

How about Integrated Development Environments?

Python has a rich set of graphical IDEs, both free and commercial. Among them are Eclipse, CodeForge, DrPython, Komodo, PythonCard, Wing IDE, and you can read the complete list at <http://wiki.python.org/moin/IntegratedDevelopmentEnvironments>.

But is it any fun?

YES!

Where can I learn more?

The center of the active Python community is at the following URL where you can download installs, tutorials, book lists, jobs, and mailing lists:

<http://www.python.org>

Never programmed before? Python is **easy to learn** and a **good first language**. Check out: <http://wiki.python.org/moin/BeginnersGuide/NonProgrammers>

There are even **free, downloadable books** there, so the only investment you need to get started is a bit of time. Oh and did I say that Python is a blast to play around with?