

# Installation and running of Python for scientific computing in Windows and Linux

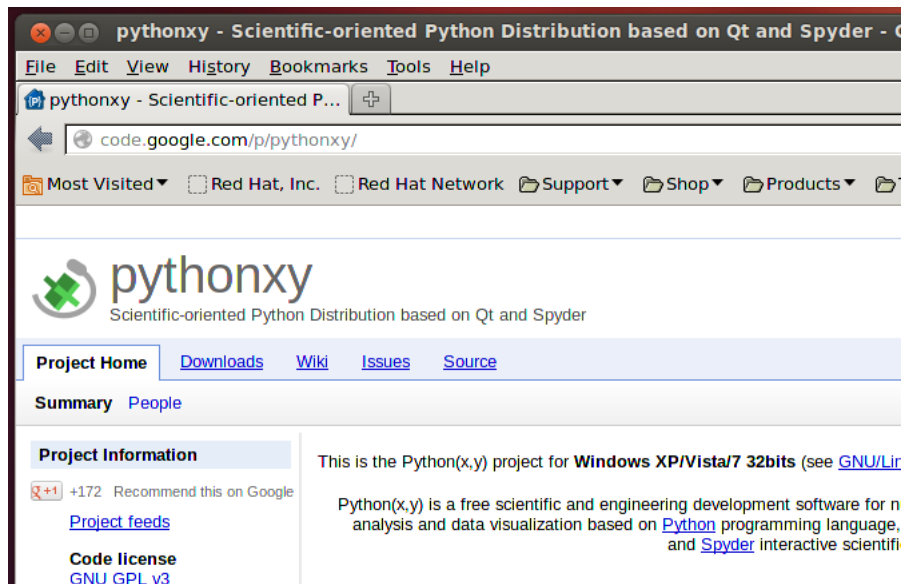
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- for ubuntu, mint or Debian base linux, type: "sudo apt-get install python-numpy python-scipy python-matplotlib ipython ipython-notebook python-pandas python-sympy python-nose" in a terminal
- for fedora core or centos linux, type:"sudo yum install numpy scipy python-matplotlib ipython python-pandas sympy python-nose" in a terminal

# python in windows

For windows we can try python(x,y) which is the scientific python distribution:



The screenshot shows a web browser window with the title "pythonxy - Scientific-oriented Python Distribution based on Qt and Spyder". The address bar contains "code.google.com/p/pythonxy/". The page features the Python(x,y) logo, which is a green cross inside a circle, and the text "pythonxy Scientific-oriented Python Distribution based on Qt and Spyder". Below the logo is a navigation menu with links for "Project Home", "Downloads", "Wiki", "Issues", and "Source". The "Project Home" link is highlighted. Underneath, there are tabs for "Summary" and "People". The "Project Information" section includes a "Recommend this on Google" button with a "+1" icon and the text "+172 Recommend this on Google". Below this is a link for "Project feeds". The "Code license" section indicates "GNU GPL v3". The main content area contains the text: "This is the Python(x,y) project for **Windows XP/Vista/7 32bits** (see [GNU/Linux](#))". Below this, it states: "Python(x,y) is a free scientific and engineering development software for numerical analysis and data visualization based on [Python](#) programming language, and [Spyder](#) interactive scientific environment".

Python(x,y) is a free scientific and engineering development software for numerical computations, data analysis and data visualization based on Python programming language, Qt graphical user interfaces and Spyder interactive scientific development environment.

## Main features

Python(x,y) has four main features:

- collecting scientific-oriented Python libraries and development environment tools ;
- collecting almost all free related documentation ;
- providing a quick guide to get started in Python / Qt / Spyder ;
- providing an all-in-one setup program, so the user can install or uninstall all these packages and features by clicking on one button only.

Completely free enterprise-ready Python distribution for large-scale data processing, predictive analytics, and scientific computing (<https://www.anaconda.com/> )

- 195+ of the most popular Python packages for science, math, engineering, data analysis
- Completely free - including for commercial use and even redistribution Cross platform on Linux, Windows, Mac
- Installs into a single directory and doesn't affect other Python installations on your system. Doesn't require root or local administrator privileges
- Stay up-to-date by easily updating packages from our free, online repository
- Easily switch between Python 2.6, 2.7, 3.3, 3.4, and experiment with multiple versions of libraries, using our conda package manager and its great support for virtual environments
- Comes with tools to connect and integrate with Excel

# Integrated Development Environments (IDE) for Python

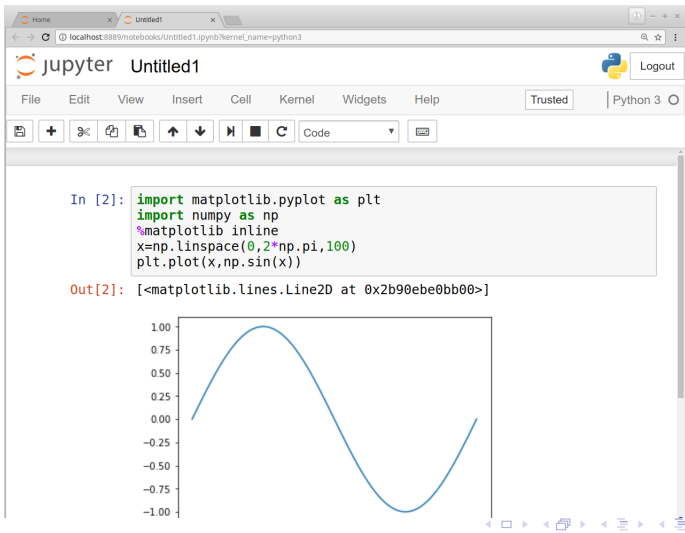
An integrated development environment (IDE) or interactive development environment is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger. ([wiki](#))

# Integrated Development Environments (IDE) for Python

- IDLE
- WingIDE
- Spyder
- pycharm

# The Jupyter Notebook

The Jupyter Notebook is an open-source web application that allows you to create and share documents that contain live code, equations, visualizations and narrative text.



The screenshot displays a web browser window with the Jupyter Notebook interface. The browser address bar shows the URL `localhost:8889/notebooks/Untitled1.ipynb?kernel_name=python3`. The notebook title is "Untitled1". The interface includes a menu bar with "File", "Edit", "View", "Insert", "Cell", "Kernel", "Widgets", and "Help". A toolbar contains icons for saving, undo, redo, and other actions. The current cell is a code cell with the following Python code:

```
In [2]: import matplotlib.pyplot as plt
import numpy as np
%matplotlib inline
x=np.linspace(0,2*np.pi,100)
plt.plot(x,np.sin(x))
```

The output of the code cell is a line plot showing a sine wave. The x-axis ranges from 0 to  $2\pi$  (approximately 6.28), and the y-axis ranges from -1.00 to 1.00. The plot shows a smooth blue curve that starts at (0,0), reaches a peak of 1.00 at  $x = \pi$ , crosses the x-axis at  $x = 2\pi$ , reaches a trough of -1.00 at  $x = 3\pi$ , and returns to 0.00 at  $x = 4\pi$ .

Out[2]: [`matplotlib.lines.Line2D` at `0x2b90ebe0bb00`]



- for linux: gedit, vim, emacs, ...
- for windows: notepad++