

Python Module Index

[_](#) | [a](#) | [b](#) | [c](#) | [d](#) | [e](#) | [f](#) | [g](#) | [h](#) | [i](#) | [j](#) | [k](#) | [l](#) | [m](#) | [n](#) | [o](#) | [p](#) | [q](#) | [r](#) | [s](#) | [t](#) | [u](#) | [v](#) | [w](#) | [x](#) | [z](#)

__future__	<i>Future statement definitions</i>
__main__	<i>The environment where the top-level script is run.</i>
_thread	<i>Low-level threading API.</i>
a	
abc	<i>Abstract base classes according to :pep:`3119`.</i>
aifc	<i>Read and write audio files in AIFF or AIFC format.</i>
argparse	<i>Command-line option and argument parsing library.</i>
array	<i>Space efficient arrays of uniformly typed numeric values.</i>
ast	<i>Abstract Syntax Tree classes and manipulation.</i>
asyncchat	<i>Support for asynchronous command/response protocols.</i>
asyncio	<i>Asynchronous I/O.</i>
asyncore	<i>A base class for developing asynchronous socket handling services.</i>
atexit	<i>Register and execute cleanup functions.</i>
audioop	<i>Manipulate raw audio data.</i>
b	
base64	<i>RFC 3548: Base16, Base32, Base64 Data Encodings; Base85 and Ascii85</i>
bdb	<i>Debugger framework.</i>
binascii	<i>Tools for converting between binary and various ASCII-encoded binary representations.</i>
binhex	<i>Encode and decode files in binhex4 format.</i>
bisect	<i>Array bisection algorithms for binary searching.</i>
builtins	<i>The module that provides the built-in namespace.</i>
bz2	<i>Interfaces for bzip2 compression and decompression.</i>
c	
calendar	<i>Functions for working with calendars, including some emulation of the Unix cal program.</i>

<code>cgi</code>	<i>Helpers for running Python scripts via the Common Gateway Interface.</i>
<code>cgitb</code>	<i>Configurable traceback handler for CGI scripts.</i>
<code>chunk</code>	<i>Module to read IFF chunks.</i>
<code>cmath</code>	<i>Mathematical functions for complex numbers.</i>
<code>cmd</code>	<i>Build line-oriented command interpreters.</i>
<code>code</code>	<i>Facilities to implement read-eval-print loops.</i>
<code>codecs</code>	<i>Encode and decode data and streams.</i>
<code>codeop</code>	<i>Compile (possibly incomplete) Python code.</i>
+ <code>collections</code>	<i>Container datatypes</i>
<code>colorsys</code>	<i>Conversion functions between RGB and other color systems.</i>
<code>compileall</code>	<i>Tools for byte-compiling all Python source files in a directory tree.</i>
+ <code>concurrent</code>	
<code>configparser</code>	<i>Configuration file parser.</i>
<code>contextlib</code>	<i>Utilities for with-statement contexts.</i>
<code>contextvars</code>	<i>Context Variables</i>
<code>copy</code>	<i>Shallow and deep copy operations.</i>
<code>copyreg</code>	<i>Register pickle support functions.</i>
<code>cProfile</code>	
<code>crypt</code> (Unix)	<i>The crypt() function used to check Unix passwords.</i>
<code>csv</code>	<i>Write and read tabular data to and from delimited files.</i>
<code>ctypes</code>	<i>A foreign function library for Python.</i>
+ <code>curses</code> (Unix)	<i>An interface to the curses library, providing portable terminal handling.</i>
d	
<code>dataclasses</code>	<i>Generate special methods on user-defined classes.</i>
<code>datetime</code>	<i>Basic date and time types.</i>
+ <code>dbm</code>	<i>Interfaces to various Unix "database" formats.</i>
<code>decimal</code>	<i>Implementation of the General Decimal Arithmetic Specification.</i>
<code>difflib</code>	<i>Helpers for computing differences between objects.</i>
<code>dis</code>	<i>Disassembler for Python bytecode.</i>
+ <code>distutils</code>	<i>Support for building and installing Python modules into an existing Python installation.</i>
<code>doctest</code>	<i>Test pieces of code within docstrings.</i>

e

- ✚ [email](#) *Package supporting the parsing, manipulating, and generating email messages.*
- ✚ [encodings](#)
- [ensurepip](#) *Bootstrapping the "pip" installer into an existing Python installation or virtual environment.*
- [enum](#) *Implementation of an enumeration class.*
- [errno](#) *Standard errno system symbols.*

f

- [faulthandler](#) *Dump the Python traceback.*
- [fcntl](#) (Unix) *The fcntl() and ioctl() system calls.*
- [filecmp](#) *Compare files efficiently.*
- [fileinput](#) *Loop over standard input or a list of files.*
- [fnmatch](#) *Unix shell style filename pattern matching.*
- [formatter](#) **Deprecated:** *Generic output formatter and device interface.*
- [fractions](#) *Rational numbers.*
- [ftplib](#) *FTP protocol client (requires sockets).*
- [functools](#) *Higher-order functions and operations on callable objects.*


g

- [gc](#) *Interface to the cycle-detecting garbage collector.*
- [getopt](#) *Portable parser for command line options; support both short and long option names.*
- [getpass](#) *Portable reading of passwords and retrieval of the userid.*
- [gettext](#) *Multilingual internationalization services.*
- [glob](#) *Unix shell style pathname pattern expansion.*
- [graphlib](#) *Functionality to operate with graph-like structures*
- [grp](#) (Unix) *The group database (getgrnam()) and friends).*
- [gzip](#) *Interfaces for gzip compression and decompression using file objects.*



h

- [hashlib](#) *Secure hash and message digest algorithms.*
- [heapq](#) *Heap queue algorithm (a.k.a. priority queue).*
- [hmac](#) *Keyed-Hashing for Message Authentication (HMAC) implementation*

html	<i>Helpers for manipulating HTML.</i>
http	<i>HTTP status codes and messages</i>
i	
imaplib	<i>IMAP4 protocol client (requires sockets).</i>
imghdr	<i>Determine the type of image contained in a file or byte stream.</i>
imp	Deprecated: <i>Access the implementation of the import statement.</i>
importlib	<i>The implementation of the import machinery.</i>
inspect	<i>Extract information and source code from live objects.</i>
io	<i>Core tools for working with streams.</i>
ipaddress	<i>IPv4/IPv6 manipulation library.</i>
itertools	<i>Functions creating iterators for efficient looping.</i>
j	
json	<i>Encode and decode the JSON format.</i>
k	
keyword	<i>Test whether a string is a keyword in Python.</i>
l	
lib2to3	<i>The 2to3 library</i>
linecache	<i>Provides random access to individual lines from text files.</i>
locale	<i>Internationalization services.</i>
logging	<i>Flexible event logging system for applications.</i>
lzma	<i>A Python wrapper for the liblzma compression library.</i>
m	
mailbox	<i>Manipulate mailboxes in various formats</i>
mailcap	<i>Mailcap file handling.</i>
marshal	<i>Convert Python objects to streams of bytes and back (with different constraints).</i>
math	<i>Mathematical functions (sin() etc.).</i>
mimetypes	<i>Mapping of filename extensions to MIME types.</i>
mmap	<i>Interface to memory-mapped files for Unix and Windows.</i>
modulefinder	<i>Find modules used by a script.</i>

msilib (Windows)	<i>Creation of Microsoft Installer files, and CAB files.</i>
msvcrt (Windows)	<i>Miscellaneous useful routines from the MS VC++ runtime.</i>
 multiprocessing	<i>Process-based parallelism.</i>
n	
netrc	<i>Loading of .netrc files.</i>
nis (Unix)	<i>Interface to Sun's NIS (Yellow Pages) library.</i>
nntplib	<i>NNTP protocol client (requires sockets).</i>
numbers	<i>Numeric abstract base classes (Complex, Real, Integral, etc.).</i>
o	
operator	<i>Functions corresponding to the standard operators.</i>
optparse	Deprecated: <i>Command-line option parsing library.</i>
 os	<i>Miscellaneous operating system interfaces.</i>
ossaudiodev (Linux, FreeBSD)	<i>Access to OSS-compatible audio devices.</i>
p	
parser	<i>Access parse trees for Python source code.</i>
pathlib	<i>Object-oriented filesystem paths</i>
pdb	<i>The Python debugger for interactive interpreters.</i>
pickle	<i>Convert Python objects to streams of bytes and back.</i>
pickletools	<i>Contains extensive comments about the pickle protocols and pickle-machine opcodes, as well as some useful functions.</i>
pipes (Unix)	<i>A Python interface to Unix shell pipelines.</i>
pkgutil	<i>Utilities for the import system.</i>
platform	<i>Retrieves as much platform identifying data as possible.</i>
plistlib	<i>Generate and parse Apple plist files.</i>
poplib	<i>POP3 protocol client (requires sockets).</i>
posix (Unix)	<i>The most common POSIX system calls (normally used via module os).</i>
pprint	<i>Data pretty printer.</i>
profile	<i>Python source profiler.</i>
pstats	<i>Statistics object for use with the profiler.</i>
pty (Linux)	<i>Pseudo-Terminal Handling for Linux.</i>
pwd (Unix)	<i>The password database (getpwnam()) and friends).</i>

py_compile	<i>Generate byte-code files from Python source files.</i>
pyclbr	<i>Supports information extraction for a Python module browser.</i>
pydoc	<i>Documentation generator and online help system.</i>
q	
queue	<i>A synchronized queue class.</i>
quopri	<i>Encode and decode files using the MIME quoted-printable encoding.</i>
r	
random	<i>Generate pseudo-random numbers with various common distributions.</i>
re	<i>Regular expression operations.</i>
readline (Unix)	<i>GNU readline support for Python.</i>
reprlib	<i>Alternate repr() implementation with size limits.</i>
resource (Unix)	<i>An interface to provide resource usage information on the current process.</i>
rlcompleter	<i>Python identifier completion, suitable for the GNU readline library.</i>
runpy	<i>Locate and run Python modules without importing them first.</i>
s	
sched	<i>General purpose event scheduler.</i>
secrets	<i>Generate secure random numbers for managing secrets.</i>
select	<i>Wait for I/O completion on multiple streams.</i>
selectors	<i>High-level I/O multiplexing.</i>
shelve	<i>Python object persistence.</i>
shlex	<i>Simple lexical analysis for Unix shell-like languages.</i>
shutil	<i>High-level file operations, including copying.</i>
signal	<i>Set handlers for asynchronous events.</i>
site	<i>Module responsible for site-specific configuration.</i>
smtpd	<i>A SMTP server implementation in Python.</i>
smtplib	<i>SMTP protocol client (requires sockets).</i>
sndhdr	<i>Determine type of a sound file.</i>
socket	<i>Low-level networking interface.</i>
socketserver	<i>A framework for network servers.</i>

<code>spwd</code> (Unix)	<i>The shadow password database (getspnam() and friends).</i>
<code>sqlite3</code>	<i>A DB-API 2.0 implementation using SQLite 3.x.</i>
<code>ssl</code>	<i>TLS/SSL wrapper for socket objects</i>
<code>stat</code>	<i>Utilities for interpreting the results of os.stat(), os.lstat() and os.fstat().</i>
<code>statistics</code>	<i>Mathematical statistics functions</i>
<code>string</code>	<i>Common string operations.</i>
<code>stringprep</code>	<i>String preparation, as per RFC 3453</i>
<code>struct</code>	<i>Interpret bytes as packed binary data.</i>
<code>subprocess</code>	<i>Subprocess management.</i>
<code>sunau</code>	<i>Provide an interface to the Sun AU sound format.</i>
<code>symbol</code>	<i>Constants representing internal nodes of the parse tree.</i>
<code>symtable</code>	<i>Interface to the compiler's internal symbol tables.</i>
<code>sys</code>	<i>Access system-specific parameters and functions.</i>
<code>sysconfig</code>	<i>Python's configuration information</i>
<code>syslog</code> (Unix)	<i>An interface to the Unix syslog library routines.</i>
t	
<code>tabnanny</code>	<i>Tool for detecting white space related problems in Python source files in a directory tree.</i>
<code>tarfile</code>	<i>Read and write tar-format archive files.</i>
<code>telnetlib</code>	<i>Telnet client class.</i>
<code>tempfile</code>	<i>Generate temporary files and directories.</i>
<code>termios</code> (Unix)	<i>POSIX style tty control.</i>
 <code>test</code>	<i>Regression tests package containing the testing suite for Python.</i>
<code>textwrap</code>	<i>Text wrapping and filling</i>
<code>threading</code>	<i>Thread-based parallelism.</i>
<code>time</code>	<i>Time access and conversions.</i>
<code>timeit</code>	<i>Measure the execution time of small code snippets.</i>
 <code>tkinter</code>	<i>Interface to Tcl/Tk for graphical user interfaces</i>
<code>token</code>	<i>Constants representing terminal nodes of the parse tree.</i>
<code>tokenize</code>	<i>Lexical scanner for Python source code.</i>
<code>trace</code>	<i>Trace or track Python statement execution.</i>
<code>traceback</code>	<i>Print or retrieve a stack traceback.</i>
<code>tracemalloc</code>	<i>Trace memory allocations.</i>

tty (Unix)	<i>Utility functions that perform common terminal control operations.</i>
turtle	<i>An educational framework for simple graphics applications</i>
turtledemo	<i>A viewer for example turtle scripts</i>
types	<i>Names for built-in types.</i>
typing	<i>Support for type hints (see :pep:`484`).</i>
u	
unicodedata	<i>Access the Unicode Database.</i>
unittest	<i>Unit testing framework for Python.</i>
urllib	
uu	<i>Encode and decode files in uuencode format.</i>
uuid	<i>UUID objects (universally unique identifiers) according to RFC 4122</i>
v	
venv	<i>Creation of virtual environments.</i>
w	
warnings	<i>Issue warning messages and control their disposition.</i>
wave	<i>Provide an interface to the WAV sound format.</i>
weakref	<i>Support for weak references and weak dictionaries.</i>
webbrowser	<i>Easy-to-use controller for Web browsers.</i>
winreg (Windows)	<i>Routines and objects for manipulating the Windows registry.</i>
winsound (Windows)	<i>Access to the sound-playing machinery for Windows.</i>
wsgiref	<i>WSGI Utilities and Reference Implementation.</i>
x	
xdrlib	<i>Encoders and decoders for the External Data Representation (XDR).</i>
xml	<i>Package containing XML processing modules</i>
xmlrpc	
z	
zipapp	<i>Manage executable Python zip archives</i>
zipfile	<i>Read and write ZIP-format archive files.</i>

<code>zipimport</code>	<i>Support for importing Python modules from ZIP archives.</i>
<code>zlib</code>	<i>Low-level interface to compression and decompression routines compatible with gzip.</i>
<code>zoneinfo</code>	<i>IANA time zone support</i>