

Python 3 Module of the Week

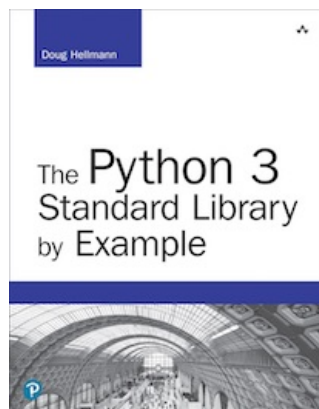
PyMOTW-3 is a series of articles written by [Doug Hellmann](#) to demonstrate how to use the modules of the [Python 3](#) standard library. It is based on the original [PyMOTW](#) series, which covered Python 2.7. See [About Python Module of the Week](#) for details including the version of Python and tools used.

- [Text](#)
 - [string](#) — Text Constants and Templates
 - [textwrap](#) — Formatting Text Paragraphs
 - [re](#) — Regular Expressions
 - [difflib](#) — Compare Sequences
- [Data Structures](#)
 - [enum](#) - Enumeration Type
 - [collections](#) — Container Data Types
 - [array](#) — Sequence of Fixed-type Data
 - [heapq](#) - Heap Sort Algorithm
 - [bisect](#) — Maintain Lists in Sorted Order
 - [queue](#) — Thread-Safe FIFO Implementation
 - [struct](#) — Binary Data Structures
 - [weakref](#) — Impermanent References to Objects
 - [copy](#) — Duplicate Objects
 - [pprint](#) — Pretty-Print Data Structures
- [Algorithms](#)
 - [functools](#) — Tools for Manipulating Functions
 - [itertools](#) — Iterator Functions
 - [operator](#) — Functional Interface to Built-in Operators
 - [contextlib](#) — Context Manager Utilities
- [Dates and Times](#)
 - [time](#) — Clock Time
 - [datetime](#) — Date and Time Value Manipulation
 - [calendar](#) — Work with Dates
- [Mathematics](#)
 - [decimal](#) — Fixed and Floating Point Math
 - [fractions](#) — Rational Numbers
 - [random](#) — Pseudorandom Number Generators
 - [math](#) — Mathematical Functions
 - [statistics](#) — Statistical Calculations
- [The File System](#)
 - [os.path](#) — Platform-independent Manipulation of Filenames
 - [pathlib](#) — Filesystem Paths as Objects
 - [glob](#) — Filename Pattern Matching
 - [fnmatch](#) — Unix-style Glob Pattern Matching
 - [linecache](#) — Read Text Files Efficiently
 - [tempfile](#) — Temporary File System Objects
 - [shutil](#) — High-level File Operations
 - [filecmp](#) — Compare Files
 - [mmap](#) — Memory-map Files
 - [codecs](#) — String Encoding and Decoding
 - [io](#) — Text, Binary, and Raw Stream I/O Tools
- [Data Persistence and Exchange](#)
 - [pickle](#) — Object Serialization
 - [shelve](#) — Persistent Storage of Objects
 - [dbm](#) — Unix Key-Value Databases
 - [sqlite3](#) — Embedded Relational Database
 - [xml.etree.ElementTree](#) — XML Manipulation API
 - [csv](#) — Comma-separated Value Files

- csv — Comma-separated value files
- Data Compression and Archiving
 - zlib — GNU zlib Compression
 - gzip — Read and Write GNU zip Files
 - bz2 — bzip2 Compression
 - tarfile — Tar Archive Access
 - zipfile — ZIP Archive Access
- Cryptography
 - hashlib — Cryptographic Hashing
 - hmac — Cryptographic Message Signing and Verification
- Concurrency with Processes, Threads, and Coroutines
 - subprocess — Spawning Additional Processes
 - signal — Asynchronous System Events
 - threading — Manage Concurrent Operations Within a Process
 - multiprocessing — Manage Processes Like Threads
 - asyncio — Asynchronous I/O, event loop, and concurrency tools
 - concurrent.futures — Manage Pools of Concurrent Tasks
- Networking
 - ipaddress — Internet Addresses
 - socket — Network Communication
 - selectors — I/O Multiplexing Abstractions
 - select — Wait for I/O Efficiently
 - socketserver — Creating Network Servers
- The Internet
 - urllib.parse — Split URLs into Components
 - urllib.request — Network Resource Access
 - urllib.robotparser — Internet Spider Access Control
 - base64 — Encode Binary Data with ASCII
 - http.server — Base Classes for Implementing Web Servers
 - http.cookies — HTTP Cookies
 - webbrowser — Displays web pages
 - uuid — Universally Unique Identifiers
 - json — JavaScript Object Notation
 - xmlrpc.client — Client Library for XML-RPC
 - xmlrpc.server — An XML-RPC server
- Email
 - smtplib — Simple Mail Transfer Protocol Client
 - smtpd — Sample Mail Servers
 - mailbox — Manipulate Email Archives
 - imaplib — IMAP4 Client Library
- Application Building Blocks
 - argparse — Command-Line Option and Argument Parsing
 - getopt — Command Line Option Parsing
 - readline — The GNU readline Library
 - getpass — Secure Password Prompt
 - cmd — Line-oriented Command Processors
 - shlex — Parse Shell-style Syntaxes
 - configparser — Work with Configuration Files
 - logging — Report Status, Error, and Informational Messages
 - fileinput — Command-Line Filter Framework
 - atexit — Program Shutdown Callbacks
 - sched — Timed Event Scheduler
- Internationalization and Localization
 - gettext — Message Catalogs
 - locale — Cultural Localization API
- Developer Tools
 - pydoc — Online Help for Modules



- [doctest](#) — Testing Through Documentation
- [unittest](#) — Automated Testing Framework
- [trace](#) — Follow Program Flow
- [traceback](#) — Exceptions and Stack Traces
- [cgitb](#) — Detailed Traceback Reports
- [pdb](#) — Interactive Debugger
- [profile](#) and [pstats](#) — Performance Analysis
- [timeit](#) — Time the execution of small bits of Python code.
- [tabnanny](#) — Indentation validator
- [compileall](#) — Byte-compile Source Files
- [pyclbr](#) — Class Browser
- [venv](#) — Create Virtual Environments
- [ensurepip](#) — Install the Python Package Installer
- [Runtime Features](#)
 - [site](#) — Site-wide Configuration
 - [sys](#) — System-specific Configuration
 - [os](#) — Portable access to operating system specific features
 - [platform](#) — System Version Information
 - [resource](#) — System Resource Management
 - [gc](#) — Garbage Collector
 - [sysconfig](#) — Interpreter Compile-time Configuration
- [Language Tools](#)
 - [warnings](#) — Non-fatal Alerts
 - [abc](#) — Abstract Base Classes
 - [dis](#) — Python Bytecode Disassembler
 - [inspect](#) — Inspect Live Objects
- [Modules and Packages](#)
 - [importlib](#) — Python's Import Mechanism
 - [pkgutil](#) — Package Utilities
 - [zipimport](#) — Load Python Code from ZIP Archives
- [Unix-specific Services](#)
 - [pwd](#) — Unix Password Database
 - [grp](#) — Unix Group Database
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