:mod:`types` --- Dynamic type creation and names for built-in types

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 1); *backlink*

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 4)

Unknown directive type "module".

```
.. module:: types
   :synopsis: Names for built-in types.
```

Source code: :source:`Lib/types.py`

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 7); *backlink*

Unknown interpreted text role "source".

This module defines utility functions to assist in dynamic creation of new types.

It also defines names for some object types that are used by the standard Python interpreter, but not exposed as builtins like :class:`int` or :class:`str` are.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 14); *backlink*

Unknown interpreted text role "class".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 14); *backlink*

Unknown interpreted text role "class".

Finally, it provides some additional type-related utility classes and functions that are not fundamental enough to be builtins.

Dynamic Type Creation

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 25)

Unknown directive type "function".

```
.. function:: new_class(name, bases=(), kwds=None, exec_body=None)

   Creates a class object dynamically using the appropriate metaclass.

   The first three arguments are the components that make up a class
   definition header: the class name, the base classes (in order), the
   keyword arguments (such as ``metaclass``).

   The *exec_body* argument is a callback that is used to populate the
   freshly created class namespace. It should accept the class namespace
   as its sole argument and update the namespace directly with the class
   contents. If no callback is provided, it has the same effect as passing
   in ``lambda ns: None``.

   .. versionadded:: 3.3
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 41)

Unknown directive type "function".

```
.. function:: prepare_class(name, bases=(), kwds=None)

   Calculates the appropriate metaclass and creates the class namespace.

   The arguments are the components that make up a class definition header:
   the class name, the base classes (in order) and the keyword arguments
   (such as ``metaclass``).

   The return value is a 3-tuple: ``metaclass, namespace, kwds``

   *metaclass* is the appropriate metaclass, *namespace* is the
   prepared class namespace and *kwds* is an updated copy of the passed
   in *kwds* argument with any ``'metaclass'`` entry removed. If no *kwds*
   argument is passed in, this will be an empty dict.

   .. versionadded:: 3.3

   .. versionchanged:: 3.6
```

```
        The default value for the ``namespace`` element of the returned
        tuple has changed.  Now an insertion-order-preserving mapping is
        used when the metaclass does not have a ``__prepare__`` method.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 64)

Unknown directive type "seealso".

```
.. seealso::

   :ref:`metaclasses`
      Full details of the class creation process supported by these functions

   :pep:`3115` - Metaclasses in Python 3000
      Introduced the ``__prepare__`` namespace hook
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 72)

Unknown directive type "function".

```
.. function:: resolve_bases(bases)

   Resolve MRO entries dynamically as specified by :pep:`560`.

   This function looks for items in *bases* that are not instances of
   :class:`type`, and returns a tuple where each such object that has
   an ``__mro_entries__`` method is replaced with an unpacked result of
   calling this method.  If a *bases* item is an instance of :class:`type`,
   or it doesn't have an ``__mro_entries__`` method, then it is included in
   the return tuple unchanged.

   .. versionadded:: 3.7
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 85)

Unknown directive type "seealso".

```
.. seealso::

   :pep:`560` - Core support for typing module and generic types
```

Standard Interpreter Types

This module provides names for many of the types that are required to implement a Python interpreter. It deliberately avoids including some of the types that arise only incidentally during processing such as the `listiterator` type.

Typical use of these names is for :func:`isinstance` or :func:`issubclass` checks.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 98); *backlink*

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 98); *backlink*

Unknown interpreted text role "func".

If you instantiate any of these types, note that signatures may vary between Python versions.

Standard names are defined for the following types:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 106)

Unknown directive type "data".

```
.. data:: NoneType

   The type of :data:`None`.

   .. versionadded:: 3.10
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 113)

Unknown directive type "data".

```
.. data:: FunctionType
          LambdaType

   The type of user-defined functions and functions created by
   :keyword:`lambda`  expressions.
```

```
.. audit-event:: function.__new__ code types.FunctionType

   The audit event only occurs for direct instantiation of function objects,
   and is not raised for normal compilation.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 125)

Unknown directive type "data".

```
.. data:: GeneratorType

   The type of :term:`generator`-iterator objects, created by
   generator functions.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 131)

Unknown directive type "data".

```
.. data:: CoroutineType

   The type of :term:`coroutine` objects, created by
   :keyword:`async def` functions.

   .. versionadded:: 3.5
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 139)

Unknown directive type "data".

```
.. data:: AsyncGeneratorType

   The type of :term:`asynchronous generator`-iterator objects, created by
   asynchronous generator functions.

   .. versionadded:: 3.6
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 149)

Unknown directive type "index".

```
.. index:: builtin: compile
```

The type for code objects such as returned by :func:`compile`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 151); *backlink*

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 153)

Unknown directive type "audit-event".

```
.. audit-event:: code.__new__ code,filename,name,argcount,posonlyargcount,kwonlyargcount,nlocals,stacksize,flags
```

Note that the audited arguments may not match the names or positions required by the initializer. The audit event only occurs for direct instantiation of code objects, and is not raised for normal compilation.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 159)

Unknown directive type "method".

```
.. method:: CodeType.replace(**kwargs)

  Return a copy of the code object with new values for the specified fields.

  .. versionadded:: 3.8
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 165)

Unknown directive type "data".

```
.. data:: CellType

   The type for cell objects: such objects are used as containers for
   a function's free variables.
```

```
   .. versionadded:: 3.8
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 173)

Unknown directive type "data".

```
.. data:: MethodType

   The type of methods of user-defined class instances.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 178)

Unknown directive type "data".

```
.. data:: BuiltinFunctionType
          BuiltinMethodType

   The type of built-in functions like :func:`len` or :func:`sys.exit`, and
   methods of built-in classes.  (Here, the term "built-in" means "written in
   C".)
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 186)

Unknown directive type "data".

```
.. data:: WrapperDescriptorType

   The type of methods of some built-in data types and base classes such as
   :meth:`object.__init__` or :meth:`object.__lt__`.

   .. versionadded:: 3.7
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 194)

Unknown directive type "data".

```
.. data:: MethodWrapperType

   The type of *bound* methods of some built-in data types and base classes.
   For example it is the type of :code:`object().__str__`.

   .. versionadded:: 3.7
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 202)

Unknown directive type "data".

```
.. data:: NotImplementedType

   The type of :data:`NotImplemented`.

   .. versionadded:: 3.10
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 209)

Unknown directive type "data".

```
.. data:: MethodDescriptorType

   The type of methods of some built-in data types such as :meth:`str.join`.

   .. versionadded:: 3.7
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 216)

Unknown directive type "data".

```
.. data:: ClassMethodDescriptorType

   The type of *unbound* class methods of some built-in data types such as
   ``dict.__dict__['fromkeys']``.

   .. versionadded:: 3.7
```

The type of :term:`modules <module>`. The constructor takes the name of the module to be created and optionally its :term:`docstring`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 226); *backlink*

Unknown interpreted text role "term".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 226); *backlink*

Unknown interpreted text role "term".

Note

Use :func:`importlib.util.module_from_spec` to create a new module if you wish to set the various import-controlled attributes.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 230); *backlink*

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 233)

Unknown directive type "attribute".

```
.. attribute:: __doc__

   The :term:`docstring` of the module. Defaults to ``None``.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 237)

Unknown directive type "attribute".

```
.. attribute:: __loader__

   The :term:`loader` which loaded the module. Defaults to ``None``.

   This attribute is to match :attr:`importlib.machinery.ModuleSpec.loader`
   as stored in the :attr:`__spec__` object.

   .. note::
      A future version of Python may stop setting this attribute by default.
      To guard against this potential change, preferably read from the
      :attr:`__spec__` attribute instead or use
      ``getattr(module, "__loader__", None)`` if you explicitly need to use
      this attribute.

   .. versionchanged:: 3.4
      Defaults to ``None``. Previously the attribute was optional.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 254)

Unknown directive type "attribute".

```
.. attribute:: __name__

   The name of the module. Expected to match
   :attr:`importlib.machinery.ModuleSpec.name`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 259)

Unknown directive type "attribute".

```
.. attribute:: __package__

   Which :term:`package` a module belongs to. If the module is top-level
   (i.e. not a part of any specific package) then the attribute should be set
   to ``''``, else it should be set to the name of the package (which can be
   :attr:`__name__` if the module is a package itself). Defaults to ``None``.

   This attribute is to match :attr:`importlib.machinery.ModuleSpec.parent`
   as stored in the :attr:`__spec__` object.

   .. note::
      A future version of Python may stop setting this attribute by default.
      To guard against this potential change, preferably read from the
      :attr:`__spec__` attribute instead or use
      ``getattr(module, "__package__", None)`` if you explicitly need to use
      this attribute.

   .. versionchanged:: 3.4
```

```
Defaults to ``None``. Previously the attribute was optional.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 279)

Unknown directive type "attribute".

```
.. attribute:: __spec__

   A record of the module's import-system-related state. Expected to be an
   instance of :class:`importlib.machinery.ModuleSpec`.

   .. versionadded:: 3.4
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 287)

Unknown directive type "data".

```
.. data:: EllipsisType

   The type of :data:`Ellipsis`.

   .. versionadded:: 3.10
```

The type of :ref:`parameterized generics <types-genericalias>` such as `list[int]`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 295); *backlink*

Unknown interpreted text role "ref".

`t_origin` should be a non-parameterized generic class, such as `list`, `tuple` or `dict`. `t_args` should be a :class:`tuple` (possibly of length 1) of types which parameterize `t_origin`:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 298); *backlink*

Unknown interpreted text role "class".

```
>>> from types import GenericAlias

>>> list[int] == GenericAlias(list, (int,))
True
>>> dict[str, int] == GenericAlias(dict, (str, int))
True
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 309)

Unknown directive type "versionadded".

```
.. versionadded:: 3.9
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 311)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.9.2
   This type can now be subclassed.
```

The type of :ref:`union type expressions<types-union>`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 317); *backlink*

Unknown interpreted text role "ref".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 319)

Unknown directive type "versionadded".

```
.. versionadded:: 3.10
```

The type of traceback objects such as found in `sys.exc_info()[2]`.

See :ref:`the language reference <traceback-objects>` for details of the available attributes and operations, and guidance on creating tracebacks dynamically.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 325); *backlink*

Unknown interpreted text role "ref".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 330)

Unknown directive type "data".

```
.. data:: FrameType

   The type of frame objects such as found in ``tb.tb_frame`` if ``tb`` is a
   traceback object.

   See :ref:`the language reference <frame-objects>` for details of the
   available attributes and operations.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 339)

Unknown directive type "data".

```
.. data:: GetSetDescriptorType

   The type of objects defined in extension modules with ``PyGetSetDef``, such
   as ``FrameType.f_locals`` or ``array.array.typecode``.  This type is used as
   descriptor for object attributes; it has the same purpose as the
   :class:`property` type, but for classes defined in extension modules.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 347)

Unknown directive type "data".

```
.. data:: MemberDescriptorType

   The type of objects defined in extension modules with ``PyMemberDef``, such
   as ``datetime.timedelta.days``.  This type is used as descriptor for simple C
   data members which use standard conversion functions; it has the same purpose
   as the :class:`property` type, but for classes defined in extension modules.

   .. impl-detail::

      In other implementations of Python, this type may be identical to
      ``GetSetDescriptorType``.
```

Read-only proxy of a mapping. It provides a dynamic view on the mapping's entries, which means that when the mapping changes, the view reflects these changes.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 365)

Unknown directive type "versionadded".

```
.. versionadded:: 3.3
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 367)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.9

   Updated to support the new union (``|``) operator from :pep:`584`, which
   simply delegates to the underlying mapping.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 372)

Unknown directive type "describe".

```
.. describe:: key in proxy

   Return ``True`` if the underlying mapping has a key *key*, else
   ``False``.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 377)

Unknown directive type "describe".

```
.. describe:: proxy[key]

   Return the item of the underlying mapping with key *key*.  Raises a
   :exc:`KeyError` if *key* is not in the underlying mapping.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 382)

Unknown directive type "describe".

```
.. describe:: iter(proxy)

   Return an iterator over the keys of the underlying mapping.  This is a
   shortcut for ``iter(proxy.keys())``.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 387)

Unknown directive type "describe".

```
.. describe:: len(proxy)

   Return the number of items in the underlying mapping.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 391)

Unknown directive type "method".

```
.. method:: copy()

   Return a shallow copy of the underlying mapping.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 395)

Unknown directive type "method".

```
.. method:: get(key[, default])

   Return the value for *key* if *key* is in the underlying mapping, else
   *default*.  If *default* is not given, it defaults to ``None``, so that
   this method never raises a :exc:`KeyError`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 401)

Unknown directive type "method".

```
.. method:: items()

   Return a new view of the underlying mapping's items (``(key, value)``
   pairs).
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 406)

Unknown directive type "method".

```
.. method:: keys()

   Return a new view of the underlying mapping's keys.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 410)

Unknown directive type "method".

```
.. method:: values()

   Return a new view of the underlying mapping's values.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 414)

Unknown directive type "describe".

```
.. describe:: reversed(proxy)

   Return a reverse iterator over the keys of the underlying mapping.

   .. versionadded:: 3.9
```

Additional Utility Classes and Functions

A simple :class:`object` subclass that provides attribute access to its namespace, as well as a meaningful repr.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 426); *backlink*

Unknown interpreted text role "class".

Unlike :class:`object`, with `SimpleNamespace` you can add and remove attributes. If a `SimpleNamespace` object is initialized with keyword arguments, those are directly added to the underlying namespace.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 429); *backlink*

Unknown interpreted text role "class".

The type is roughly equivalent to the following code:

```
class SimpleNamespace:
    def __init__(self, /, **kwargs):
        self.__dict__.update(kwargs)

    def __repr__(self):
        items = (f"{k}={v!r}" for k, v in self.__dict__.items())
        return "{}({})".format(type(self).__name__, ", ".join(items))

    def __eq__(self, other):
        if isinstance(self, SimpleNamespace) and isinstance(other, SimpleNamespace):
           return self.__dict__ == other.__dict__
        return NotImplemented
```

`SimpleNamespace` may be useful as a replacement for `class NS: pass`. However, for a structured record type use :func:`~collections.namedtuple` instead.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 448); *backlink*

Unknown interpreted text role "func".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 452)

Unknown directive type "versionadded".

```
.. versionadded:: 3.3
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 454)

Unknown directive type "versionchanged".

```
.. versionchanged:: 3.9
   Attribute order in the repr changed from alphabetical to insertion (like
   ``dict``).
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 458)

Unknown directive type "function".

```
.. function:: DynamicClassAttribute(fget=None, fset=None, fdel=None, doc=None)

   Route attribute access on a class to __getattr__.

   This is a descriptor, used to define attributes that act differently when
   accessed through an instance and through a class.  Instance access remains
   normal, but access to an attribute through a class will be routed to the
   class's __getattr__ method; this is done by raising AttributeError.

   This allows one to have properties active on an instance, and have virtual
   attributes on the class with the same name (see :class:`enum.Enum` for an example).

   .. versionadded:: 3.4
```

Coroutine Utility Functions

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\library\[cpython-main][Doc][library]types.rst, line 476)

Unknown directive type "function".

```
.. function:: coroutine(gen_func)

   This function transforms a :term:`generator` function into a
   :term:`coroutine function` which returns a generator-based coroutine.
   The generator-based coroutine is still a :term:`generator iterator`,
   but is also considered to be a :term:`coroutine` object and is
   :term:`awaitable`.  However, it may not necessarily implement
   the :meth:`__await__` method.

   If *gen_func* is a generator function, it will be modified in-place.

   If *gen_func* is not a generator function, it will be wrapped. If it
   returns an instance of :class:`collections.abc.Generator`, the instance
   will be wrapped in an *awaitable* proxy object.  All other types
   of objects will be returned as is.

   .. versionadded:: 3.5
```