

:mod: `__future__` --- Future statement definitions

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

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Unknown directive type "module".

```
.. module:: __future__
   :synopsis: Future statement definitions
```

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

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:mod: `__future__` is a real module, and serves three purposes:

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- To avoid confusing existing tools that analyze import statements and expect to find the modules they're importing.
- To ensure that :ref: future statements <future> run under releases prior to 2.1 at least yield runtime exceptions (the import of :mod: `__future__` will fail, because there was no module of that name prior to 2.1).

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- To document when incompatible changes were introduced, and when they will be --- or were --- made mandatory. This is a form of executable documentation, and can be inspected programmatically via importing :mod: `__future__` and examining its contents.

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Each statement in :file: `__future__.py` is of the form

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```
FeatureName = _Feature(OptionalRelease, MandatoryRelease,
                        CompilerFlag)
```

where, normally, *OptionalRelease* is less than *MandatoryRelease*, and both are 5-tuples of the same form as `:data:`sys.version_info``:

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```
(PY_MAJOR_VERSION, # the 2 in 2.1.0a3; an int
PY_MINOR_VERSION, # the 1; an int
PY_MICRO_VERSION, # the 0; an int
PY_RELEASE_LEVEL, # "alpha", "beta", "candidate" or "final"; string
PY_RELEASE_SERIAL # the 3; an int
)
```

OptionalRelease records the first release in which the feature was accepted.

In the case of a *MandatoryRelease* that has not yet occurred, *MandatoryRelease* predicts the release in which the feature will become part of the language.

Else *MandatoryRelease* records when the feature became part of the language; in releases at or after that, modules no longer need a future statement to use the feature in question, but may continue to use such imports.

MandatoryRelease may also be `None`, meaning that a planned feature got dropped.

Instances of class `:class:`_Feature`` have two corresponding methods, `:meth:`getOptionalRelease`` and `:meth:`getMandatoryRelease``.

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CompilerFlag is the (bitfield) flag that should be passed in the fourth argument to the built-in function `:func:`compile`` to enable the feature in dynamically compiled code. This flag is stored in the `:attr:`compiler_flag`` attribute on `:class:`_Feature`` instances.

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No feature description will ever be deleted from `:mod:`__future__``. Since its introduction in Python 2.1 the following features have found their way into the language using this mechanism:

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feature	optional in	mandatory in	effect
nested_scopes	2.1.0b1	2.2	PEP 227 : <i>Statically Nested Scopes</i>
generators	2.2.0a1	2.3	PEP 255 : <i>Simple Generators</i>
division	2.2.0a2	3.0	PEP 238 : <i>Changing the Division Operator</i>
absolute_import	2.5.0a1	3.0	PEP 328 : <i>Imports: Multi-Line and Absolute/Relative</i>
with_statement	2.5.0a1	2.6	PEP 343 : <i>The "with" Statement</i>
print_function	2.6.0a2	3.0	PEP 3105 : <i>Make print a function</i>
unicode_literals	2.6.0a2	3.0	PEP 3112 : <i>Bytes literals in Python 3000</i>
generator_stop	3.5.0b1	3.7	PEP 479 : <i>StopIteration handling inside generators</i>
annotations	3.7.0b1	3.11	PEP 563 : <i>Postponed evaluation of annotations</i>

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Unknown directive type "seealso".

```
.. seealso::
```

```
:ref:`future`
    How the compiler treats future imports.
```