

Function Objects

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main) (Doc) (c-api) function.rst, line 1)

Unknown directive type "highlight".

```
.. highlight:: c
```

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Unknown directive type "index".

```
.. index:: object: function
```

There are a few functions specific to Python functions.

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Unknown directive type "c:type".

```
.. c:type:: PyFunctionObject
```

The C structure used for functions.

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Unknown directive type "c:var".

```
.. c:var:: PyTypeObject PyFunction_Type
```

```
.. index:: single: MethodType (in module types)
```

This is an instance of :c:type:`PyTypeObject` and represents the Python function type. It is exposed to Python programmers as ``types.FunctionType``.

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Unknown directive type "c:function".

```
.. c:function:: int PyFunction_Check(PyObject *o)
```

Return true if *o* is a function object (has type :c:data:`PyFunction_Type`). The parameter must not be ``NULL``. This function always succeeds.

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_New(PyObject *code, PyObject *globals)
```

Return a new function object associated with the code object *code*. *globals* must be a dictionary with the global variables accessible to the function.

The function's docstring and name are retrieved from the code object. *__module__* is retrieved from *globals*. The argument defaults, annotations and closure are set to ``NULL``. *__qualname__* is set to the same value as the code object's ``co_qualname`` field.

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_NewWithQualName(PyObject *code, PyObject *globals, PyObject *qualname)

As :c:func:`PyFunction_New`, but also allows setting the function object's
`__qualname__` attribute. *qualname* should be a unicode object or ``NULL``;
if ``NULL``, the `__qualname__` attribute is set to the same value as the
code object's `co_qualname` field.

.. versionadded:: 3.3
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_GetCode(PyObject *op)

Return the code object associated with the function object *op*.
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_GetGlobals(PyObject *op)

Return the globals dictionary associated with the function object *op*.
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_GetModule(PyObject *op)

Return a :term:`borrowed reference` to the `__module__` attribute of the
function object *op*. It can be *NULL*.

This is normally a string containing the module name, but can be set to any
other object by Python code.
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_GetDefaults(PyObject *op)

Return the argument default values of the function object *op*. This can be a
tuple of arguments or ``NULL``.
```

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Unknown directive type "c:function".

```
.. c:function:: int PyFunction_SetDefaults(PyObject *op, PyObject *defaults)

Set the argument default values for the function object *op*. *defaults* must be
`Py_None` or a tuple.

Raises :exc:`SystemError` and returns ``-1`` on failure.
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject* PyFunction_GetClosure(PyObject *op)

Return the closure associated with the function object *op*. This can be ``NULL``
or a tuple of cell objects.
```

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Unknown directive type "c:function".

```
.. c:function:: int PyFunction_SetClosure(PyObject *op, PyObject *closure)

    Set the closure associated with the function object *op*. *closure* must be
    ``Py_None`` or a tuple of cell objects.

    Raises :exc:`SystemError` and returns ``-1`` on failure.
```

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyFunction_GetAnnotations(PyObject *op)

    Return the annotations of the function object *op*. This can be a
    mutable dictionary or ``NULL``.
```

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Unknown directive type "c:function".

```
.. c:function:: int PyFunction_SetAnnotations(PyObject *op, PyObject *annotations)

    Set the annotations for the function object *op*. *annotations*
    must be a dictionary or ``Py_None``.

    Raises :exc:`SystemError` and returns ``-1`` on failure.
```