

Context Variables Objects

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

Unknown directive type "highlight".

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

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Unknown directive type "versionchanged".

```
.. versionchanged:: 3.7.1

.. note::

    In Python 3.7.1 the signatures of all context variables
    C APIs were changed to use :c:type:`PyObject` pointers instead
    of :c:type:`PyContext`, :c:type:`PyContextVar`, and
    :c:type:`PyContextToken`, e.g.:

        // in 3.7.0:
        PyContext *PyContext_New(void);

        // in 3.7.1+:
        PyObject *PyContext_New(void);

    See :issue:`34762` for more details.
```

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Unknown directive type "versionadded".

```
.. versionadded:: 3.7
```

This section details the public C API for the `mod:`contextvars`` module.

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Unknown interpreted text role "mod".

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Unknown directive type "c.type".

```
.. c:type:: PyContext

    The C structure used to represent a :class:`contextvars.Context`
    object.
```

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Unknown directive type "c.type".

```
.. c:type:: PyContextVar

    The C structure used to represent a :class:`contextvars.ContextVar`
    object.
```

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Unknown directive type "c:type".

```
.. c:type:: PyContextToken
```

The C structure used to represent a :class:`contextvars.Token` object.

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Unknown directive type "c:var".

```
.. c:var:: PyTypeObject PyContext_Type
```

The type object representing the `*context*` type.

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Unknown directive type "c:var".

```
.. c:var:: PyTypeObject PyContextVar_Type
```

The type object representing the `*context variable*` type.

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Unknown directive type "c:var".

```
.. c:var:: PyTypeObject PyContextToken_Type
```

The type object representing the `*context variable token*` type.

Type-check macros:

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Unknown directive type "c:function".

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

Return true if `*o*` is of type :c:data:`PyContext_Type`. `*o*` must not be `NULL`. This function always succeeds.

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Unknown directive type "c:function".

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

Return true if `*o*` is of type :c:data:`PyContextVar_Type`. `*o*` must not be `NULL`. This function always succeeds.

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Unknown directive type "c:function".

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

Return true if `*o*` is of type :c:data:`PyContextToken_Type`. `*o*` must not be `NULL`. This function always succeeds.

Context object management functions:

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyContext_New(void)
```

Create a new empty context object. Returns ``NULL`` if an error has occurred.

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyContext_Copy(PyObject *ctx)
```

Create a shallow copy of the passed *ctx* context object. Returns ``NULL`` if an error has occurred.

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyContext_CopyCurrent(void)
```

Create a shallow copy of the current thread context. Returns ``NULL`` if an error has occurred.

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Unknown directive type "c:function".

```
.. c:function:: int PyContext_Enter(PyObject *ctx)
```

Set *ctx* as the current context for the current thread. Returns ``0`` on success, and ``-1`` on error.

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Unknown directive type "c:function".

```
.. c:function:: int PyContext_Exit(PyObject *ctx)
```

Deactivate the *ctx* context and restore the previous context as the current context for the current thread. Returns ``0`` on success, and ``-1`` on error.

Context variable functions:

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyContextVar_New(const char *name, PyObject *def)
```

Create a new ``ContextVar`` object. The *name* parameter is used for introspection and debug purposes. The *def* parameter specifies a default value for the context variable, or ``NULL`` for no default. If an error has occurred, this function returns ``NULL``.

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Unknown directive type "c:function".

```
.. c:function:: int PyContextVar_Get(PyObject *var, PyObject *default_value, PyObject **value)
```

Get the value of a context variable. Returns ``-1`` if an error has occurred during lookup, and ``0`` if no error occurred, whether or not a value was found.

If the context variable was found, **value** will be a pointer to it. If the context variable was **not** found, **value** will point to:

- **default_value**, if not ``NULL``;
- the default value of **var**, if not ``NULL``;
- ``NULL``

Except for ``NULL``, the function returns a new reference.

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Unknown directive type "c:function".

```
.. c:function:: PyObject *PyContextVar_Set(PyObject *var, PyObject *value)
```

Set the value of **var** to **value** in the current context. Returns a new token object for this change, or ``NULL`` if an error has occurred.

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Unknown directive type "c:function".

```
.. c:function:: int PyContextVar_Reset(PyObject *var, PyObject *token)
```

Reset the state of the **var** context variable to that it was in before :c:func:`PyContextVar_Set` that returned the **token** was called. This function returns ``0`` on success and ``-1`` on error.