

DateTime Objects

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

Unknown directive type "highlight".

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

Various date and time objects are supplied by the `:mod:`datetime`` module. Before using any of these functions, the header file `:file:`datetime.h`` must be included in your source (note that this is not included by `:file:`Python.h``), and the macro `:macro:`PyDateTime_IMPORT`` must be invoked, usually as part of the module initialisation function. The macro puts a pointer to a C structure into a static variable, `:cdata:`PyDateTimeAPI``, that is used by the following macros.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 8); [backlink](#)

Unknown interpreted text role "mod".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 8); [backlink](#)

Unknown interpreted text role "file".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 8); [backlink](#)

Unknown interpreted text role "file".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 8); [backlink](#)

Unknown interpreted text role "cmacro".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 8); [backlink](#)

Unknown interpreted text role "cdata".

Macro for access to the UTC singleton:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 18)

Unknown directive type "cvar".

```
.. c:var:: PyObject* PyDateTime_TimeZone_UTC

Returns the time zone singleton representing UTC, the same object as
:attr:`datetime.timezone.utc`.

.. versionadded:: 3.7
```

Type-check macros:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 28)

Unknown directive type "c:function".

```
.. c:function:: int PyDate_Check(PyObject *ob)

Return true if *ob* is of type :cdata:`PyDateTime_DateType` or a subtype of
:cdata:`PyDateTime_DateType`. *ob* must not be ``NULL``. This function always
succeeds.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 35)

Unknown directive type "c:function".

```
.. c:function:: int PyDate_CheckExact(PyObject *ob)

Return true if *ob* is of type :cdata:`PyDateTime_DateType`. *ob* must not be
``NULL``. This function always succeeds.
```

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

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_Check(PyObject *ob)

Return true if *ob* is of type :cdata:`PyDateTime_DateTimeType` or a subtype of
:cdata:`PyDateTime_DateTimeType`. *ob* must not be ``NULL``. This function always
succeeds.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 48)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_CheckExact(PyObject *ob)

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

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 54)

Unknown directive type "c:function".

```
.. c:function:: int PyTime_Check(PyObject *ob)

Return true if *ob* is of type :c:data:`PyDateTime_TimeType` or a subtype of
:c:data:`PyDateTime_TimeType`. *ob* must not be ``NULL``. This function always
succeeds.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 61)

Unknown directive type "c:function".

```
.. c:function:: int PyTime_CheckExact(PyObject *ob)

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

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 67)

Unknown directive type "c:function".

```
.. c:function:: int PyDelta_Check(PyObject *ob)

Return true if *ob* is of type :c:data:`PyDateTime_DeltaType` or a subtype of
:c:data:`PyDateTime_DeltaType`. *ob* must not be ``NULL``. This function always
succeeds.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 74)

Unknown directive type "c:function".

```
.. c:function:: int PyDelta_CheckExact(PyObject *ob)

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

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 80)

Unknown directive type "c:function".

```
.. c:function:: int PyTZInfo_Check(PyObject *ob)

Return true if *ob* is of type :c:data:`PyDateTime_TZInfoType` or a subtype of
:c:data:`PyDateTime_TZInfoType`. *ob* must not be ``NULL``. This function always
succeeds.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 87)

Unknown directive type "c:function".

```
.. c:function:: int PyTZInfo_CheckExact(PyObject *ob)

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

Macros to create objects:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 95)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDate_FromDate(int year, int month, int day)

Return a :class:`datetime.date` object with the specified year, month and day.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 100)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDateTime_FromDateAndTime(int year, int month, int day, int hour, int minute, int second, int microsecond)

Return a :class:`datetime.datetime` object with the specified year, month, day, hour,
minute, second and microsecond.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-

main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 106)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDateTime_FromDateAndTimeAndFold(int year, int month, int day, int hour, int minute, int second, int fold)

Return a :class:`datetime.datetime` object with the specified year, month, day, hour, minute, second, microsecond and fold.

.. versionadded:: 3.6
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 114)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyTime_FromTime(int hour, int minute, int second, int usecond)

Return a :class:`datetime.time` object with the specified hour, minute, second and microsecond.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 120)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyTime_FromTimeAndFold(int hour, int minute, int second, int usecond, int fold)

Return a :class:`datetime.time` object with the specified hour, minute, second, microsecond and fold.

.. versionadded:: 3.6
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 128)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDelta_FromDSU(int days, int seconds, int useconds)

Return a :class:`datetime.timedelta` object representing the given number of days, seconds and microseconds. Normalization is performed so that the resulting number of microseconds and seconds lie in the ranges documented for :class:`datetime.timedelta` objects.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 135)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyTimeZone_FromOffset(PyDateTime_DeltaType* offset)

Return a :class:`datetime.timezone` object with an unnamed fixed offset represented by the *offset* argument.

.. versionadded:: 3.7
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 142)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyTimeZone_FromOffsetAndName(PyDateTime_DeltaType* offset, PyUnicode* name)

Return a :class:`datetime.timezone` object with a fixed offset represented by the *offset* argument and with tzname *name*.

.. versionadded:: 3.7
```

Macros to extract fields from date objects. The argument must be an instance of :c:data:`PyDateTime_Date`, including subclasses (such as :c:data:`PyDateTime_DateTime`). The argument must not be `NULL`, and the type is not checked:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 150); [backlink](#)

Unknown interpreted text role "c:data".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 150); [backlink](#)

Unknown interpreted text role "c:data".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 155)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_GET_YEAR(PyDateTime_Date *o)

Return the year, as a positive int.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 160)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_GET_MONTH(PyDateTime_Date *o)

Return the month, as an int from 1 through 12.
```

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

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_GET_DAY(PyDateTime_Date *o)

Return the day, as an int from 1 through 31.
```

Macros to extract fields from datetime objects. The argument must be an instance of `xcdata:PyDateTime_DateTime`, including subclasses. The argument must not be `NULL`, and the type is not checked:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 170); [backlink](#)

Unknown interpreted text role "xcdata".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 174)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DATE_GET_HOUR(PyDateTime_DateTime *o)

Return the hour, as an int from 0 through 23.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 179)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DATE_GET_MINUTE(PyDateTime_DateTime *o)

Return the minute, as an int from 0 through 59.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 184)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DATE_GET_SECOND(PyDateTime_DateTime *o)

Return the second, as an int from 0 through 59.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 189)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DATE_GET_MICROSECOND(PyDateTime_DateTime *o)

Return the microsecond, as an int from 0 through 999999.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 193)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDateTime_DATE_GET_TZINFO(PyDateTime_DateTime *o)

Return the tzinfo (which may be ``None``).

.. versionadded:: 3.10
```

Macros to extract fields from time objects. The argument must be an instance of `xcdata:PyDateTime_Time`, including subclasses. The argument must not be `NULL`, and the type is not checked:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 199); [backlink](#)

Unknown interpreted text role "xcdata".

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 203)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_TIME_GET_HOUR(PyDateTime_Time *o)

Return the hour, as an int from 0 through 23.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 208)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_TIME_GET_MINUTE(PyDateTime_Time *o)
```

Return the minute, as an int from 0 through 59.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 213)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_TIME_GET_SECOND(PyDateTime_Time *o)

    Return the second, as an int from 0 through 59.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 218)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_TIME_GET_MICROSECOND(PyDateTime_Time *o)

    Return the microsecond, as an int from 0 through 999999.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 222)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDateTime_TIME_GET_TZINFO(PyDateTime_Time *o)

    Return the tzinfo (which may be ``None``).

.. versionadded:: 3.10
```

Macros to extract fields from time delta objects. The argument must be an instance of :c:data:`PyDateTime_Delta`, including subclasses. The argument must not be `NULL`, and the type is not checked:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 229); [backlink](#)

Unknown interpreted text role "c:data".

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

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DELTA_GET_DAYS(PyDateTime_Delta *o)

    Return the number of days, as an int from -999999999 to 999999999.

.. versionadded:: 3.3
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 240)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DELTA_GET_SECONDS(PyDateTime_Delta *o)

    Return the number of seconds, as an int from 0 through 86399.

.. versionadded:: 3.3
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 247)

Unknown directive type "c:function".

```
.. c:function:: int PyDateTime_DELTA_GET_MICROSECONDS(PyDateTime_Delta *o)

    Return the number of microseconds, as an int from 0 through 999999.

.. versionadded:: 3.3
```

Macros for the convenience of modules implementing the DB API:

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 256)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDateTime_FromTimestamp(PyObject *args)

    Create and return a new :class:`datetime.datetime` object given an argument
    tuple suitable for passing to :meth:`datetime.datetime.fromtimestamp()`.
```

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api]datetime.rst, line 262)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PyDate_FromTimestamp(PyObject *args)

    Create and return a new :class:`datetime.date` object given an argument
```

tuple suitable for passing to :meth:`datetime.date.fromtimestamp()``.