

Sequence Protocol

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

Unknown directive type "highlight".

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

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 9)

Unknown directive type "c:function".

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

Return ``1`` if the object provides the sequence protocol, and ``0`` otherwise. Note that it returns ``1`` for Python classes with a :meth:`__getitem__` method, unless they are :class:`dict` subclasses, since in general it is impossible to determine what type of keys the class supports. This function always succeeds.

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

Unknown directive type "c:function".

```
.. c:function:: Py_ssize_t PySequence_Size(PyObject *o)
               Py_ssize_t PySequence_Length(PyObject *o)
```

```
.. index:: builtin: len
```

Returns the number of objects in sequence *o* on success, and ``-1`` on failure. This is equivalent to the Python expression ``len(o)``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 27)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_Concat(PyObject *o1, PyObject *o2)
```

Return the concatenation of *o1* and *o2* on success, and ``NULL`` on failure. This is the equivalent of the Python expression ``o1 + o2``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 33)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_Repeat(PyObject *o, Py_ssize_t count)
```

Return the result of repeating sequence object *o* *count* times, or ``NULL`` on failure. This is the equivalent of the Python expression ``o * count``.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 39)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_InPlaceConcat(PyObject *o1, PyObject *o2)
```

Return the concatenation of *o1* and *o2* on success, and ``NULL`` on failure. The operation is done *in-place* when *o1* supports it. This is the equivalent

of the Python expression `o1 += o2`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 46)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_InPlaceRepeat(PyObject *o, Py_ssize_t count)
```

Return the result of repeating sequence object **o** **count** times, or `NULL` on failure. The operation is done *in-place* when **o** supports it. This is the equivalent of the Python expression `o *= count`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 53)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_GetItem(PyObject *o, Py_ssize_t i)
```

Return the **i**th element of **o**, or `NULL` on failure. This is the equivalent of the Python expression `o[i]`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 59)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_GetSlice(PyObject *o, Py_ssize_t i1, Py_ssize_t i2)
```

Return the slice of sequence object **o** between **i1** and **i2**, or `NULL` on failure. This is the equivalent of the Python expression `o[i1:i2]`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 65)

Unknown directive type "c:function".

```
.. c:function:: int PySequence_SetItem(PyObject *o, Py_ssize_t i, PyObject *v)
```

Assign object **v** to the **i**th element of **o**. Raise an exception and return `-1` on failure; return `0` on success. This is the equivalent of the Python statement `o[i] = v`. This function *does not* steal a reference to **v**.

If **v** is `NULL`, the element is deleted, but this feature is deprecated in favour of using `:c:func:PySequence_DelItem`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 76)

Unknown directive type "c:function".

```
.. c:function:: int PySequence_DelItem(PyObject *o, Py_ssize_t i)
```

Delete the **i**th element of object **o**. Returns `-1` on failure. This is the equivalent of the Python statement `del o[i]`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 82)

Unknown directive type "c:function".

```
.. c:function:: int PySequence_SetSlice(PyObject *o, Py_ssize_t i1, Py_ssize_t i2, PyObject *v)
```

Assign the sequence object *v* to the slice in sequence object *o* from *i1* to *i2*. This is the equivalent of the Python statement `o[i1:i2] = v`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 88)

Unknown directive type "c:function".

```
.. c:function:: int PySequence_DelSlice(PyObject *o, Py_ssize_t i1, Py_ssize_t i2)
```

Delete the slice in sequence object *o* from *i1* to *i2*. Returns `-1` on failure. This is the equivalent of the Python statement `del o[i1:i2]`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 94)

Unknown directive type "c:function".

```
.. c:function:: Py_ssize_t PySequence_Count(PyObject *o, PyObject *value)
```

Return the number of occurrences of *value* in *o*, that is, return the number of keys for which `o[key] == value`. On failure, return `-1`. This is equivalent to the Python expression `o.count(value)`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 101)

Unknown directive type "c:function".

```
.. c:function:: int PySequence_Contains(PyObject *o, PyObject *value)
```

Determine if *o* contains *value*. If an item in *o* is equal to *value*, return `1`, otherwise return `0`. On error, return `-1`. This is equivalent to the Python expression `value in o`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 108)

Unknown directive type "c:function".

```
.. c:function:: Py_ssize_t PySequence_Index(PyObject *o, PyObject *value)
```

Return the first index *i* for which `o[i] == value`. On error, return `-1`. This is equivalent to the Python expression `o.index(value)`.

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

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_List(PyObject *o)
```

Return a list object with the same contents as the sequence or iterable *o*, or `NULL` on failure. The returned list is guaranteed to be new. This is equivalent to the Python expression `list(o)`.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\cpython-main [Doc] [c-api] sequence.rst, line 121)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_Tuple(PyObject *o)
```

```
.. index:: builtin: tuple
```

Return a tuple object with the same contents as the sequence or iterable **o**, or `NULL` on failure. If **o** is a tuple, a new reference will be returned, otherwise a tuple will be constructed with the appropriate contents. This is equivalent to the Python expression `tuple(o)`.

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

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_Fast(PyObject *o, const char *m)
```

Return the sequence or iterable **o** as an object usable by the other `PySequence_Fast` family of functions. If the object is not a sequence or iterable, raises `exc:TypeError` with **m** as the message text. Returns `NULL` on failure.

The `PySequence_Fast` functions are thus named because they assume **o** is a `c:type:PyTupleObject` or a `c:type:PyListObject` and access the data fields of **o** directly.

As a CPython implementation detail, if **o** is already a sequence or list, it will be returned.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 146)

Unknown directive type "c:function".

```
.. c:function:: Py_ssize_t PySequence_Fast_GET_SIZE(PyObject *o)
```

Returns the length of **o**, assuming that **o** was returned by `c:func:PySequence_Fast` and that **o** is not `NULL`. The size can also be retrieved by calling `c:func:PySequence_Size` on **o**, but `c:func:PySequence_Fast_GET_SIZE` is faster because it can assume **o** is a list or tuple.

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

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_Fast_GET_ITEM(PyObject *o, Py_ssize_t i)
```

Return the **i**th element of **o**, assuming that **o** was returned by `c:func:PySequence_Fast`, **o** is not `NULL`, and that **i** is within bounds.

System Message: ERROR/3 (D:\onboarding-resources\sample-onboarding-resources\cpython-main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 161)

Unknown directive type "c:function".

```
.. c:function:: PyObject** PySequence_Fast_ITEMS(PyObject *o)
```

Return the underlying array of PyObject pointers. Assumes that **o** was returned by `c:func:PySequence_Fast` and **o** is not `NULL`.

Note, if a list gets resized, the reallocation may relocate the items array. So, only use the underlying array pointer in contexts where the sequence cannot change.

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

main\Doc\c-api\[cpython-main] [Doc] [c-api] sequence.rst, line 171)

Unknown directive type "c:function".

```
.. c:function:: PyObject* PySequence_ITEM(PyObject *o, Py_ssize_t i)
```

Return the *i*th element of *o* or ``NULL`` on failure. Faster form of
:c:func:`PySequence_GetItem` but without checking that
:c:func:`PySequence_Check` on *o* is true and without adjustment for negative
indices.