

:mod:`reprlib` --- Alternate :func:`repr` implementation

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Unknown interpreted text role "mod".

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Unknown interpreted text role "func".

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Unknown directive type "module".

```
.. module:: reprlib
   :synopsis: Alternate repr() implementation with size limits.
```

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Unknown directive type "sectionauthor".

```
.. sectionauthor:: Fred L. Drake, Jr. <fdrake@acm.org>
```

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

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Unknown interpreted text role "source".

The `:mod:`reprlib`` module provides a means for producing object representations with limits on the size of the resulting strings. This is used in the Python debugger and may be useful in other contexts as well.

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Unknown interpreted text role "mod".

This module provides a class, an instance, and a function:

Class which provides formatting services useful in implementing functions similar to the built-in `:func:`repr``; size limits for different object types are added to avoid the generation of representations which are excessively long.

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Unknown interpreted text role "func".

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Unknown directive type "data".

```
.. data:: aRepr

   This is an instance of :class:`Repr` which is used to provide the
   :func:`.repr` function described below. Changing the attributes of this
   object will affect the size limits used by :func:`.repr` and the Python
   debugger.
```

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Unknown directive type "function".

```
.. function:: repr(obj)
```

This is the :meth:`~Repr.repr` method of ``aRepr``. It returns a string similar to that returned by the built-in function of the same name, but with limits on most sizes.

In addition to size-limiting tools, the module also provides a decorator for detecting recursive calls to :meth:`~__repr__` and substituting a placeholder string instead.

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Unknown interpreted text role "meth".

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Unknown directive type "index".

```
.. index:: single: ...; placeholder
```

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Unknown directive type "decorator".

```
.. decorator:: recursive_repr(fillvalue="...")
```

Decorator for :meth:`~__repr__` methods to detect recursive calls within the same thread. If a recursive call is made, the *fillvalue* is returned, otherwise, the usual :meth:`~__repr__` call is made. For example:

```
>>> from reprlib import recursive_repr
>>> class MyList(list):
...     @recursive_repr()
...     def __repr__(self):
...         return '<' + '|'.join(map(repr, self)) + '>'
...
>>> m = MyList('abc')
>>> m.append(m)
>>> m.append('x')
>>> print(m)
<'a'|'b'|'c'|...|'x'>
```

```
.. versionadded:: 3.2
```

Repr Objects

:class:`~Repr` instances provide several attributes which can be used to provide size limits for the representations of different object types, and methods which format specific object types.

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Unknown interpreted text role "class".

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Unknown directive type "attribute".

```
.. attribute:: Repr.fillvalue
```

This string is displayed for recursive references. It defaults to
``...``.

.. versionadded:: 3.11

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Unknown directive type "attribute".

.. attribute:: Repr.maxlevel

Depth limit on the creation of recursive representations. The default is ``6``.

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Unknown directive type "attribute".

.. attribute:: Repr.maxdict
Repr.maxlist
Repr.maxtuple
Repr.maxset
Repr.maxfrozenset
Repr.maxdeque
Repr.maxarray

Limits on the number of entries represented for the named object type. The default is ``4`` for :attr:`maxdict`, ``5`` for :attr:`maxarray`, and ``6`` for the others.

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Unknown directive type "attribute".

.. attribute:: Repr.maxlong

Maximum number of characters in the representation for an integer. Digits are dropped from the middle. The default is ``40``.

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Unknown directive type "attribute".

.. attribute:: Repr.maxstring

Limit on the number of characters in the representation of the string. Note that the "normal" representation of the string is used as the character source: if escape sequences are needed in the representation, these may be mangled when the representation is shortened. The default is ``30``.

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Unknown directive type "attribute".

.. attribute:: Repr.maxother

This limit is used to control the size of object types for which no specific formatting method is available on the :class:`Repr` object. It is applied in a similar manner as :attr:`maxstring`. The default is ``20``.

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Unknown directive type "method".

```
.. method:: Repr.repr(obj)
```

The equivalent to the built-in `:func:`repr`` that uses the formatting imposed by the instance.

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Unknown directive type "method".

```
.. method:: Repr.repr1(obj, level)
```

Recursive implementation used by `:meth:`.repr``. This uses the type of `*obj*` to determine which formatting method to call, passing it `*obj*` and `*level*`. The type-specific methods should call `:meth:`repr1`` to perform recursive formatting, with ``level - 1`` for the value of `*level*` in the recursive call.

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Unknown directive type "method".

```
.. method:: Repr.repr_TYPE(obj, level)
:noindex:
```

Formatting methods for specific types are implemented as methods with a name based on the type name. In the method name, `**TYPE**` is replaced by ``'_'.join(type(obj).__name__.split())``. Dispatch to these methods is handled by `:meth:`repr1``. Type-specific methods which need to recursively format a value should call ``self.repr1(subobj, level - 1)``.

Subclassing Repr Objects

The use of dynamic dispatching by `:meth:`Repr.repr1`` allows subclasses of `:class:`Repr`` to add support for additional built-in object types or to modify the handling of types already supported. This example shows how special support for file objects could be added:

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Unknown interpreted text role "meth".

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Unknown interpreted text role "class".

```
import reprlib
import sys

class MyRepr(reprlib.Repr):

    def repr_TextIOWrapper(self, obj, level):
        if obj.name in {'<stdin>', '<stdout>', '<stderr>'}:
            return obj.name
        return repr(obj)

aRepr = MyRepr()
print(aRepr.repr(sys.stdin))          # prints '<stdin>'
```