Strings and Representations

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str() repr()

functions for making
string representations
from Python objects
which call the methods

__str()__ __repr()__

The **built-in** function

repr()

produces an **unambiguous** string
representation of an object.

```
Point2D(x=42, y=69)
```

repr()

- **Exactness is more important than human-friendliness**
- **Suited for debugging**
- **Includes identifying information**
- **Generally best for logging**

python

`repr()` is for **developers**

The result of `repr()`
should generally contain
more information than
the result of `str()`

`str()` is for **clients**

As a rule, you should always write a `repr()` for your classes

The default `repr()` is not very helpful

The built-in function

str()

produces a readable, human-friendly representation of an object

Remember - `str()` is also the string **constructor**

Not programmer oriented

By default, `str()` simply calls `repr()`

But `repr()` does not call `str()`

`repr()` **is used when showing elements of a collection**

The special method

`__format__()`

invoked by `str.format()`

python

```
>>> obj = MyClass()
>>> "{:XYZ}".format(obj)
```

```
class MyClass:

    def __format__(self, f):
        # Return a string representation of self
        # formatted according to the formatting
        # options in format specifier f
        # ...
```

```
>>> obj = MyClass()
>>> "{:XYZ}".format(obj)
```

Replacement fields

`{field_name:format_spec}`

Optional **format specification** after colon

```
class MyClass:

    def __format__(self, f):
        # Return a string representation of self
        # formatted according to the formatting
        # options in format specifier f
        # ...
```

The standard library module

reprlib

supports alternative
implementations of `repr()`

- limits otherwise excessive string length
- useful for large collections

The **standard library** function

`reprlib.repr()`

is a **drop-in replacement** for `repr()`

The standard library class

`reprlib.Repr`

- implements the main functionality of `reprlib`
- supports customisation through subclassing
- http://docs.python.org/3/library/reprlib.html

`reprlib.aRepr`

an **instance** used by Python and debuggers

python™

The built-in functions

ascii()

ord() chr()

The **built-in** function

`ascii()`

replaces non-ASCII characters with escape sequences

The **built-in** function

chr()

Converts an integer Unicode
codepoint to a single character string

The **built-in** function

ord()

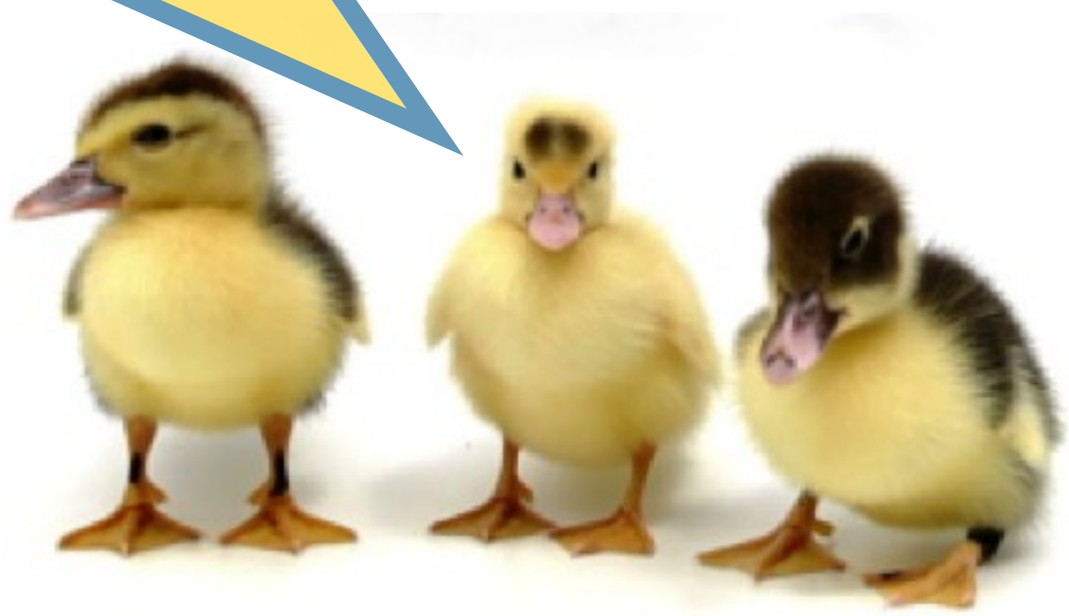
converts a single character to its
integer Unicode codepoint

Duck Tails

Bigger Isn't Always Better

Duck Tails

SOMETIMES THE
repr() OF AN OBJECT WILL
BE SHORTER THAN
ITS str()



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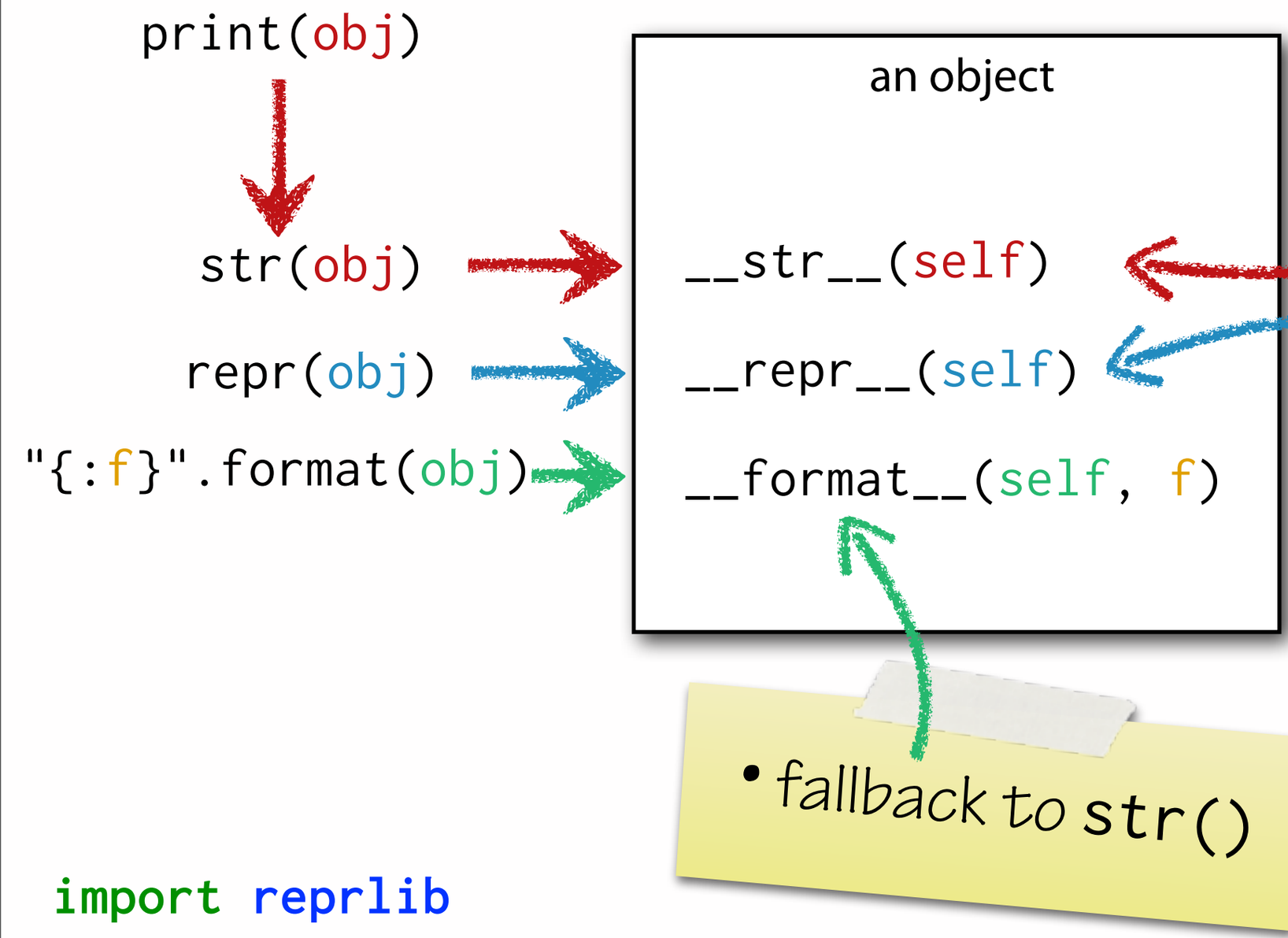


```
import reprlib
reprlib.repr(obj)
```

```
from reprlib import Repr
class MyRepr(Repr):
    # ...
```

```
s = ascii(string)
i = ord(c)
c = chr(i)
```