Python programming

Operators

OPERATORS

Variables and assignment

We’ve already used the assignment operator when using variables.

The = symbol is so familiar we hardly notice it.

When a programmer reads this symbol, they probably don’t think “equals”, more likely they think “is”.

```
message = "This is fine"
```

OPERATORS

Arithmetic

Computers are great at arithmetic, so it’s no surprise that Python has a simple syntax for arithmetic.

```
2 + 2
(50 - 5*6) / 4
```

Values can be replaced by variables.

```
width = 12.2
height = 45.5
area = width * height
```

OPERATORS

Strings

Joining text strings is easy, although Python doesn’t see text in the way we do. These are all the same.

```
"alice"+"bob"
"alice" "bob"
("alice"
 "bob")
```

And none of these are what you might intend!

Try it.

OPERATORS

The less familiar

```
//   # integer division
%    # division remainder (modulus)
-=   # decrement
+=   # increment
**   # exponent
```

OPERATORS

Slicing strings

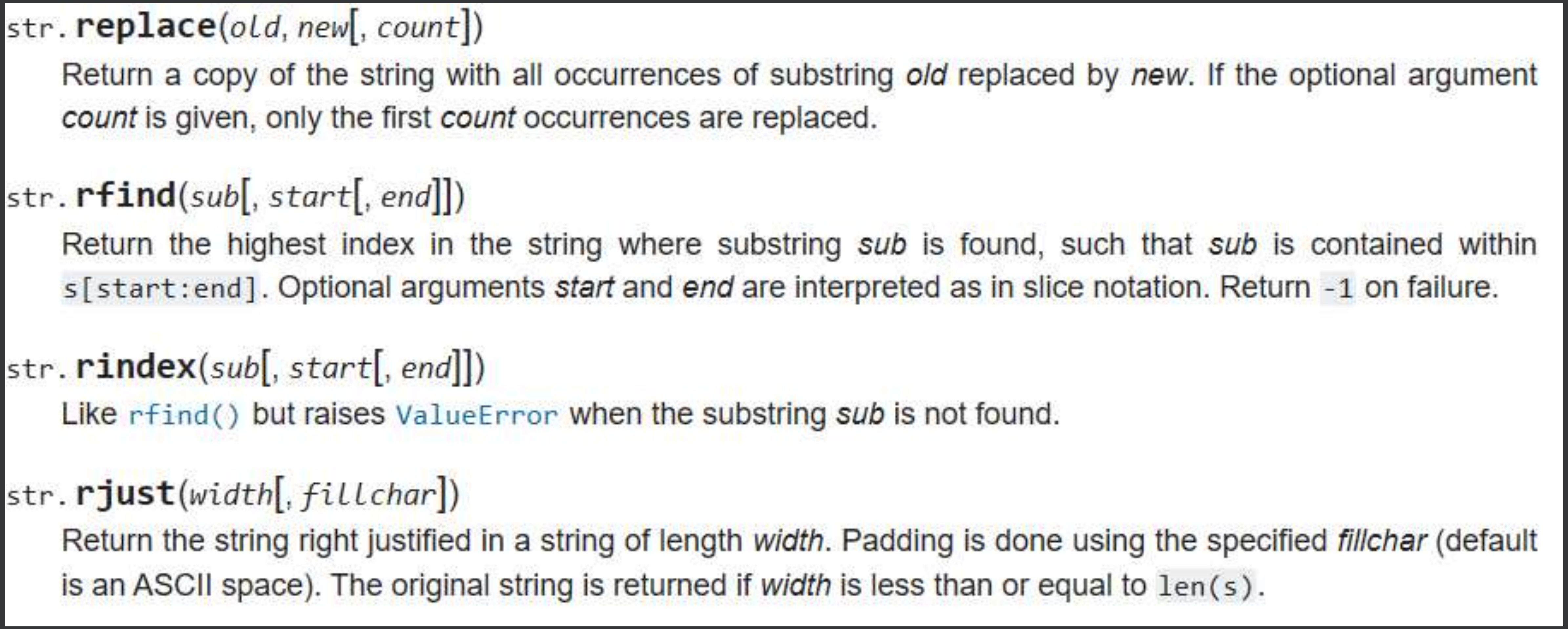
Sometimes we just want part of a string.

```
name = "alice"
initial = name[0]
day = "thursday"
abrev = day[0:3]
```

METHODS

Often there is no obvious symbol

```python
my_name = "MICHAEL".capitalize()
```



str.**replace**(*old*, *new*[, *count*])

Return a copy of the string with all occurrences of substring *old* replaced by *new*. If the optional argument *count* is given, only the first *count* occurrences are replaced.

str.**rfind**(*sub*[, *start*[, *end*]])

Return the highest index in the string where substring *sub* is found, such that *sub* is contained within `s[start:end]`. Optional arguments *start* and *end* are interpreted as in slice notation. Return `-1` on failure.

str.**rindex**(*sub*[, *start*[, *end*]])

Like `rfind()` but raises `ValueError` when the substring *sub* is not found.

str.**rjust**(*width*[, *fillchar*])

Return the string right justified in a string of length *width*. Padding is done using the specified *fillchar* (default is an ASCII space). The original string is returned if *width* is less than or equal to `len(s)`.

https://docs.python.org/3/library/stdtypes.html#string-methods

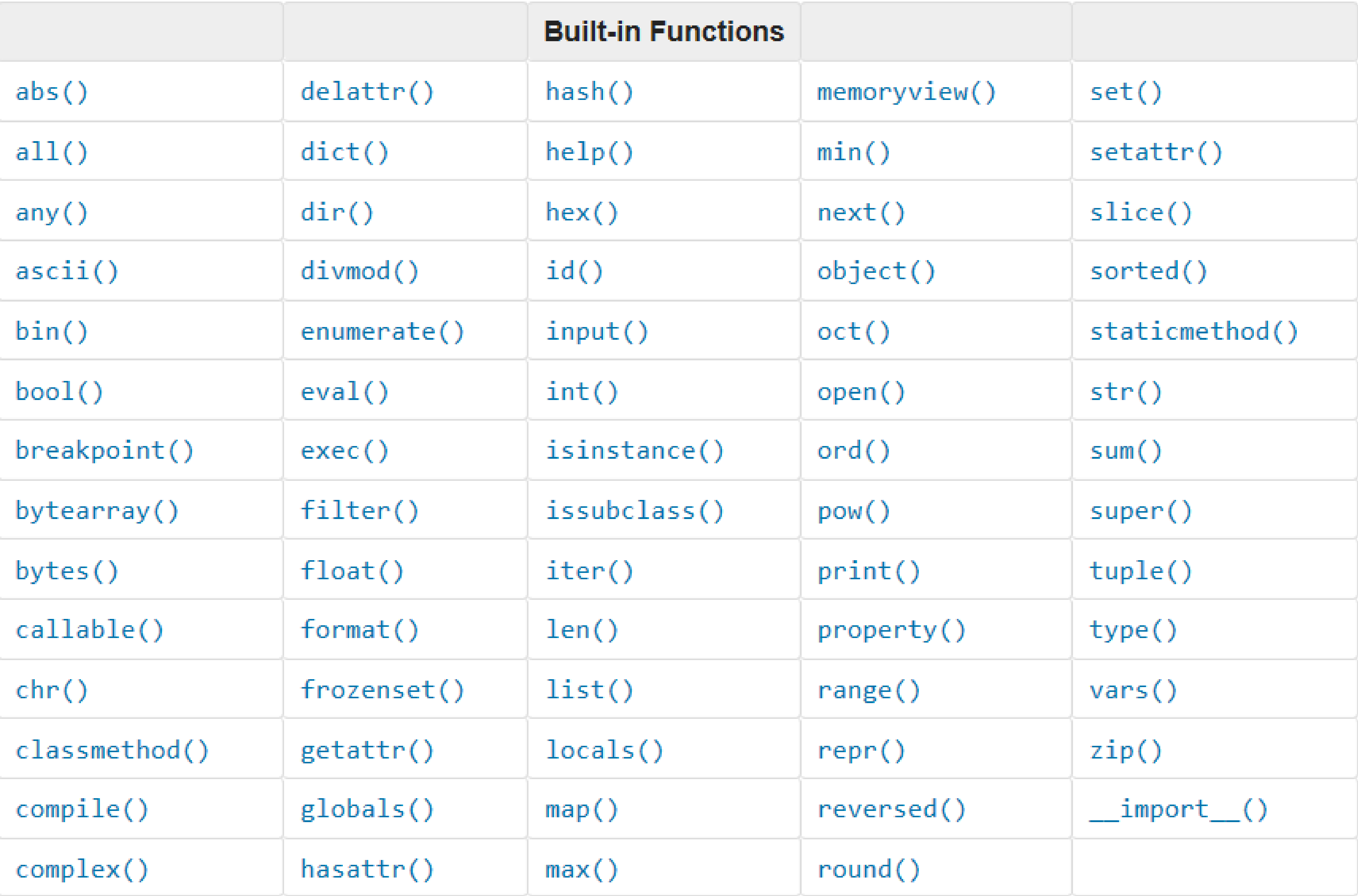
FUNCTIONS

Return a result that depends on inputs

```
str_len = len("MICHAEL")
smaller = min(9,100,4)
```

BUILT IN FUNCTIONS

Frequently used functions are built in to the Python system.



		Built-in Functions		
abs()	delattr()	hash()	memoryview()	set()
all()	dict()	help()	min()	setattr()
any()	dir()	hex()	next()	slice()
ascii()	divmod()	id()	object()	sorted()
bin()	enumerate()	input()	oct()	staticmethod()
bool()	eval()	int()	open()	str()
breakpoint()	exec()	isinstance()	ord()	sum()
bytearray()	filter()	issubclass()	pow()	super()
bytes()	float()	iter()	print()	tuple()
callable()	format()	len()	property()	type()
chr()	frozenset()	list()	range()	vars()
classmethod()	getattr()	locals()	repr()	zip()
compile()	globals()	map()	reversed()	__import__()
complex()	hasattr()	max()	round()	

EXERCISES

Arithmetic

Converting types

Formatting text

Making selections – min(), max()

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