CUCaTS Python Cheatsheet

Datatype	Example
Integers	`5`
Floats	`9.6`
Booleans	`True` and `False`
Strings	`"Hello world!"`
Lists	`[4, 8, 15, 16, 23, 42]`
	`["first", "second"]`
	`[[], "some text", 99]`
Dictionaries	`{"Alice": 42, "Bob": 40}`

Operations

`+`, `-`, `*`, `/`, `%`	(on integers or floats)
`+`	(to join strings or lists)
`==`, `!=`	(comparing any values)
`>`, `>=`, `<`, `<=`	(comparing integers or floats)
`and`, `or`, `not`	(on booleans)

Lists and Strings

Element access	`list[index]`
Slicing	`list[start:end]`
Length	`len(___)`
Comprehensions	`[___ for ___ in ___]`
	`[___ for ___ in ___ if ___]`

Variables

Labels onto values. Names must consist only of letters, digits and underscores. Cannot start with a digit or have spaces. They are case sensitive.

Loops

```
for ___ in ___:

while ___:

    break
    continue
```

Branches

```
if ___:
elif ___:
else:
```

Functions

```
def ___(___):

    return ___
```

Exceptions

```
try:
except ___:
finally:

raise ___
```

Common functions and methods

```
range(end)
range(start, end)
range(start, end, step)

enumerate(list)
zip(list, otherlist)

list(iterable)
str(value)
int(value)

list.append(item)
list.reverse()
list.remove(item)

string.split(separator)
string.capitalize()
string.upper()
string.lower()
string.find(substring)

dict.keys()
dict.update(otherdict)
```

Files

Opening and reading the whole file:

```
with open("input.txt") as file:
    print(file.read())
```

Line by line:

```
with open("input.txt") as file:
    for line in file:
        print(line)
```

Writing:

```
with open("input.txt", "w") as file:
    file.write(str(somelist))
```

`with` automatically closes the file at the end of the block. Manually closing instead:

```
file = open("input.txt")
[...]
file.close()
```