

```
print("Hello world")
```

- Interactively via the `python3` or `ipython` interpreter
- Write your program in a file

- start your file with

```
#!/usr/bin/env python3
```

- run your file as

```
$ python3 <your-file-name>
```

Base types, operators

■ Types

- `int` 783 0 -192 `0b010` `0o642` `0xF3`
- `float` as for C
- `bool` True False
- `str` Delimiters: `'` `"` `"""` ← multiline strings allowed
- `bytes` `b"\xfe\775abcd"`

■ Operators

- `and`, `or`, `not`
- `1/2` usual division, gives 0.5
- `1//2` integer division, gives 0
- `**` exponentiation
- others as for C (mostly)

Container types

- Tuples `(11, "y", 7.4)`
- Lists `[ 11, "y", 7.4 ]`
- Dictionaries `{ 1:11, 2:"y", 3:7.4, 3.14:"pi" }`
- Sets `{ 11, "y", 7.4 }`

Indexing

Membership `in`

Iterators

- `range(n)`
- `range(start, stop, step)`
- `enumerate(l)`

Assignments

```
a = b = c = 0
```

```
y, z, r = 9.2, -7.6, 0 ← multiple assignments
```

```
a, b = b, a ← swap!
```

```
+=      -=      *=      /=      %=
```

- `if <condition> :, elif <condition> :, else :`
- `while <condition> :, continue, break`
- `for <variable> in <container type> :`
`for <variable> in <iterator> :`
- `def fname(arg1, arg2, arg3) :`
(remember to include a `return <value>` or `return None`)

Scope is defined by spaces not braces!

Configure your editor appropriately.

■ Containers:

`len()`, `max()`, `min()`, `sum()`, `sorted()`, `reversed()`

■ Ordered containers (lists, tuples, strings, bytes):

`l.index(val)`, `l.count(val)`

+ concatenation

■ Lists:

`append(value)`, `extend(sequence)`, `insert(index, value)`,
`sort()`, `reverse()`

- Read using `s = input("Prompt string: ")`
- `s` is always a string
- Convert `s` to appropriate type using `int()`, `float()`, `bool()`, etc.

Mutable vs. immutable types

- **Immutable:** str, bytes, tuples, frozensets
- **Mutable:** lists, dictionaries, sets

- <https://perso.limsi.fr/pointal/python:memento>
- <https://perso.limsi.fr/pointal/python:abrege>
- <http://ehmatthes.github.io/pcc/cheatsheets/README.html>