Effective Python

2018-10-11 Reaktor

Modules & Packages

- What is the purpose of `__init__.py`?
- What does `__main__.py` do?
- Running programs with `python -m`
- Relative imports

String Formatting

- Do not use `"Hello %s!" % "World"`, it's the python2 way
- Use f-strings `name = "World"; f"Hello {name}!"`
- Or if you can't use 3.6 or newer (or must support older versions also), use str.format, aka. `"Hello {}!".format("World")`

Containers, iterables, iterators, generators...

- If you can check whether an item is `in` something, then it is a **container**
- Anything that can be *iterated* with `for i in items` is an **iterable**
- Anything that has a `__next__` method is an **iterator**
  - This means you can use the builtin `next` function with it
- If it has `__next__` and `__iter__` it is a **generator**
- For a good writeup on all of these and more examples, see https://nvie.com/posts/iterators-vs-generators/

List Comprehension

- `[get_data(v) for v in values]`
- `[get_data(v) for v in values if v > 0]`

- List of 10 zeroes
  - `[0 for _ in range(10)]`
- “2D” list of size 1024x768
  - `[[0 for i in range(768)] for j in range(1024)]`

Dictionary and Set Comprehension

What works with lists, also works in the same way with dictionaries and sets.

- `{v: get_data(v) for v in values}`
- `{v: get_data(v) for v in values if v > 0}`
- `{get_data(v) for v in values}`

Generator Expressions

- Do note that this is not “tuple comprehension”
- `squares = (x * x for x in numbers)`

Collections & Itertools

- `collections`, different useful containers
  - `namedtuple`
  - `defaultdict`
  - `Counter`
- `Itertools`, tools for working with iterables
  - `chain`
  - `takewhile`
  - `product`

“Magic” methods

- What on earth does the `if __name__ == “__main__”` mean?
  - When is it `__main__`?
  - What does this have to do with `__main__.py`
- What are some other common magic methods?
  - `__str__`
  - `__repr__`
  - Before mentioned `__iter__` and `__next__`
  - See https://docs.python.org/3/reference/datamodel.html for more

Clone
https://github.com/polarpayne/effective-python
and let’s go!