

Listing a directory contents

In your solution, you will have to go through all files stored in directories:

- images in training data directory (to learn something from them, i.e., estimate the parameters of a model) and
- images in testing data directory (to classify these images with the chosen classifier).

There is more ways to achieve this; we shall list here some of them.



os.listdir()

Function `listdir()` (docs [<https://docs.python.org/3/library/os.html?highlight=listdir#os.listdir>]) from `os` module returns a list of filename from specified directory. If we have the following directory with files

```
+-- train_data
   +- truth.dsv
   +- img112.png
   +- img113.png
   +- img114.png
```

then the following script

```
import os

for fname in os.listdir("train_data"):
    print(fname)
```

provides this output:

```
img_1112.png
img_1113.png
img_1114.png
truth.dsv
```

You can also use similar function `os.scandir()` [<https://docs.python.org/3/library/os.html?highlight=listdir#os.scandir>] which returns a generator.

Object-oriented interface of "pathlib" module

If you like object-oriented interfaces better, then you can use class `Path` and its method `iterdir()` (docs [<https://docs.python.org/3/library/pathlib.html?highlight=iterdir#pathlib.Path.iterdir>]):

```
from pathlib import Path

path = Path("train_data")
for fpath in path.iterdir():
    print(fpath)
```

After running the above script:

```
train_data\img_1112.png
train_data\img_1113.png
train_data\img_1114.png
train_data\truth.dsv
```

Generator `iterdir()` returns instances of `Path` class which encapsulate the paths to individual files. But you can easily use these objects when opening files using `open()` function.

More examples how to use `pathlib` can be found in this nice [pathlib tutorial](https://miguendes.me/python-pathlib) [<https://miguendes.me/python-pathlib>].

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