

Reading and Writing Files with Pathlib



Create Paths

```
from pathlib import Path

relative_path = Path("folder/file.txt")
# On Linux
absolute_path = Path("/folder/subfolder/file.txt")
# On Windows
absolute_path = Path(r"C:\User\folder\file.txt")
absolute_path = Path("/User/folder/file.txt")

home = Path.home()
workingDir = Path.cwd()

some_path = home / "folder/subfolder" / "file.txt"
```



Extract Information

```
>>>
>>> from pathlib import Path
>>> fizzbuzz = Path("easyExercise_05_fizzbuzz.py")
>>> fizzbuzz
PosixPath('easyExercise_05_fizzbuzz.py')
>>> fizzbuzz = fizzbuzz.resolve()
>>> fizzbuzz
PosixPath('/home/jonas/Dokumente/pythonBootcamp2021/code/easyExercise_05_fizzbuzz.py')
>>> str(fizzbuzz)
'/home/jonas/Dokumente/pythonBootcamp2021/code/easyExercise_05_fizzbuzz.py'
>>> fizzbuzz.name
'easyExercise_05_fizzbuzz.py'
>>> fizzbuzz.parent
PosixPath('/home/jonas/Dokumente/pythonBootcamp2021/code')
>>> fizzbuzz.stem
'easyExercise_05_fizzbuzz'
>>> fizzbuzz.suffix
'.py'
>>> fizzbuzz.anchor
 '/'
>>>
```



Reading Files

loremIpsum.txt

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```
>>> from pathlib import Path
>>> file = Path("loremIpsum.txt")
>>> content = file.read_text()
>>> content[0:20]
'Lorem ipsum dolor si'
>>>
```



Writing Files

```
>>>  
>>> from pathlib import Path  
>>> file = Path("newFile.txt")  
>>> file.write_text("Some interesting text\n")  
22
```



newFile.txt

```
Some interesting text
```

```
>>> file.write_text("Some more interesting text\n")  
27  
>>>
```



newFile.txt

```
Some more interesting text
```

```
>>> with file.open("a") as f:  
...     f.write("This will be appended to the file.\n")  
...  
35
```



newFile.txt

```
Some more interesting text  
This will be appended to the file.
```



Handling Multiple Files

```
>>>
>>> folder = Path("dummyFiles")
>>> print(folder.resolve())
/home/jonas/Dokumente/pythonBootcamp2021/code/dummyFiles
>>> for file in folder.iterdir():
...     content = file.read_text()
...     print(f"{str(file)} : {content[0:20]}")
...
dummyFiles/loremIpsum.txt : Lorem ipsum dolor si
dummyFiles/file2.txt : EFGH

dummyFiles/newFile.txt : Some more interestin
dummyFiles/file1.txt : ABCD

dummyFiles/file3.txt : IJKL

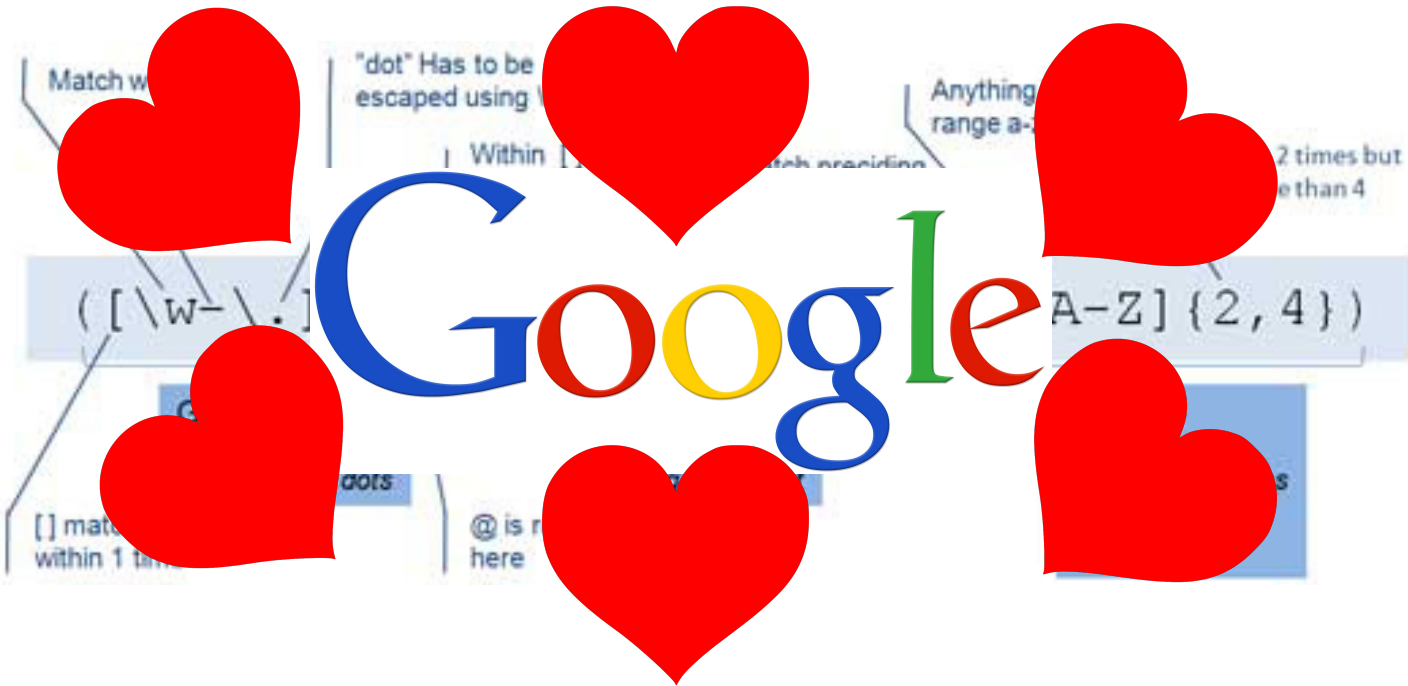
dummyFiles/file4.txt : MNOP
```

```
>>>
>>> for file in folder.glob("file*"):
...     print(file.name)
...
file2.txt
file1.txt
file3.txt
file4.txt
>>> unsorted_file_list = folder.glob("file*")
>>> sorted_file_list = sorted(unsorted_file_list)
>>> for file in sorted_file_list:
...     print(file.name)
...
file1.txt
file2.txt
file3.txt
file4.txt
>>>
```



Regex / Regular Expressions

```
import re  
re.findall(pattern, string)
```



Exercise 6: Reading Files

You should have a folder with a bunch of files named alphabet and numbers.

Read the content of the files and print the content of the files in the right order to the screen.

Your result should be the alphabet and the numbers from 0 to 9.



And more ...

Move, delete, copy files.

Create, delete, move directories.

Do anything you can do with files and directories.



File Types

CSV

```
"1.0.0.0","1.0.0.255","16777216","16777471","AU","Australia"  
"1.0.1.0","1.0.3.255","16777472","16778239","CN","China"  
"1.0.4.0","1.0.7.255","16778240","16779263","AU","Australia"  
"1.0.8.0","1.0.15.255","16779264","16781311","CN","China"  
"1.0.16.0","1.0.31.255","16781312","16785407","JP","Japan"  
"1.0.32.0","1.0.63.255","16785408","16793599","CN","China"  
"1.0.64.0","1.0.127.255","16793600","16809983","JP","Japan"  
"1.0.128.0","1.0.255.255","16809984","16842751","TH","Thailand"
```

```
import csv
```

JSON

```
1 {  
2   "orderId": 12345,  
3   "shopperName": "Ivan Ivanov",  
4   "shopperEmail": "ivanov@example.com",  
5   "contents": [  
6     {  
7       "productId": 34,  
8       "productName": "Super product",  
9       "quantity": 1  
10    },  
11    {  
12      "productId": 56,  
13      "productName": "Wonderful product",  
14      "quantity": 3  
15    }  
16  ],  
17  "orderCompleted": true  
18 }
```

```
import json
```

YAML

```
---  
key: value  
map:  
  key1: "foo:bar"  
  key2: value2  
list:  
  - element1  
  - element2  
# This is a comment  
listOfMaps:  
  - key1: value1a  
    key2: value1b  
  - key1: value2a  
    key2: value2b  
---
```

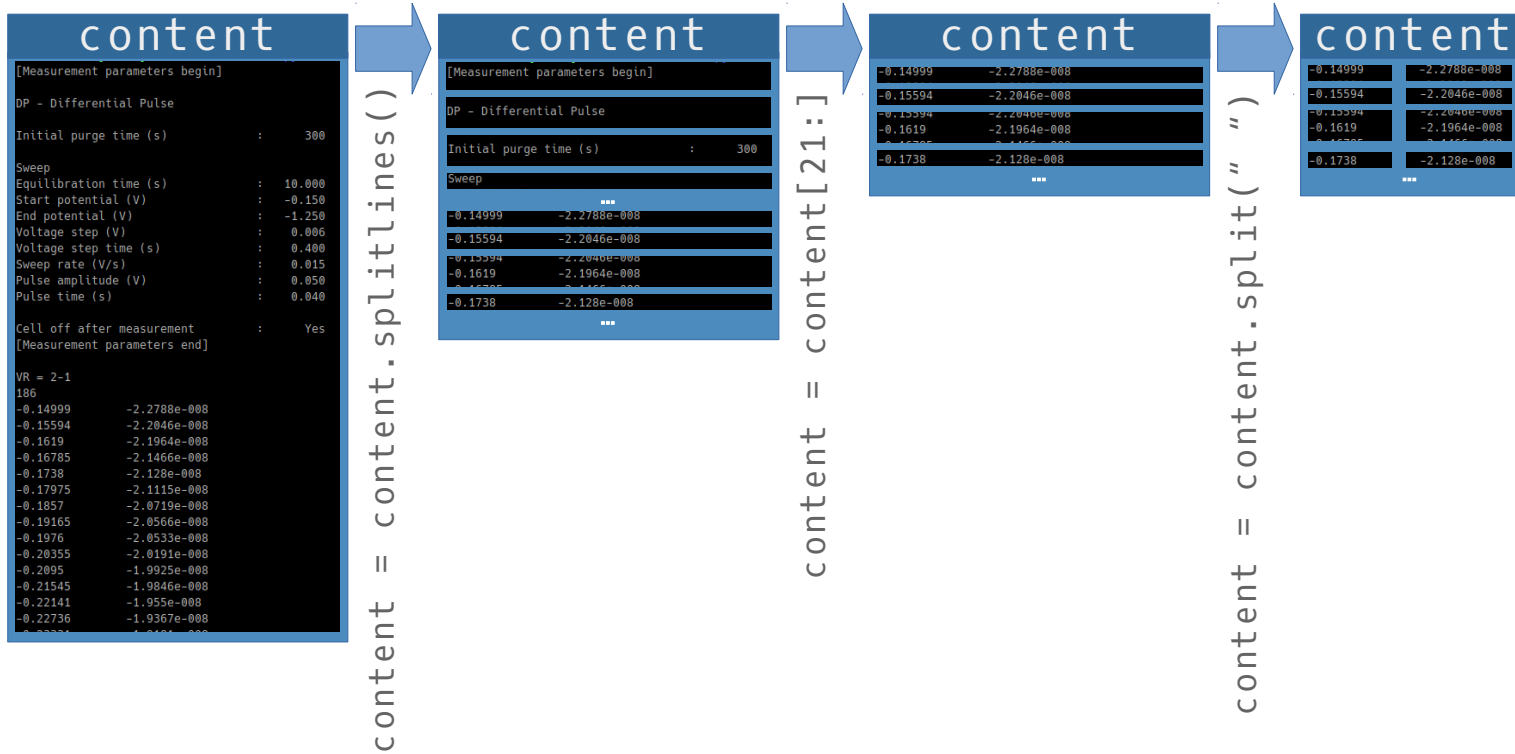
```
import yaml
```

TXT

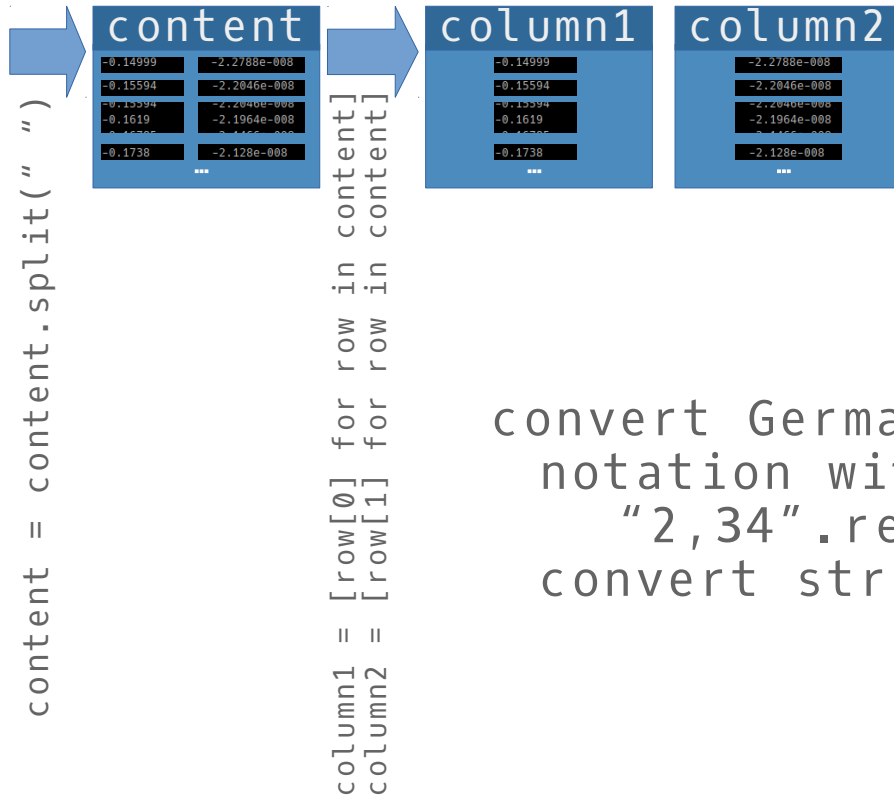
```
350, 0,250  
351, 0,260  
352, 0,291  
353, 0,284  
354, 0,299  
355, 0,290  
356, 0,265  
357, 0,274  
358, 0,278  
359, 0,261  
360, 0,294  
361, 0,312  
362, 0,279  
363, 0,264  
364, 0,272  
365, 0,285  
366, 0,291  
367, 0,262  
368, 0,265
```



Parsing Text



Parsing Text



convert German number notation to English notation with `string.replace(",", ".", ".")`
`"2,34".replace(",", ".", ".")` → `"2.34"`
convert string to numbers with `float()`



Exercise 7: Parsing Files

You should have a file named `measuredData.txt`.
Read the file and convert the data in it into an array.
Print the resulting array to the screen.

