NPRG065: Progamming in Python

Practicals 7

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Assignments

1. Create a program that converts 3-column CSV (below) into 4-column CSV
   - the fourth column will contain the result of the operation defined in the third column upon the operands in the first and second columns

```
568.230466925966;28.8792735700373;+
301.208470129689;877.943210287368;*
499.789999794327;778.952608132001;/
46.0484945634034;994.610536635629;-
```

Assignments

2. Create a program that accepts a record as command-line arguments and creates a corresponding JSON file
   - arguments include `--id`, `--firstname`, `--lastname`, `--age`
     - `--id` is mandatory, all others are optional
   - The file should be named <id>.json and should contain the fields id, firstName, lastName, age
   - If the file already exists, the program should end with an error unless `--force` is used
     - in that case, the program overwrites the file

Assignments

3. Create a program which reads a JSONL file with records as in the previous assignment (id, firstName, lastName, age) and creates a corresponding CSV file (with header)
   - the JSONL format has a full JSON document on each line – thus it contains multiple records, e.g.:

```
{"id": 1, "firstName": "A", "lastName": "B", "age": 20}
{"id": 2, "firstName": "C", "lastName": "D", "age": 22}
```

Assignments

4. Create a program that reads a file containing a list of emails and stores them in a yaml file
   - Program also prints out statistics – list of domains and the number of processed emails from each particular domain
   - Input file: Each line contains:
     - an email only – some@email.com or
     - an email in angle brackets – <jane.doe@email.org> or
     - a name and email in angle brackets – John Doe <john.doe@mail.net>
   - Output file:

```
people:
- name: N/A
  email: some@email.com
- name: John Doe
  email: john.doe@mail.net
- name: N/A
  email: jane.doe@email.org
```

ASSIGNMENTS

5. Create a simple shell for file manipulation
   - Shell is a program that offers a command-line, where the user can write commands
   - Supported commands:
     - `ls` – list the content of the current directory
     - `cd` – change the current directory
     - `pwd` – print out the name of the current directory
     - `cp <path> <new_path>` – copy a file to a new path
     - `rm <path>` – delete a file
     - `rmdir <path>` – delete a directory
     - . . . think of other commands