

suJSON

A Uniform JSON-based Subjective Data Format

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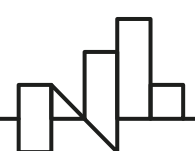
Reminder

Goals

- A uniform interface for subjective data exchange.
- Universal enough to describe all subjective tests.
- Should capture as much information as possible.
- No additional text files required.



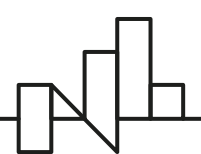
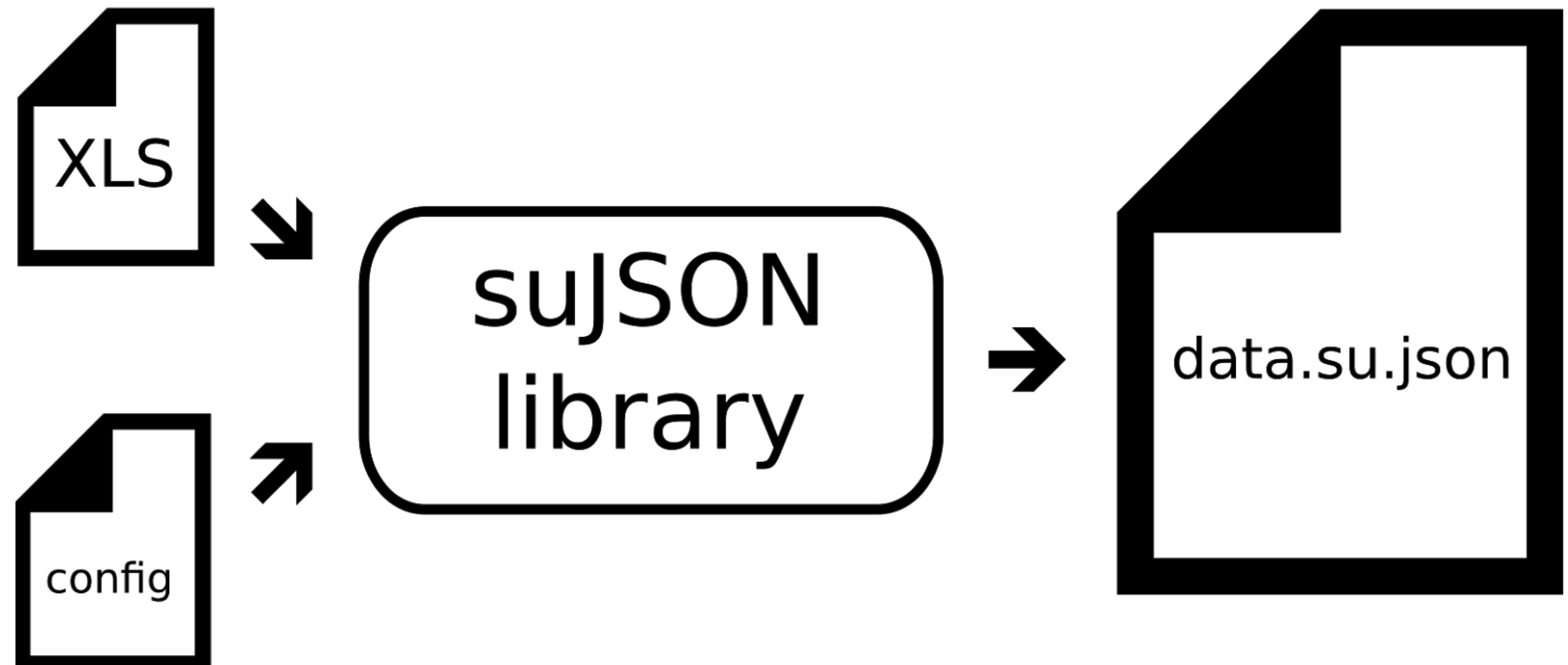
[https://github.com/LucjanJanowski/
translator-to-suJSON](https://github.com/LucjanJanowski/translator-to-suJSON)



Reminder cont.

Assumptions

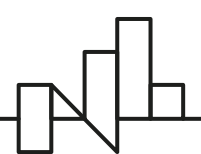
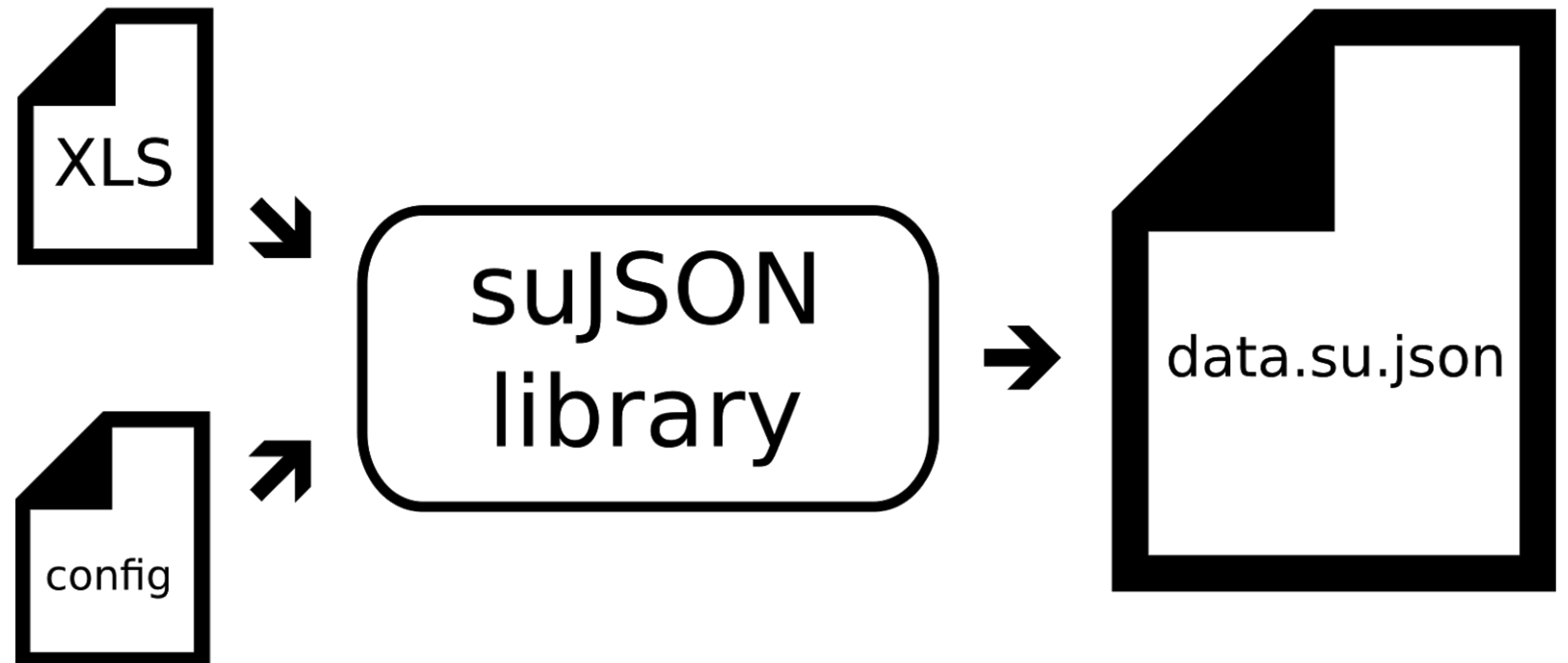
- We start from subjective tests for video
- We plan to address all types of subjective tests



Reminder cont.

Assumptions

```
$ python -m sujson ingest data.xls -c config.json -o su.json
```



What's New

- suJSON → tidy CSV (or Pandas DataFrame)
 - Facilitates data analysis.
 - Output format: pickle (Pandas DataFrame) or plain CSV file (Matlab, R, etc.).

```
1 {
2   "src": [...],
14  "subjects": [
15    {
16      "id": 1,
17      "characteristics": {"age": 29...}
24    },
25    {"id": 2...}
35  ],
36  "trials": [...],
72  "scores": [
73    {
74      "id": 1,
75      "question_id": 1,
76      "timestamp": "2018-11-19 17:32:04.812",
77      "score": 4,
78      "pvs_id": 1
79    },
80    {"id": 2...},
81    {"id": 3...}
```

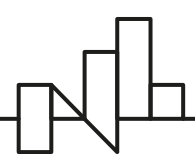
	stimulus_id	subject_id	trial_id	score	timestamp	session_num	order_num	src
0	1	1	1	4	2018-11-19 17:32:04.812	1	1	BigBuckBunny
1	2	1	1	3	2018-11-19 17:32:19.412	1	1	BigBuckBunny
2	3	1	1	1	2018-11-19 17:32:31.563	1	1	BigBuckBunny
3	3	2	2	4	2018-11-19 17:32:05.002	1	1	BigBuckBunny
4	1	2	2	3	2018-11-19 17:32:14.812	1	1	BigBuckBunny
5	2	2	2	0	2018-11-19 17:32:33.263	1	1	BigBuckBunny

What's New cont.

- A heuristic algorithm detecting whether the input is tidy.
 - Do you remember what *tidy* means?
 - One observation = one row.
 - Observation's characteristics expressed as subsequent columns.

Wickham, H. (2014). Tidy Data. *Journal of Statistical Software*, 59(10), 1--23.
<https://doi.org/10.18637/jss.v059.i10>

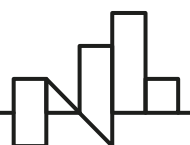
	B	C	D	E	F	G	H
1	stimulus_id	subject_id	trial_id	score	timestamp	session_num	order_num
2	1	1	1	4	19/11/2018 17:32	1	1
3	2	1	1	3	19/11/2018 17:32	1	1
4	3	1	1	1	19/11/2018 17:32	1	1
5	3	2	2	4	19/11/2018 17:32	1	1
6	1	2	2	3	19/11/2018 17:32	1	1
7	2	2	2	0	19/11/2018 17:32	1	1



What's New cont.

- Tutorial showing how to use the package.

```
18 # translating .xls file to suJSON
19 xls_file = str(Path('example', 'data', 'VQEG_HDTV_Final_Report_Data.xls'))
20 config = str(Path('example', 'config', 'config_for_hdtv.json'))
21 sujson_from_xls = str(Path('example', 'xls_output.json'))
22
23 command = 'python -m sujson ingest {} {} -o {}'.format(xls_file, config, sujson_from_xls)
24 proc = subprocess.Popen(command, stdin=PIPE, stderr=PIPE, text=True)
25 proc.communicate()
26
27
28 # translating .xls file to suJSON without output file - printing to console
29 command = 'python -m sujson ingest {} {}'.format(xls_file, config)
30 proc = subprocess.Popen(command, stdin=PIPE, stderr=PIPE, text=True)
31 proc.communicate()
32
```



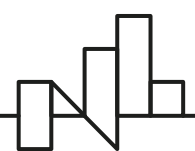
What's New cont.

- Tutorial showing how to use the package.
 - The first attempt at providing Python API!

!

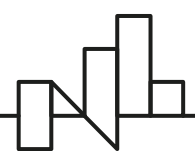


```
1 from sujson._sujson import Sujson
2 import subprocess
3 from subprocess import PIPE
4 from pathlib import Path
5
6 sujson = Sujson()
7 sujson_file = str(Path('example', 'hdtv5.json'))
8 sujson._read_sujson(sujson_file)
9 df = sujson.pandas_export()
10 print(df)
11
12 # mean
13 print(df.groupby('stimulus_id')['score'].mean())
14 # standard deviation
15 print(df.groupby('stimulus_id')['score'].std())
16
```



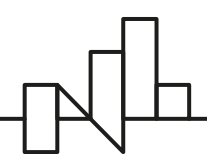
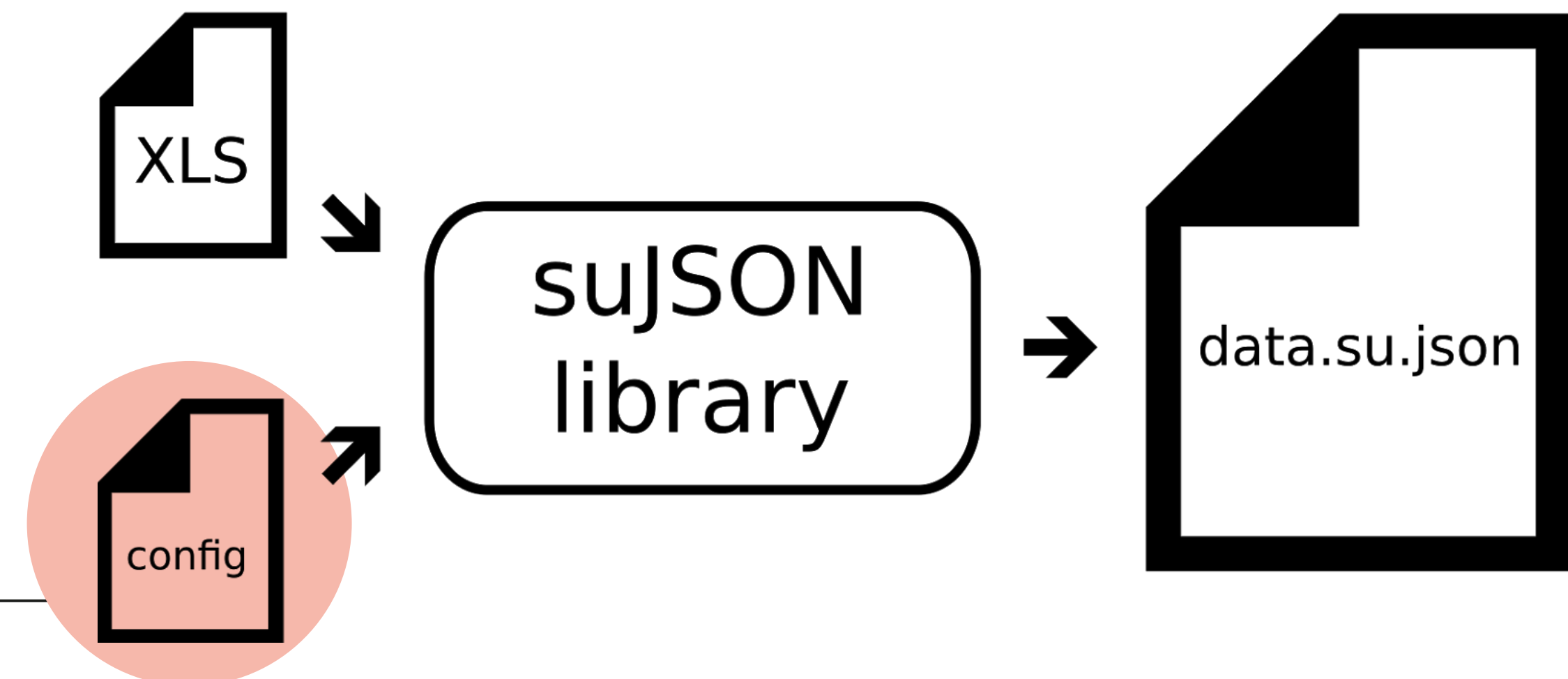
What's New cont.

- Reading CSV files.
 - So far tested only on tidy CSV files.
 - Outputs a suJSON file.
- Unit tests added.
 - Things are getting serious. 😊



Roadmap

- Configuration files creator.
 - Most probably in a form of a web GUI.
- Python API
 - So that you can use this package from inside of your subjective testing software.
- Adding support for more sophisticated experiment designs.

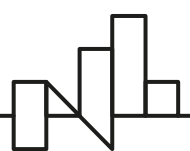


Timeline

- This project exists thanks to the support of BSc and MSc students.
- I do not expect major updates earlier than next winter VQEG F2F meeting.



<https://github.com/LucjanJanowski/translator-to-suJSON>





Thank you!

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