Problem 1 (Relation Extraction).

In this lab, we are working on relation extraction. We provide an input file, `input.tsv`, which includes entities and their Wikipedia abstracts. From the abstracts, extract following properties for each entity:

- Date of Birth
- Nationality
- Alma Mater
- Awards
- Places of Work

In this exercise, we focus on using pattern-based extraction. You can use any tool to pre-process the data, like POS tagging, entity recognition, etc. Optional: You can use any other resources to improve your patterns, like dictionaries of relational paraphrases (e.g. RELLY or POLY[1]). You may also use pretrained word embeddings like word2vec or BERT. However, you are not allowed to look up relations in existing KBs like DBpedia, Wikidata, etc.

To evaluate the results, we provide ground truth data, `groundtruth.tsv`, and code to evaluate the results, `evaluate.py`. The ground truth has following format:

```
entity [tab] dateOfBirth [tab] nationality [tab] almaMater [tab] awards [tab] workPlaces
```

For properties that take multiple values, each value is separated by `", "`. For properties which have no value, an empty list is stored `[]`.

Your program, called `run.py`, takes `input.tsv` as the input and returns the output in a file (e.g. `results.tsv` that has the same format as the ground truth file.

Similarly to the entity typing lab, you can run and evaluate your program by using:

```
python run.py input.tsv results.tsv
python evaluate.py results.tsv groundtruth.tsv
```

or `./run_evaluate.sh input.tsv results.tsv groundtruth.tsv`

Your submitted files must include all necessary code and files, especially the main program file `run.py`. If you used any external libraries, please indicate them in a README file.

Please submit all necessary files, which are compressed into a zip file named:
Lab06_MatriculationNumber_Name.zip
to the email address: **cxchu@mpi-inf.mpg.de** with title of the email: **[IE]Lab06_MatriculationNumber_Name**

Deadline: 23:59 30.11.2019 (Saturday)

[1] https://www.mpi-inf.mpg.de/departments/databases-and-information-systems/research/yago-naga/patty/