WIKI BY PLACE

Extracting Wikipedia entries in a specific area

Introduction

This project was done in the TDK - Technion Data & Knowledge Lab of the CS faculty.

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This presentation purpose is to described and explain the implementation of the project.

In order to understand the project purpose, it’s will be useful to read the README file – until “Getting Started”.

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Data resources

1. **dbpedia-hebrew.**

This is a former project in the TDK.

URL :https://github.com/TechnionTDK/dbpedia-Hebrew

This former project is used to extract 2 json files out of Wikipedia dump files, containing all entries in Wikipedia Hebrew with the following data:

"label" - headline of the Wikipedia page.

"url" - url of the Wikipedia page.

"abstract" - this name is taken from Wikipedia dump files and contain the same data. This data is based on the information in the Wikipedia page. Some labels have no abstract.

As a preparation to my project, I fixed the abstract this project was generating. Then I extract the 2 files to directory named "input".

Data resources

2. **MediaWiki API**

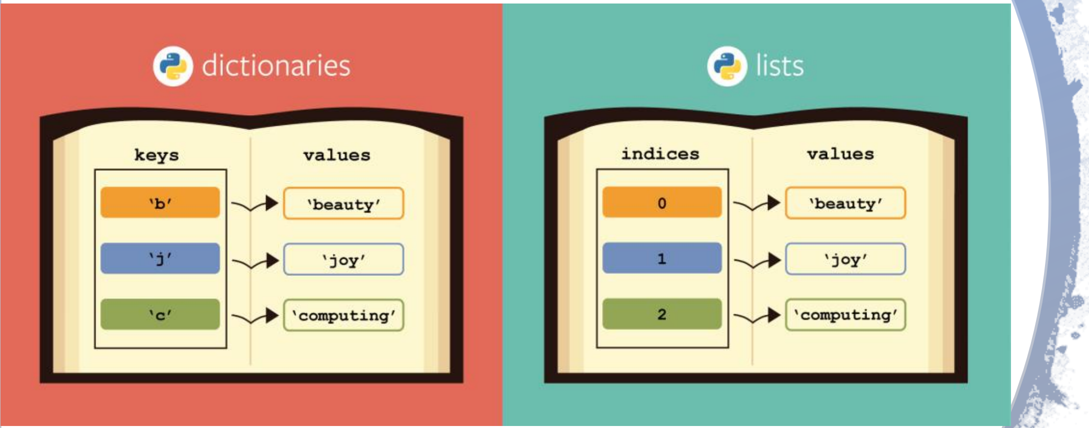
This is an API by Wikipedia.

URL: https://he.wikipedia.org/w/api.php

This API has a lot of uses, the following one is used in this project:

```
For a given Wikipedia page label:
        If the page has no location:
                return the page has no location.
        Else:
                return the location.
```

Notice: not all pages on Wikipedia has location.



Elastic_builder.py

Class dataLoad:

This class is extracting the data from the 2 files in "input" directory (slide 4).

The data is saved in dataLoad's members as public data.

allLabels = [] (list)
labelsToUrls = {} (dict)
urlsToAbstract = {} (dict)

The data is saved this way for complexity reasons of the full script:

The relevant labels would be united after finding their coordinates.

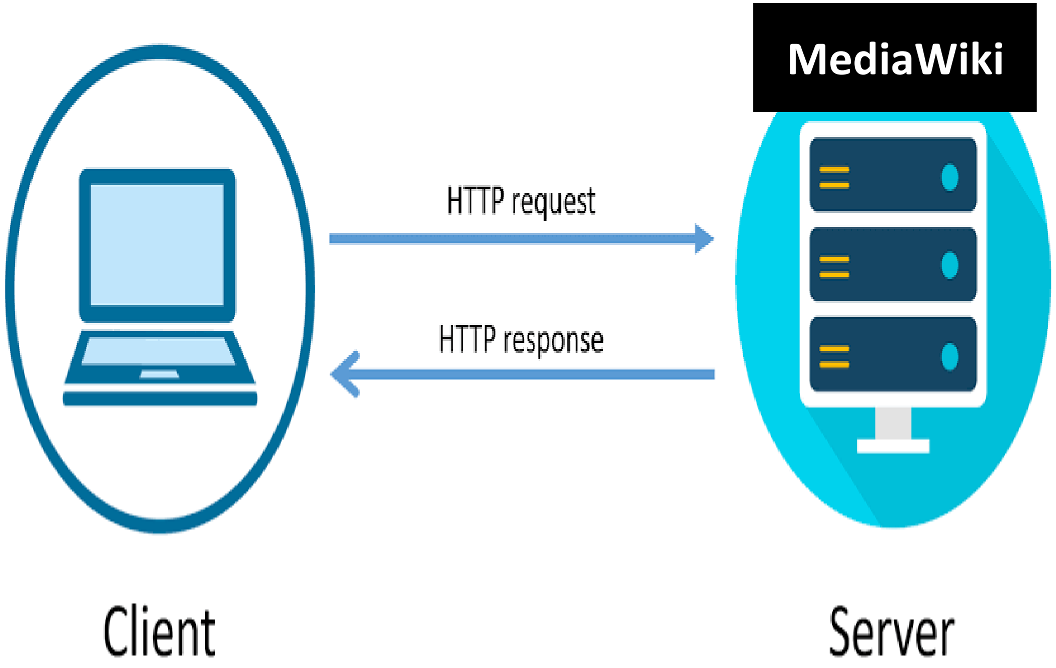
Elastic_builder.py

saveWithCoordinates - method.

Input: one parameter from type dataLoad.

Algorithm:

```
Result = []
For every label at allLabels :
    If label has coordinates (using MediaWiki API):
        Result.append(doc{label})
Return Result
```



doc{label}:
Label
Coordinates
url
Abstract

Elastic_builder.py

elasticBuilder - method.

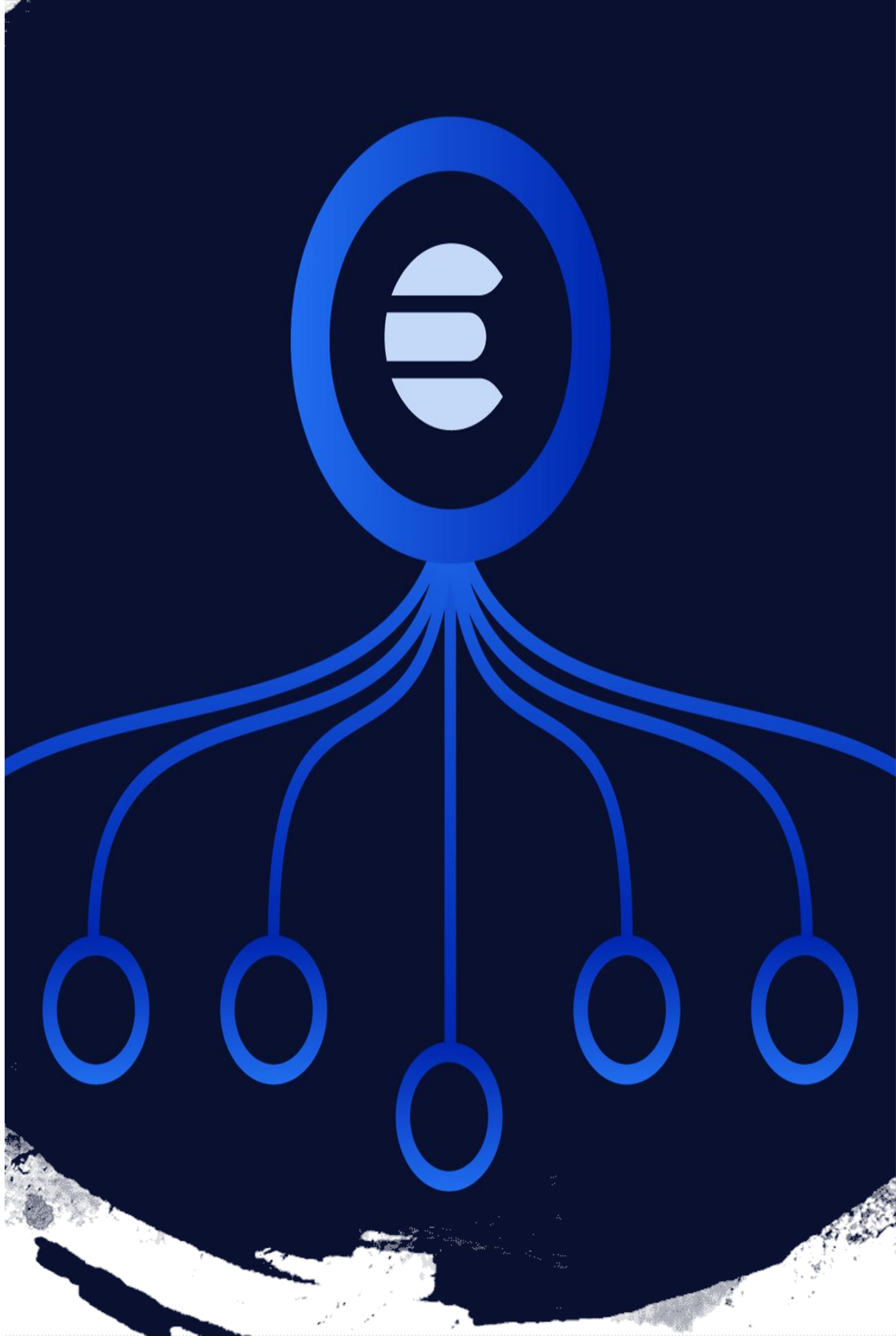
Input: one parameter from type list. Assuming list’s items has coordinates and coordinates are saved in a specific way.

Algorithm:

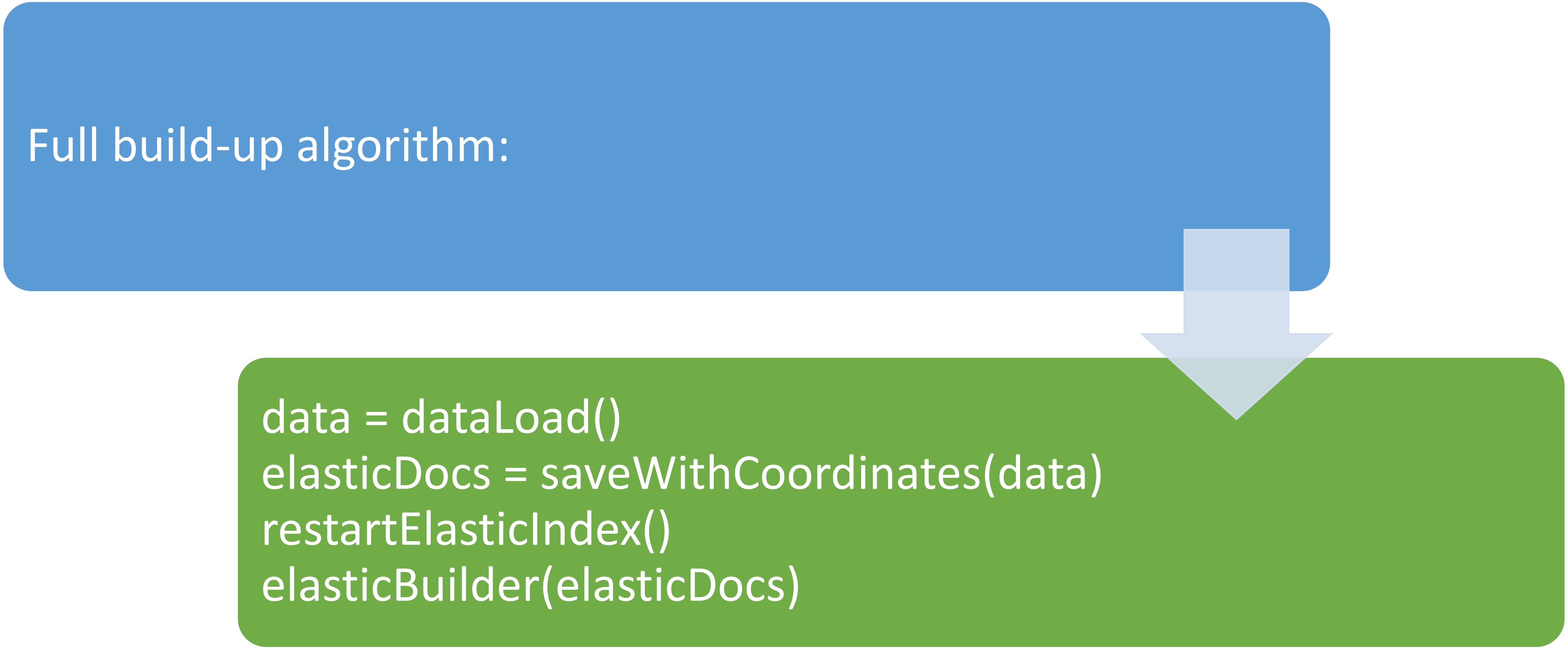
Init elasticsearch engine.

Insert all list’s items to the engine.

restartElasticIndex() is another method that is used to delete the engine in case it’s not the first build.

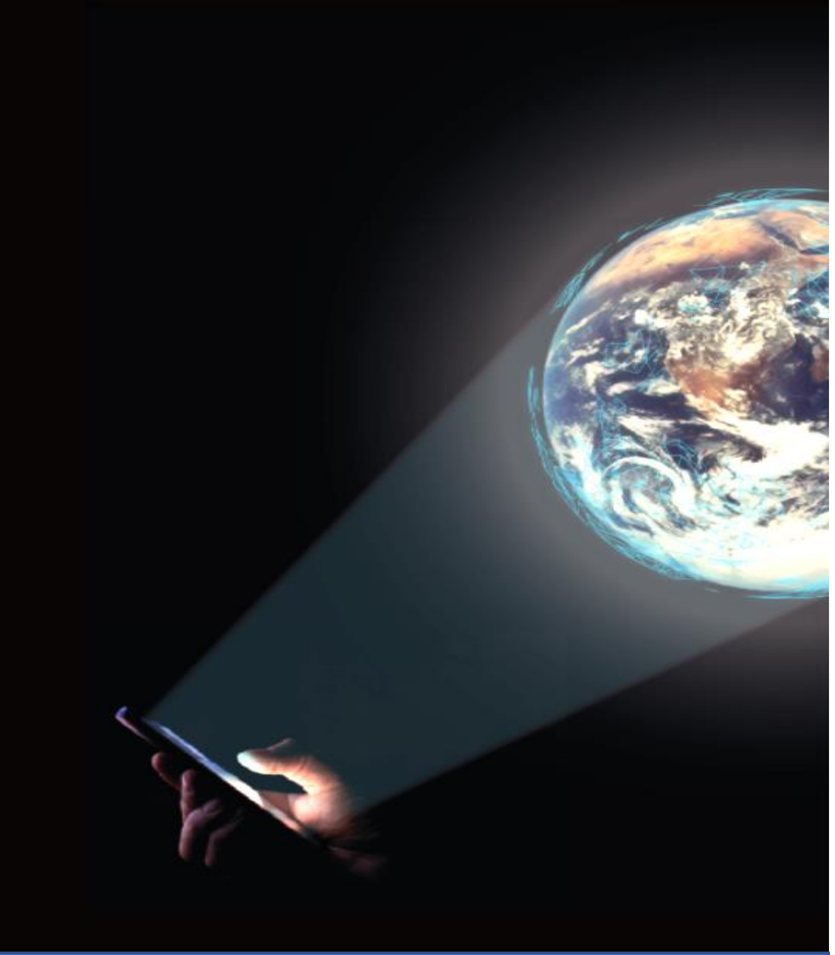


Elastic_builder.py



Full build-up algorithm:

```
data = dataLoad()
elasticDocs = saveWithCoordinates(data)
restartElasticIndex()
elasticBuilder(elasticDocs)
```



search.py

This file is used for the implementation of one method:

search - method.

Input: one parameter from type list.

Assuming list’s items are the following strings:

1. radius - number and its unit [mm, cm, m, km...].

2. Latitude – number. 3. Longitude – number.

Algorithm:

Call the built engine to get doc{label} of all labels in the defined area.

For every label – add the distance from the input.

Return all this data as list of dicts.

doc{label}:

Label

Coordinates

url

Abstract

server.py

This file is a wrapper between the user and the method ‘search’.

It’s using flask to create http request.

Its input is:

location - latitude and longitude ("lat,lon").

radius - number and its unit [mm, cm, m, km…] ("radius").

Algorithm:

Extract the input to the format search is expecting (detailed in the previous slide).

Call ‘search’.

Return ‘search’ result as a json.