WikiTranslator

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Vyhľadávanie informácií
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STU FIIT

SLOVENSKÁ TECHNICKÁ
UNIVERZITA V BRATISLAVE
FAKULTA INFORMATIKY
A INFORMAČNÝCH TECHNOLÓGIÍ

WikiTranslator

- Slovník spájajúci jazyky s možnosťou vyhľadávania
- Paralelné texty SK-CS-HU
- Cross-language Information Retrieval

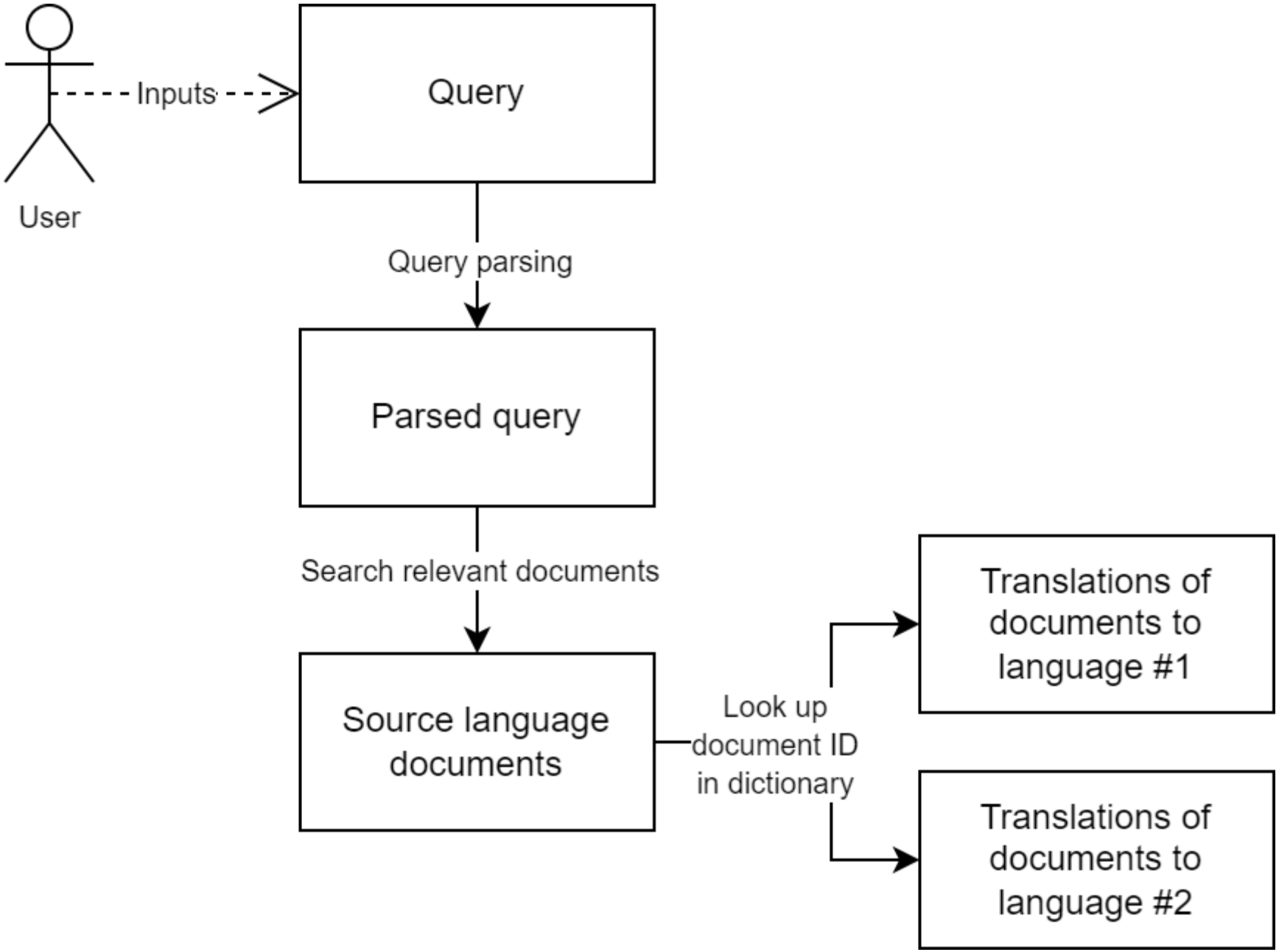
- Java 17 + Maven
- Apache Spark – distribuované spracovanie pomocou Datasetov
- Apache Lucene – indexovanie a vyhľadávanie

Postup

1. Stiahnutie Wikipedia XML dumpov
2. Využitie nástroja WikiExtractor v Dockeri => JSON články
3. Vyhľadanie SK-CS a SK-HU párov ID článkov z SQL DB
4. Vytvorenie prieniku SK-CS-HU ID pomocou Apache Spark
5. Vyhľadanie článkov v JSON súboroch podľa ID v SK-CS-HU prieniku pomocou Apache Spark
6. Uloženie z nich vytvorených dokumentov (id, title, text) pomocou Apache Spark
7. Indexovanie pomocou Apache Lucene
8. Vytvorenie mapovania pre všetky jazyky:

   ```
   { „lang_id“: [ „translation_1_id“, „translation_2_id“ ], ... }
   ```

9. Vyhľadávanie


User
Inputs
Query
Query parsing
Parsed query
Search relevant documents
Source language documents
Look up document ID in dictionary
Translations of documents to language #1
Translations of documents to language #2

Používateľské rozhranie

1. exit
2. find article ID pairs
3. create sk-cs-hu ID conjunction with Spark
4. create docs with Spark
5. create Lucene index
6. create ID mapping
7. use translation search (type 'exit' for quitting search mode)

Apache Spark

```
spark-class org.apache.spark.deploy.master.Master --host localhost
```

```
spark-class org.apache.spark.deploy.worker.Worker
spark://localhost:7077 --cores 4 --memory 1G
```

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spark://localhost:7077 --cores 4 --memory 1G
```

- GUI na `localhost:8080`

Spark Master at spark://localhost:7077

3.3.1

URL: spark://localhost:7077
Alive Workers: 2
Cores in use: 8 Total, 8 Used
Memory in use: 2.0 GiB Total, 2.0 GiB Used
Resources in use:
Applications: 1 Running, 0 Completed
Drivers: 0 Running, 0 Completed
Status: ALIVE

Workers (2)

Worker Id	Address	State	Cores	Memory	Resources
worker-20221117150325-192.168.1.109-56953	192.168.1.109:56953	ALIVE	4 (4 Used)	1024.0 MiB (1024.0 MiB Used)	
worker-20221117150338-192.168.1.109-56969	192.168.1.109:56969	ALIVE	4 (4 Used)	1024.0 MiB (1024.0 MiB Used)	

Running Applications (1)

Application ID	Name	Cores	Memory per Executor	Resources Per Executor	Submitted Time	User	State	Duration
app-20221117151557-0000 (kill)	WikiTranslator	8	1024.0 MiB		2022/11/17 15:15:57	Viktor	RUNNING	2 s

Completed Applications (0)

Application ID	Name	Cores	Memory per Executor	Resources Per Executor	Submitted Time	User	State	Duration

Application: WikiTranslator

ID: app-20221117151557-0000
Name: WikiTranslator
User: Viktor
Cores: Unlimited (8 granted)
Executor Limit: Unlimited (2 granted)
Executor Memory: 1024.0 MiB
Executor Resources:
Submit Date: 2022/11/17 15:15:57
State: RUNNING
Application Detail UI

Executor Summary (2)

ExecutorID	Worker	Cores	Memory	Resources	State	Logs
1	worker-20221117150325-192.168.1.109-56953	4	1024		RUNNING	stdout stderr
0	worker-20221117150338-192.168.1.109-56969	4	1024		RUNNING	stdout stderr

sk:T&t:covid test

ID Language Title

667655 SK Rýchly antigénový test COVID-19

1688511 CS Rychlý antigenní test na covid-19

1773397 HU Covid19-antigén gyorsteszt

667137 SK Rýchly antigénový test

1688600 CS Rychlý antigenní test

1774498 HU Antigén gyorsteszt

645499 SK COVID-19

1564791 CS Covid-19

1683177 HU Covid19

102017 SK Test

242872 CS Testování

11604 HU Test (egyértelműsítő lap)

646838 SK Pandémia ochorenia COVID-19

1559185 CS Pandemie covidu-19

1679312 HU Covid19-pandémia

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905 SK Turingov test

4218 CS Turingův test

182823 HU Turing-teszt

444545 SK Kolmogorovov-Smirnovov test

324710 CS Kolmogorovův?Smirnovův test

979361 HU Kolmogorov?Szmirnov-próba

339758 SK Klasická teória testov

913998 CS Klasická testová teorie

493883 HU Klasszikus tesztelmélet

652542 SK Vakcína proti chorobe COVID-19

1651518 CS Vakcína proti covidu-19

1689580 HU Covid19-vakcina

526502 SK Crash Test Dummies

694195 CS Crash Test Dummies

1830033 HU Crash Test Dummies
