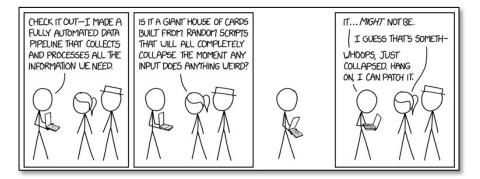


Goal

XKCD provides regularly comics:

- https://xkcd.com/
- JSON API: https://xkcd.com/2054/info.0.json



https://xkcd.com/2054/

```
{
    "month": "10",
    "num": 2054,
    "link": "",
    "year": "2018",
    "news": "",
    "safe_title": "Data Pipeline",
    "transcript": "",
    "alt": "\"Is the pipeline literally running from your laptop?\" \"Don't b
    e silly, my laptop disconnects far too often to host a service we rel
    y on. It's running on my phone.\"", "img": "https://imgs.xkcd.com/comi
    cs/data_pipeline.png",
    "title": "Data Pipeline",
    "day": "3"
}
```

2054.json

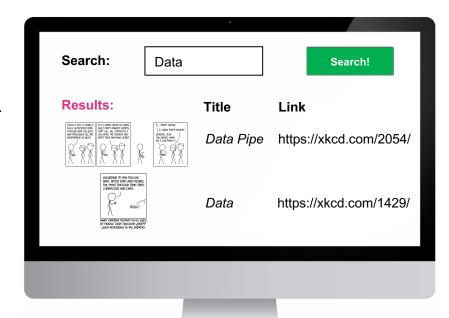


Goal

We want to make use of this data to build a searchable database for XKCD comics.

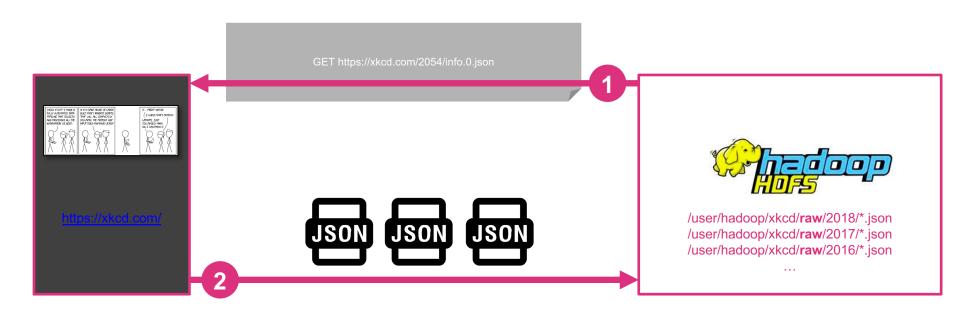
Workflow:

- Gather data from xkcd.com
- Save raw data (JSON files) to HDFS (partitioned by year, e.g. 2018, 2017, 2016...)
- Optimize, reduce and clean raw data and save it to final directory on HDFS
- Export xkcd data to end-user database (e.g. MySQL, MongoDB...)
- Provide a simple **HTML Frontend** which is able to:
 - read from end-user database
 - process user input (search phrase...)
 - checks against xkcd data in enduser database
 - Display result (comics containing search phrase)
- The whole data workflow must be implemented within an ETL workflow tool (e.g. Pentaho Data Integration or Airflow) and run automatically





Dataflow: 1. Get XKCD Data



Dataflow: 2. Raw To Final Transfer

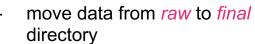


/user/hadoop/xkcd/**raw**/*.csv









- optimize and reduce data structure for later query purposes if necessary
- remove duplicates if necessary
- ...



/user/hadoop/xkcd/**final**/*



Dataflow: 3. Enhance Data And Save Results





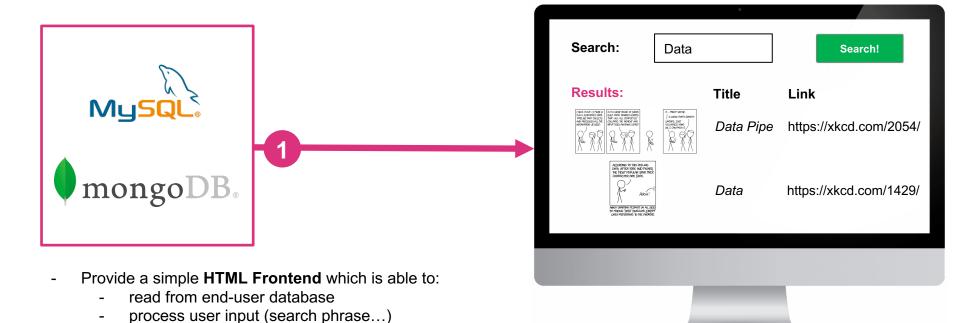
- enhance data (e.g. for later querying)
- use *Hive*, *Spark* or *PySpark*
- save everything to a enduser database (e.g. MySQL, MongoDB)







Dataflow: 4. Provide Simple Web Interface





user database

checks against xkcd data in end-

Display result (comics containing search phrase)