JabRef CLI

Software Composition Seminar Project

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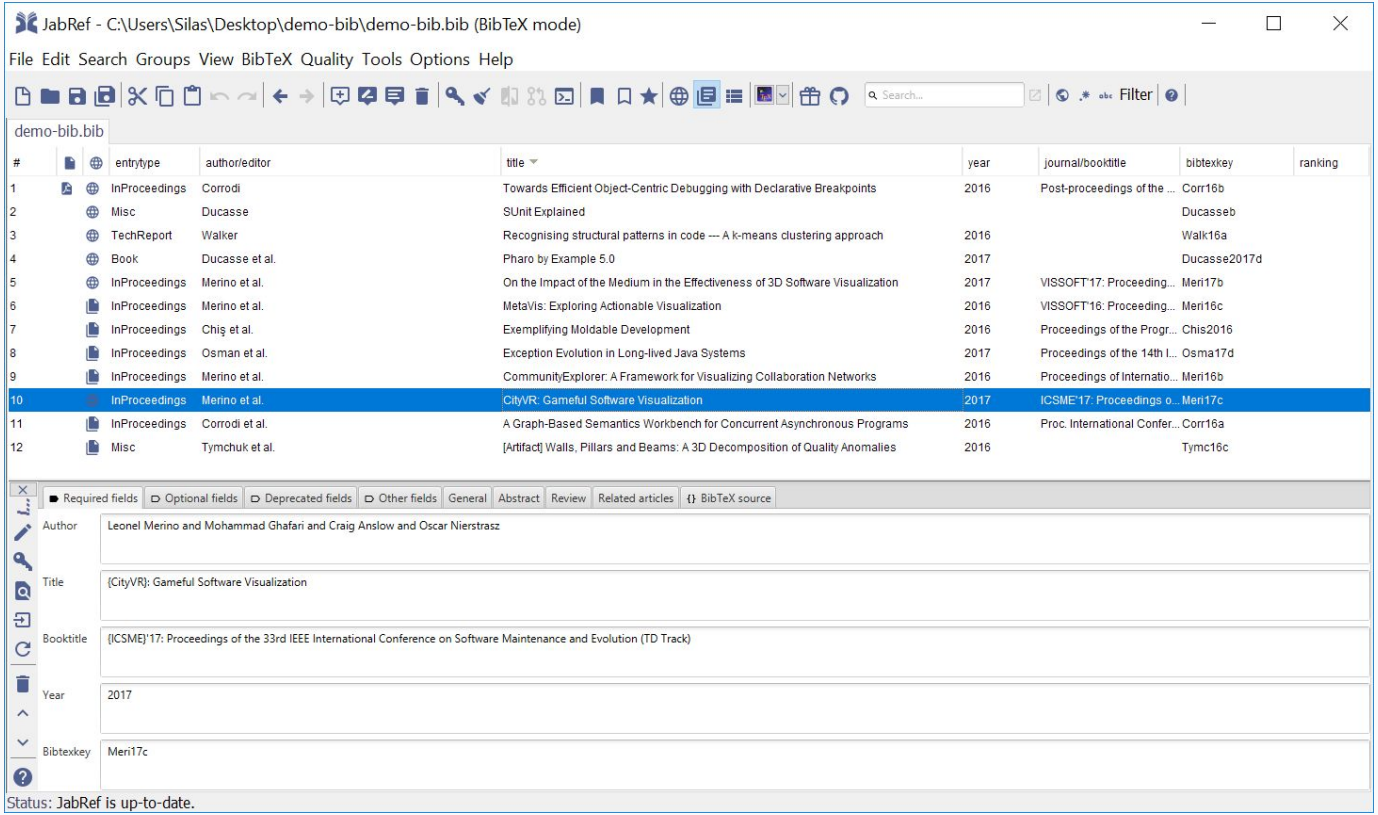
The Goal

Implement a CLI for JabRef

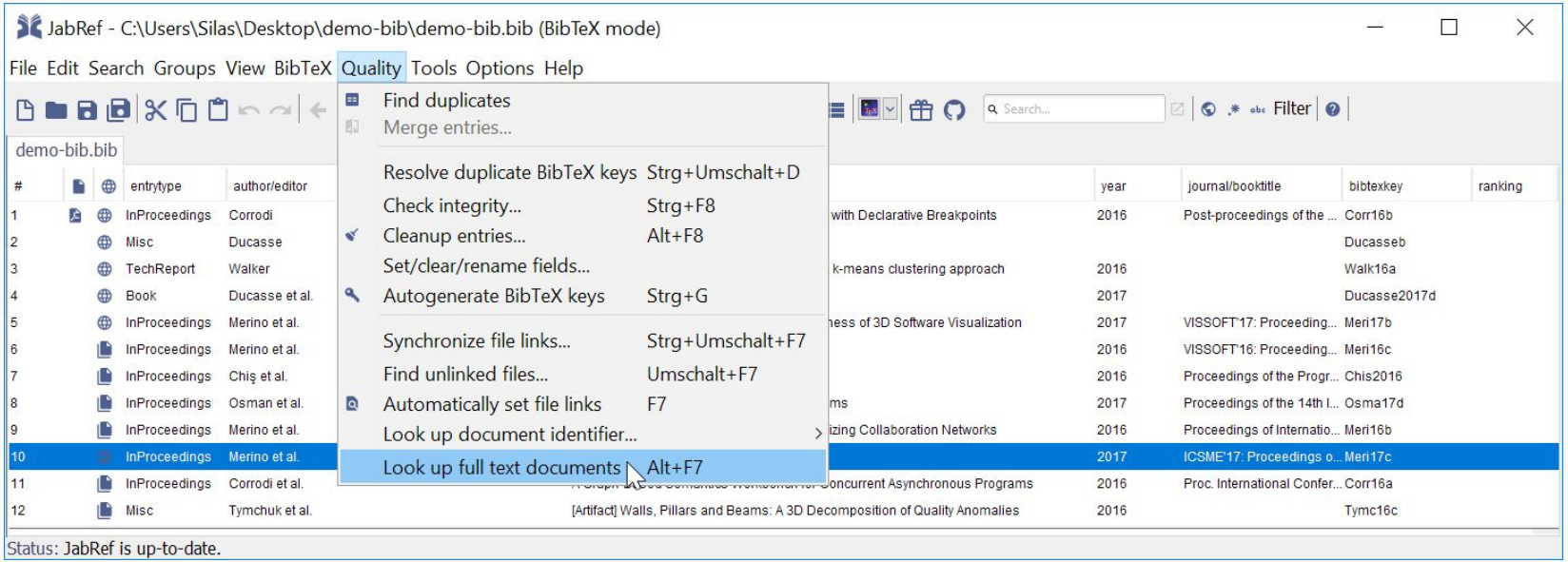
What is JabRef?

- Reference manager for BibTeX libraries
- Full-text downloader for bib entries
- Open source, on GitHub
- Written in Java

What is JabRef?



Looking Up Full Text Documents



JabRef Uses Plain Text BibTeX Files

demo-bib.bib - Editor

Datei Bearbeiten Format Ansicht ?

```
% Encoding: UTF-8

@InProceedings{Meri17a,
  author    = {L. Merino and M. Ghafari and C. Anslow and O. Nierstrasz},
  title     = {CityVR: Gameful Software Visualization},
  booktitle = {2017 IEEE International Conference on Software Maintenance and Evolution (ICSME)},
  year      = {2017},
  month     = {Sept},
  pages     = {633-637},
  doi       = {10.1109/ICSME.2017.70},
  file      = {Meri17a-CityVR__Gameful_Software_Visualization.pdf},
  keywords  = {Games;Software;Software engineering;Tools;Urban areas;Visualization;3D visualization},
}

@Comment{jabref-meta: databaseType:biblatex;}
```

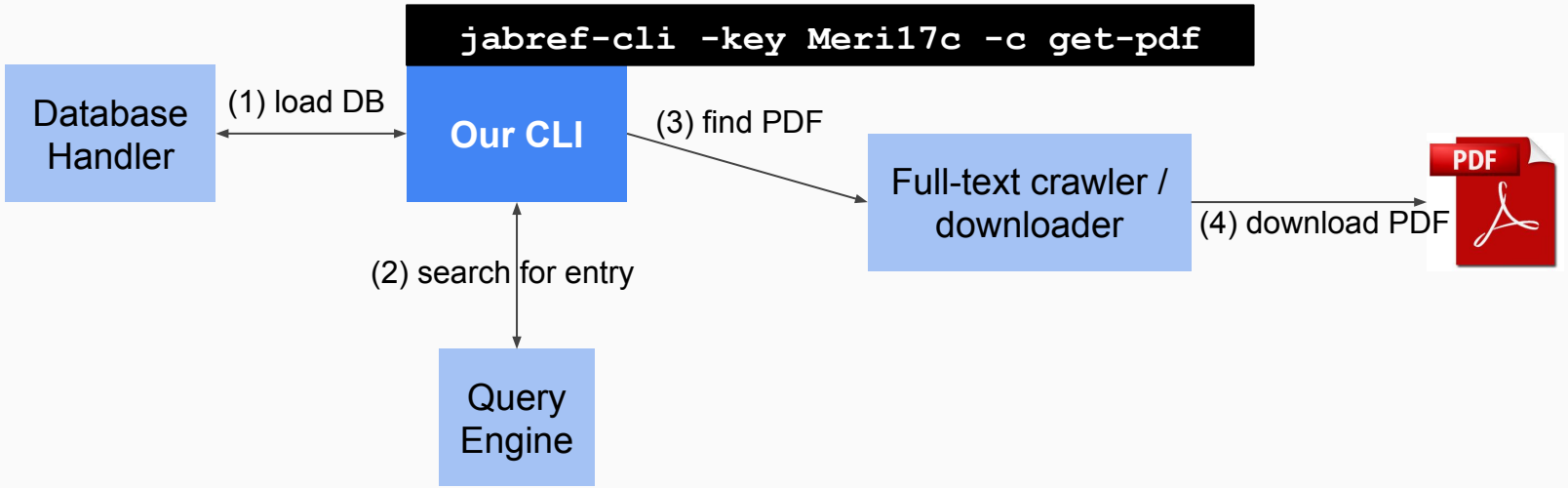
Why do we want a CLI?

- GUI is not intuitive and has screen scaling issues
- CLI is scriptable
- CLI can be much faster to work with

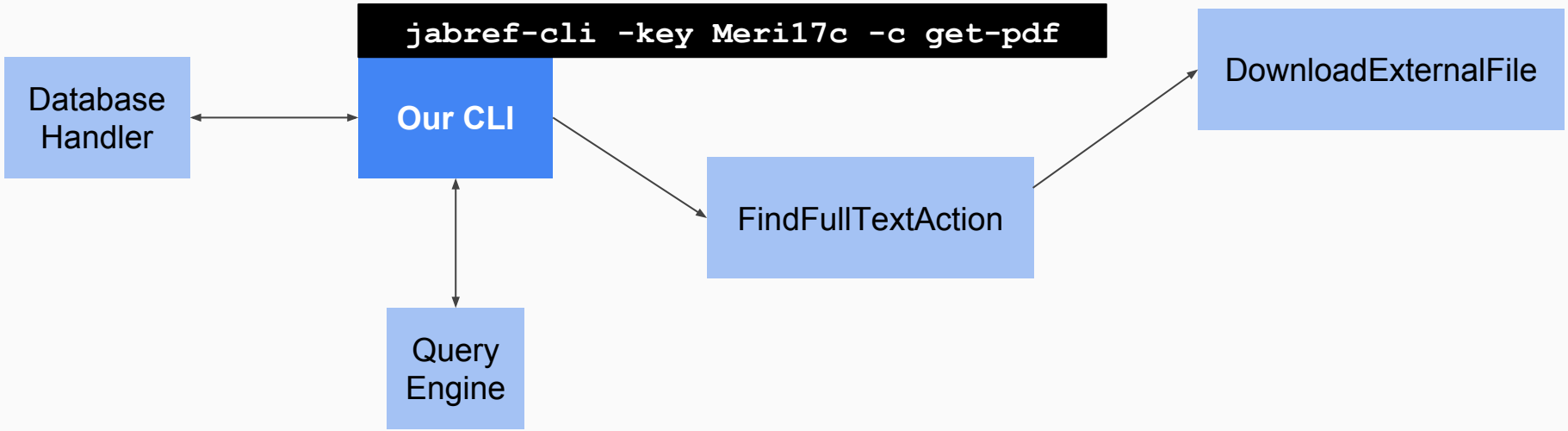
Our Approach

1. Fork project on GitHub
2. Define a command line interface
3. Implement command line parser
4. Wire up CLI to existing logic
    - Load library
    - Find BibTeX entry
    - Find PDF source
    - Download PDF
    - Format entry, add file reference
    - Save changes to BibTeX database

Expected Architecture



How it actually was...



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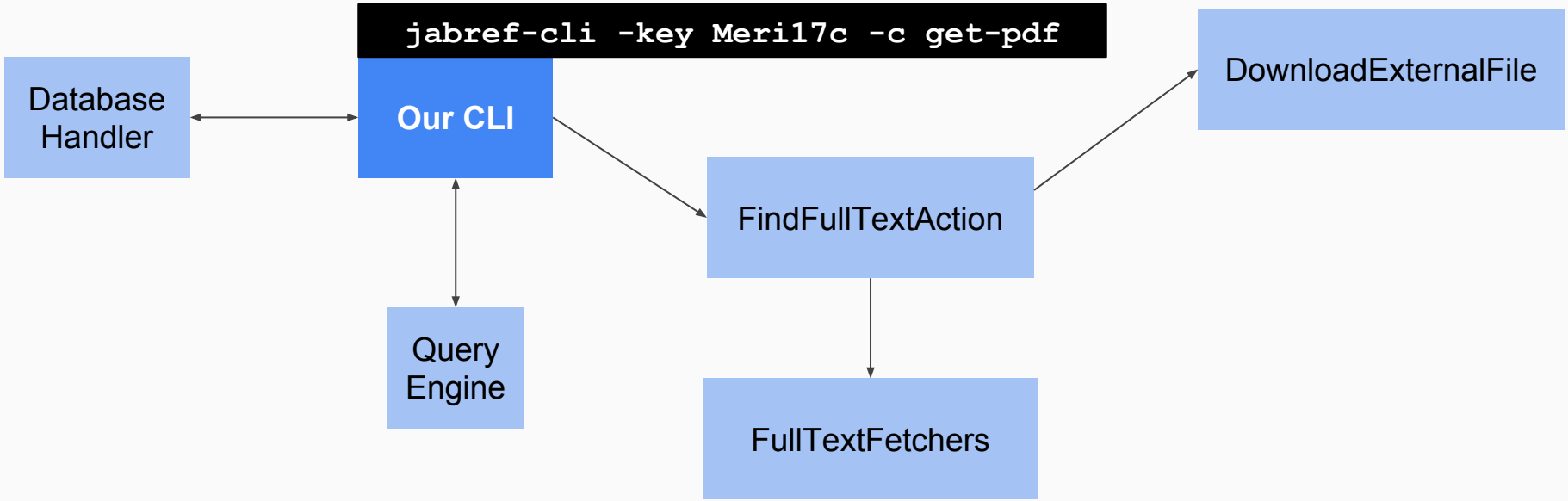

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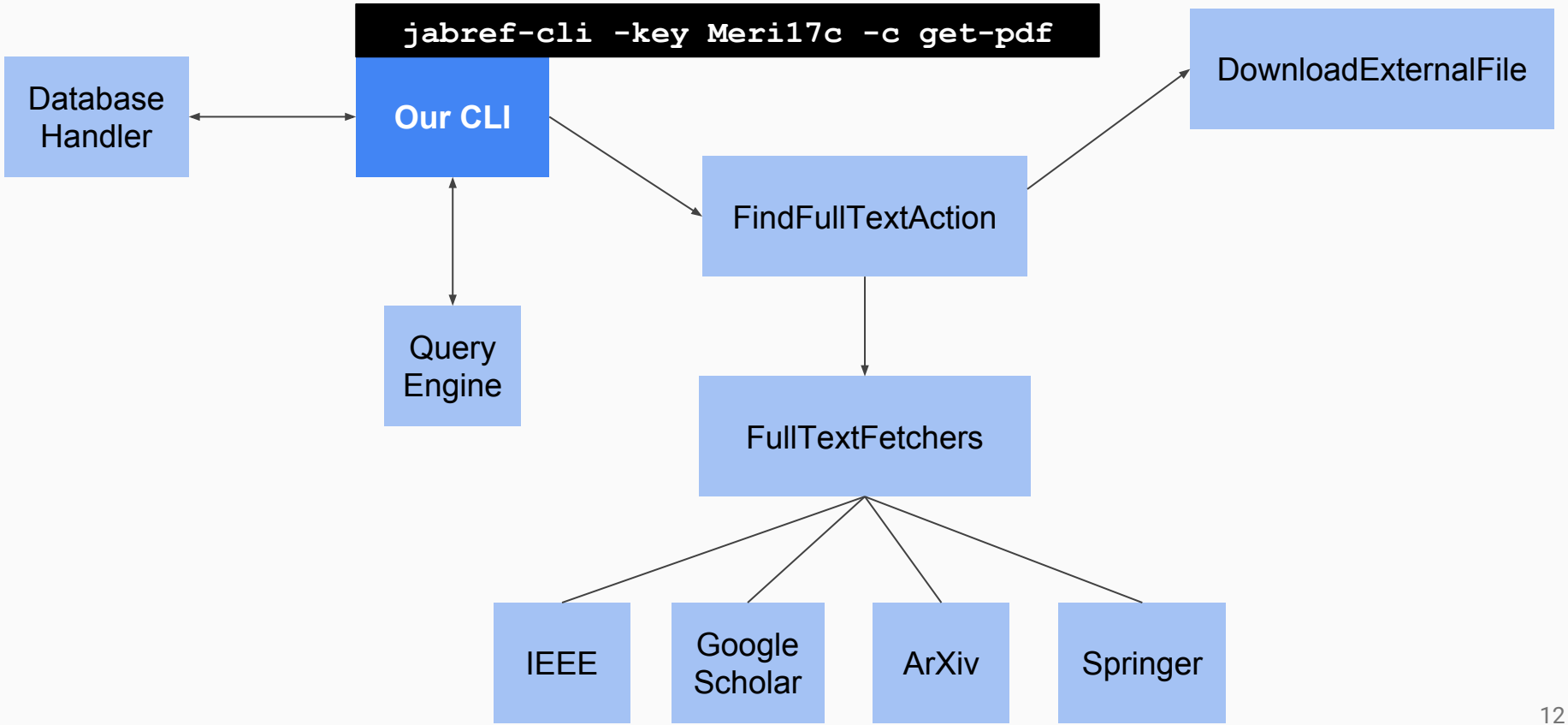

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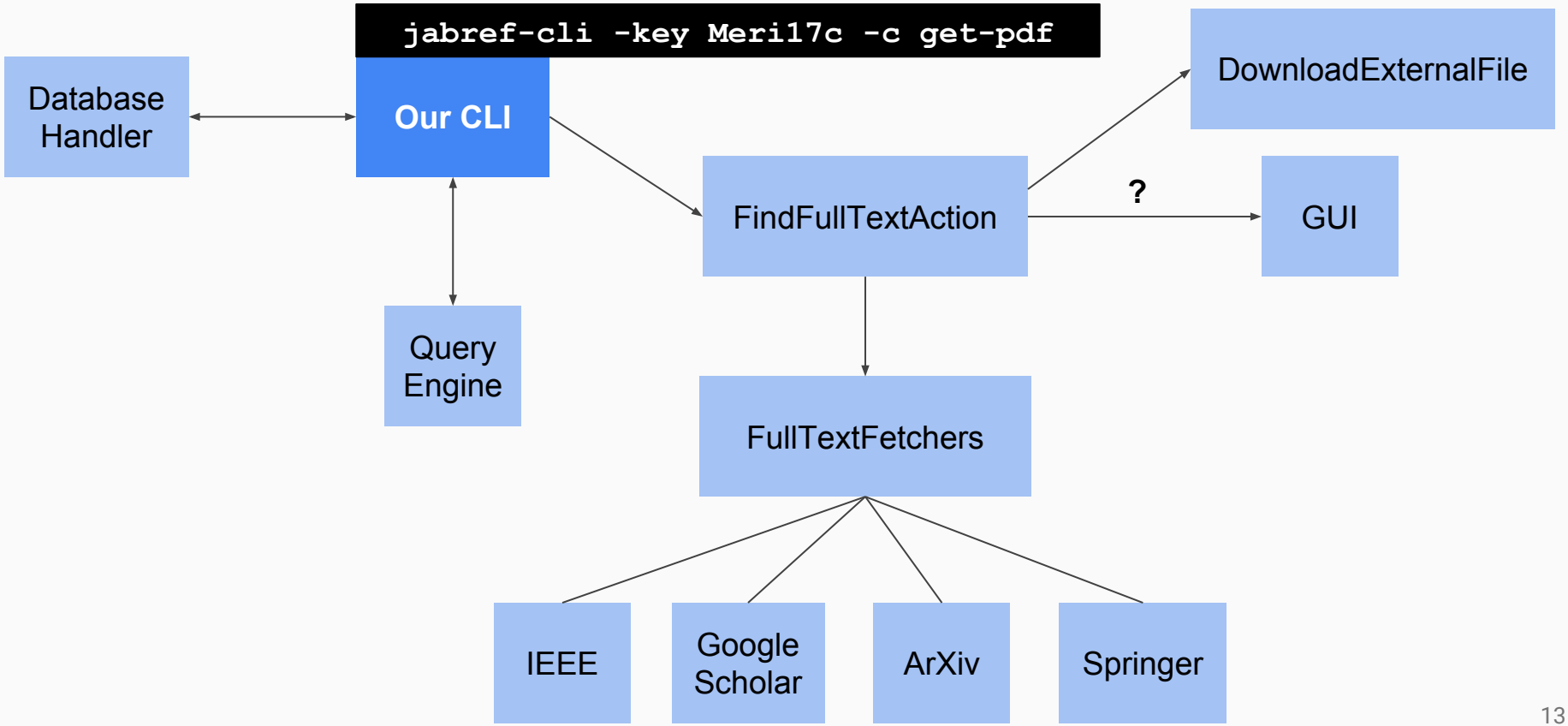

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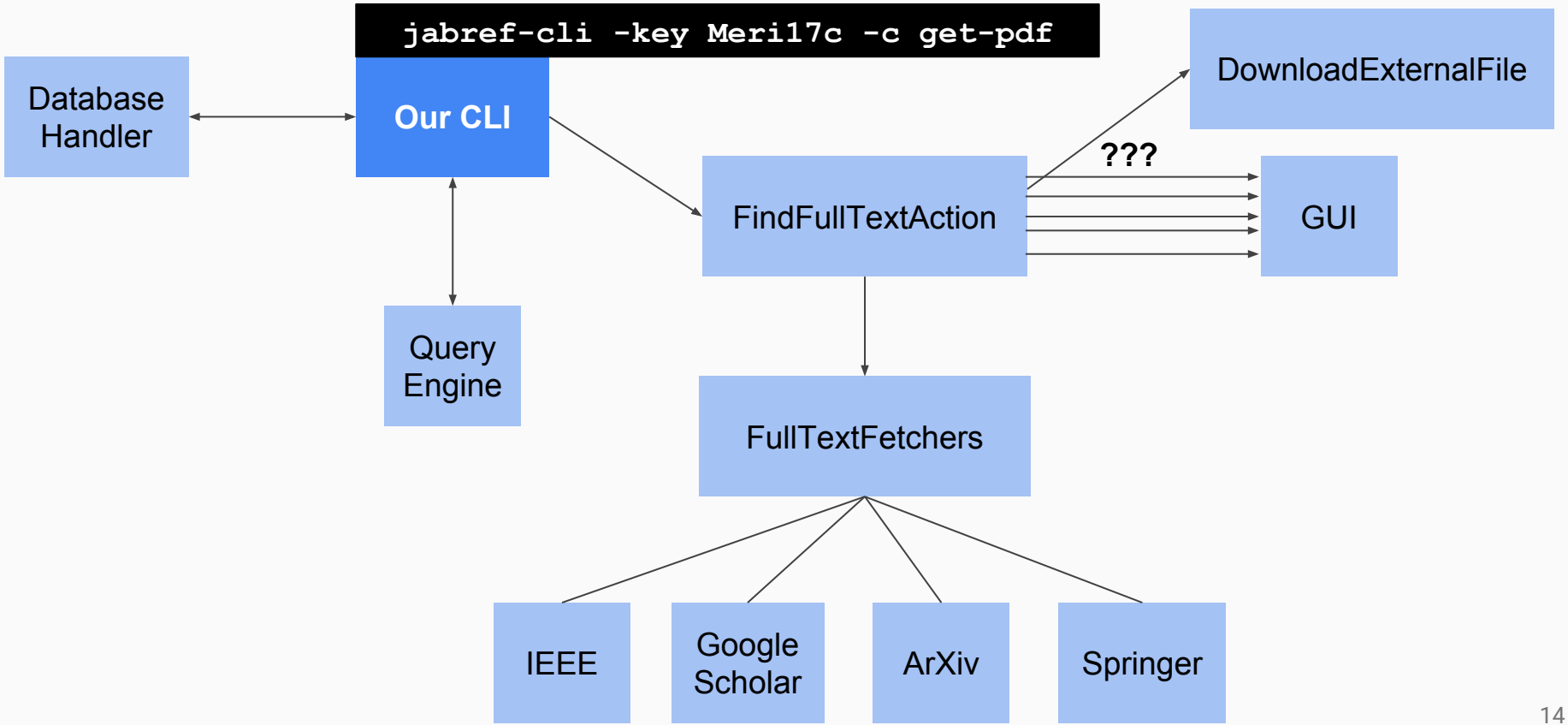

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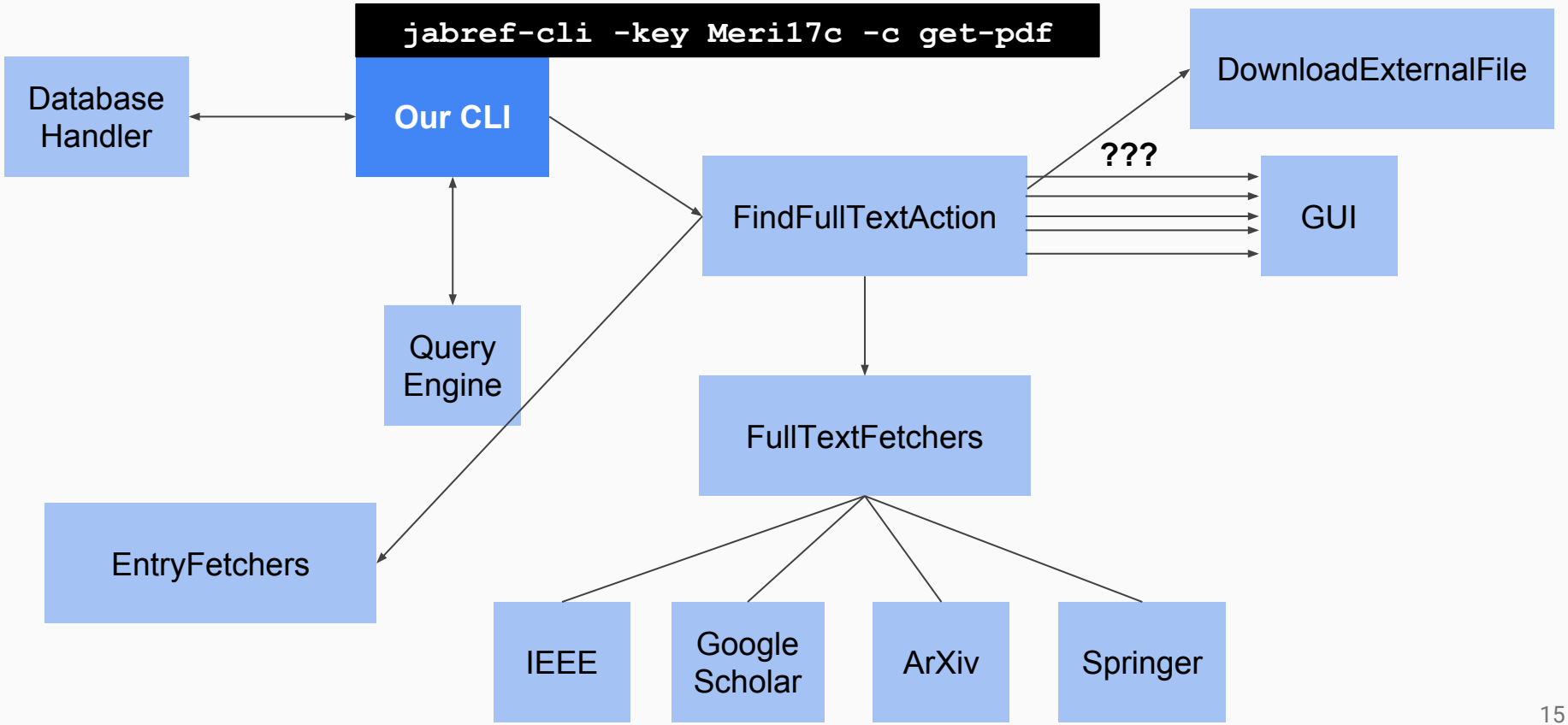

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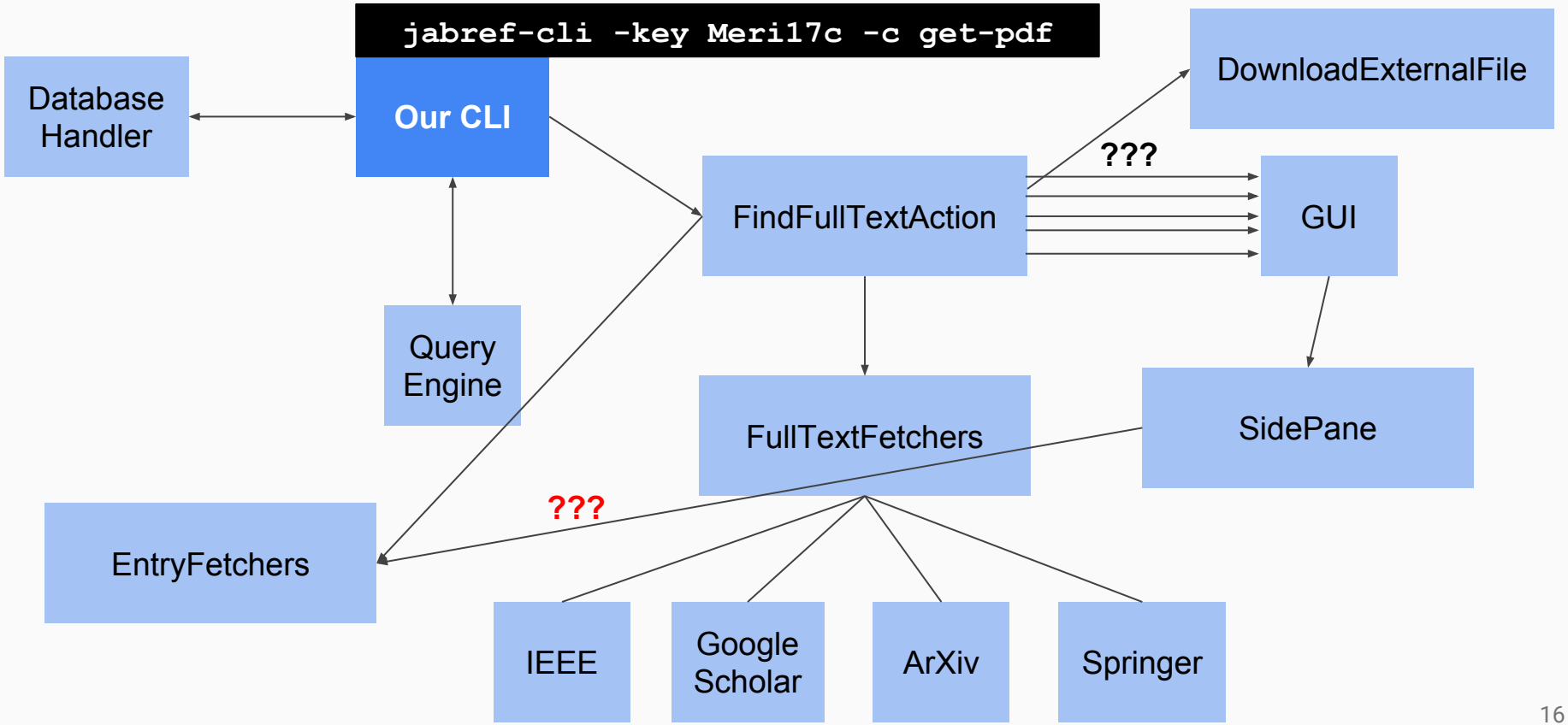

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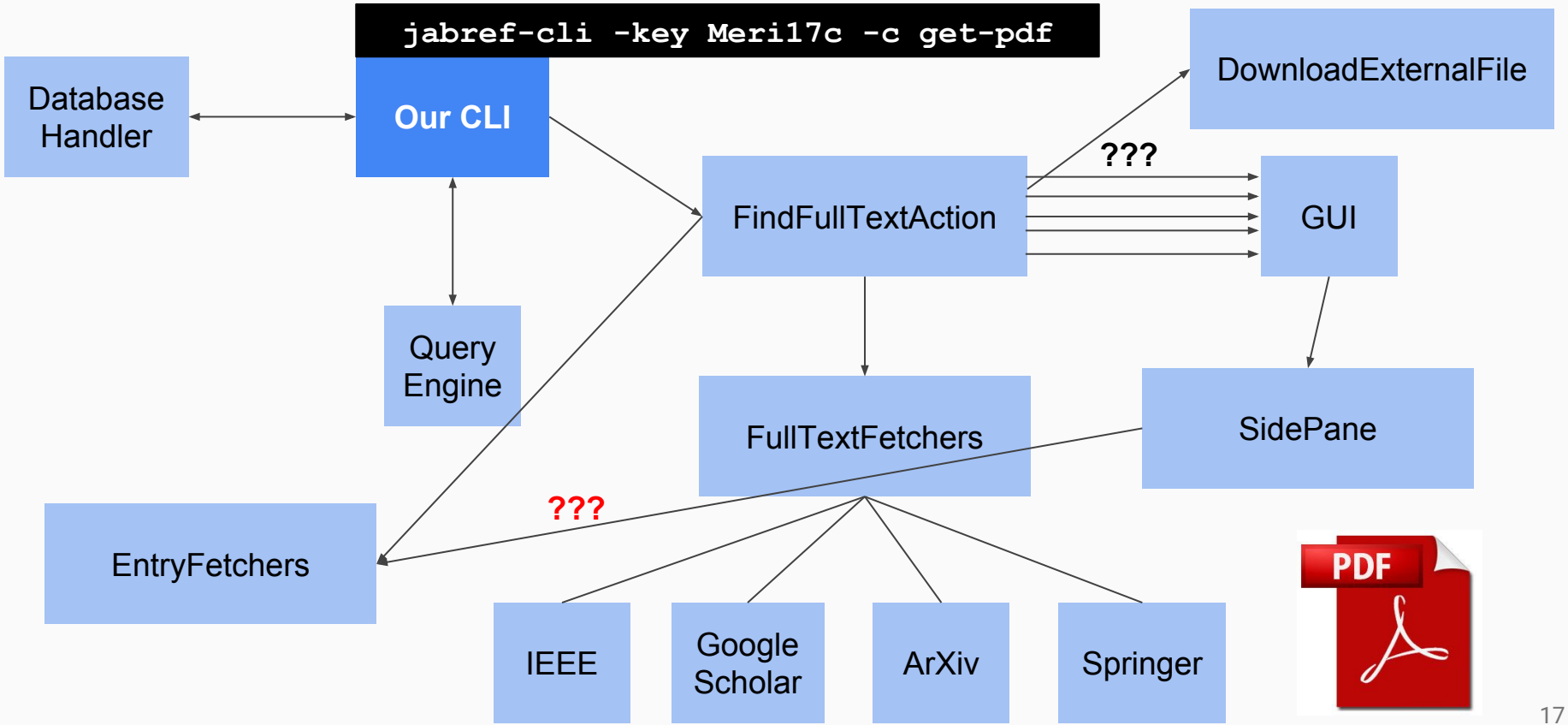

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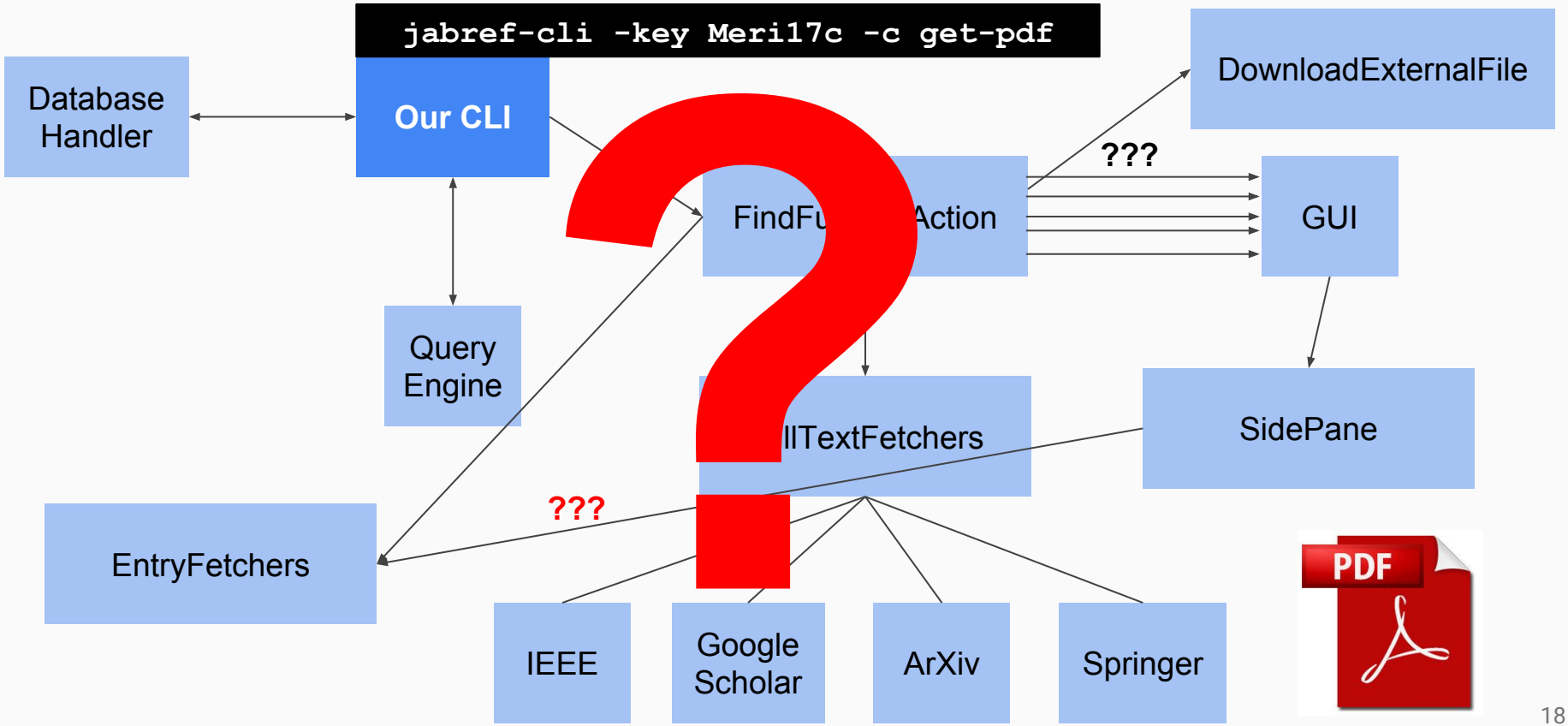


But we did it!

Current Features

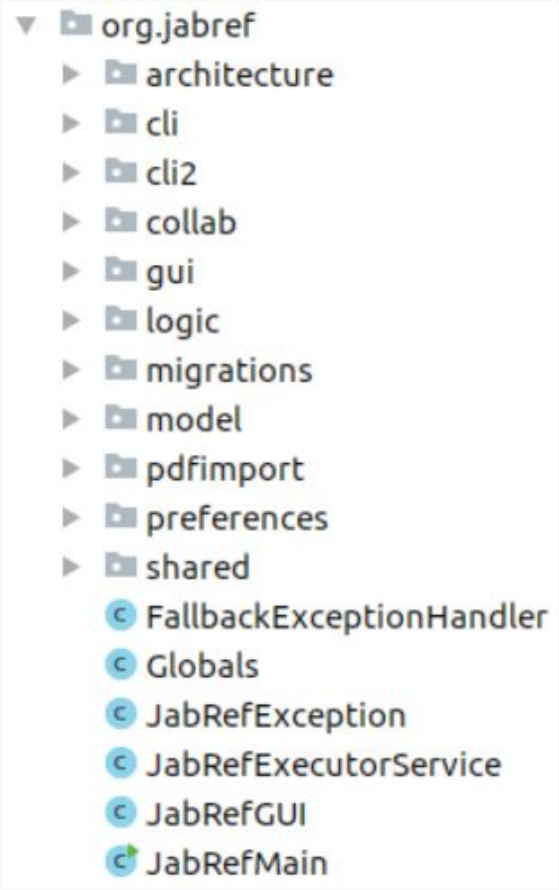
- Find a paper by key in the BibTex library and download the PDF
- Find and download PDFs by URL (ArXiv, ACM, IEEExplore, doi.org, Springer) and add entry
- Insert *file = {...}* in BibTeX file

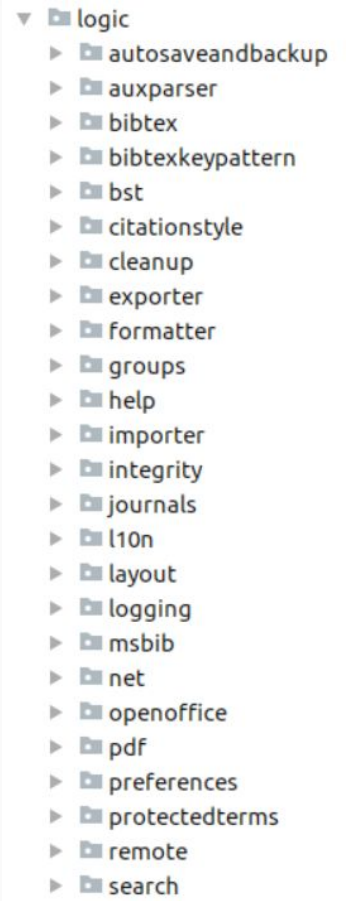
Lessons learned

- Spent way more time reading code than writing
- Well-maintained doesn’t mean well-engineered
- Accidental complexity?
- “Hacking” does the job, but the solution will hardly be sustainable

Don’t judge a book by its cover...

...or a project by its package structure





Future work

- Batch mode (run it on entire SCG bibliography)
- Handle multiple search results
- Refactoring

Applications

- SCG bibliography
- CiteWise
- Integrated Literature Research Environment
- Have a single command during daily work: get entry, get PDF, format entry, add file link