Extracting recipe ingredients from cookbooks

Ritter und Fabelwesen

von
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Der Beginn einer Master-Arbeit

Irrlichter

Heraus aus dem Sumpf

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4. CRF-based extraction

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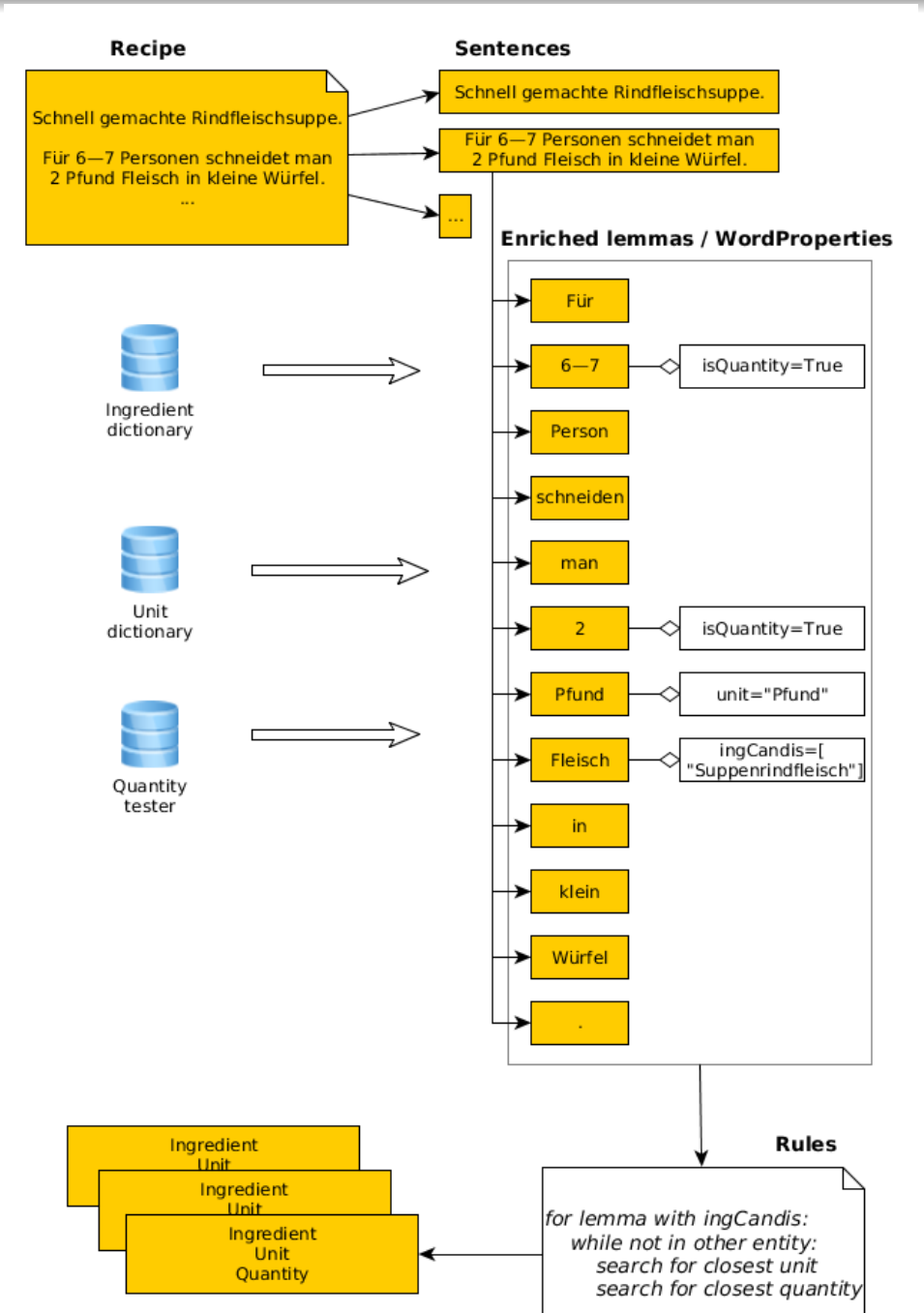


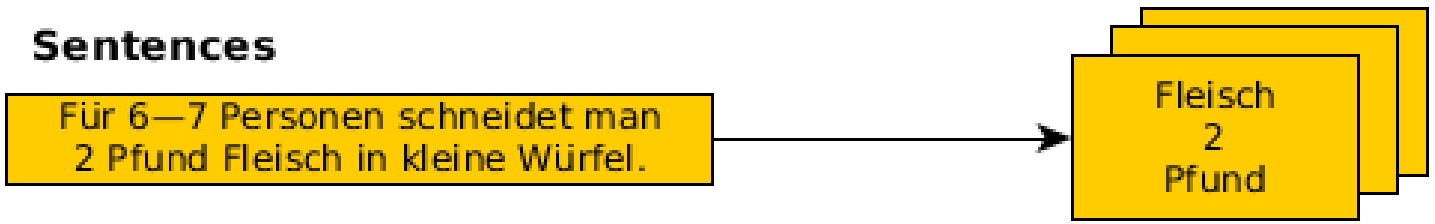
5. Dictionary- and Rule-based extraction

```
<cue:ingredient xml:id="Midder"
     BLSref="V582100">
    <cue:prefBasicForm>
        Midder
    </cue:prefBasicForm>
    <cue:altBasicForm>
        Kalbsmidder
    </cue:altBasicForm>
    <cue:altBasicForm>
        Bries
    </cue:altBasicForm>
    <cue:altBasicForm>
        Kalbsmilch
    </cue:altBasicForm>
    <cue:note>
        "Kalbsmidder ist auch
        unter dem Synonym [...]"
        (http://www.[...])
    </cue:note>
</cue:ingredient>
<cue:ingredient
     xml:id="Rindkochfleisch"
     BLSref="U180100">
    <cue:prefBasicForm>
        Rindfleisch
    </cue:prefBasicForm>
<cue:ingredient
     xml:id="Hammelfleisch"
     BLSref="Y400003">
    <cue:prefBasicForm>
        Hammelfleisch
    </cue:prefBasicForm>
</cue:ingredient>
```

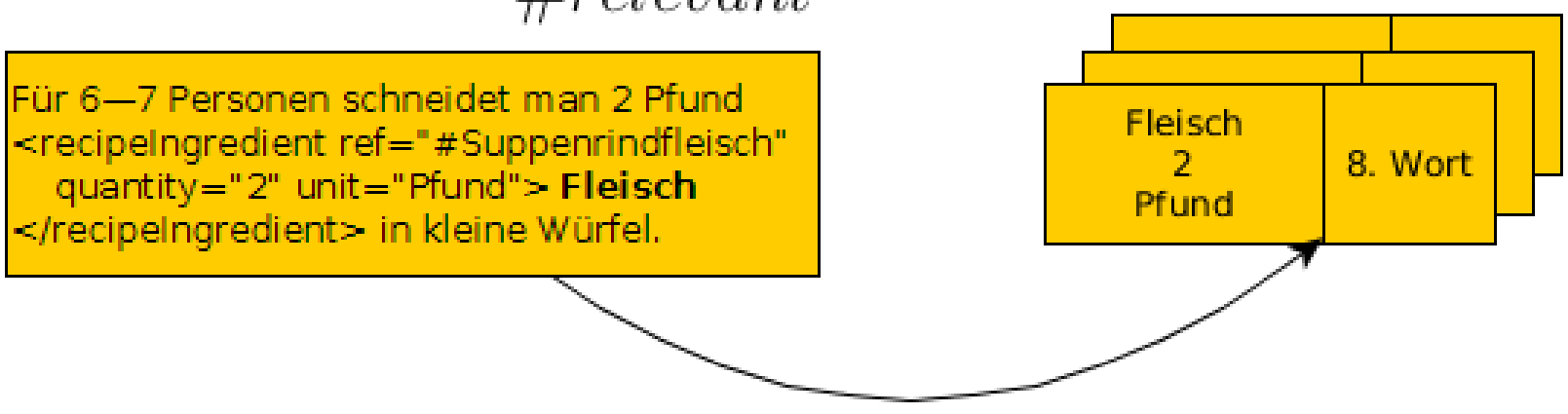
Ingredient dictionary

```
{
    Midder          : V582100
    Kalbsmidder     : V582100
    [...]
    Rindfleisch     : U180100
    Hammelfleisch   : Y400003
    [...]
    Fleisch         : [U180100,
                       Y400003,
                       ...
                      ]
}
```

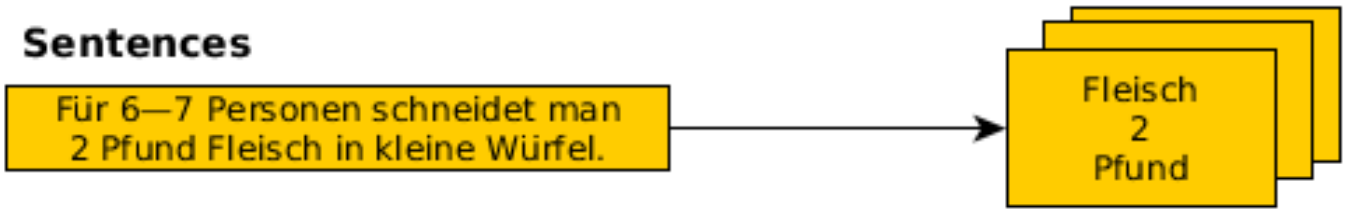
5. Dictionary- and Rule-based extraction



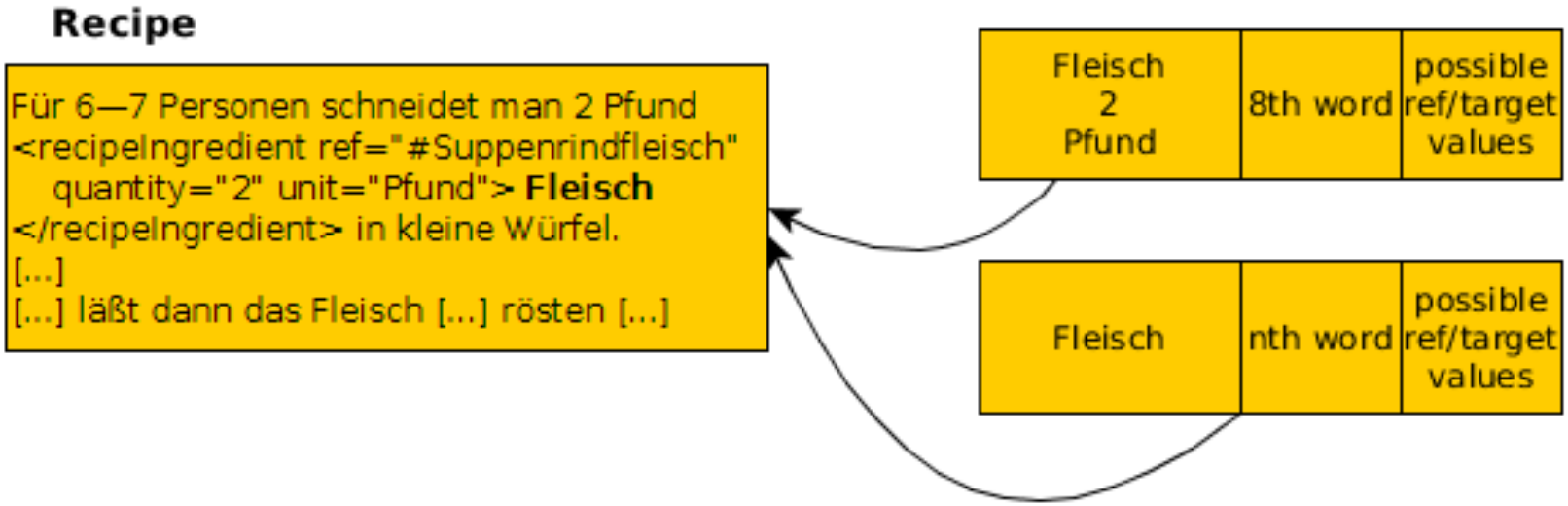
$$Recall = \frac{\#(retrieved \cap relevant)}{\#relevant}$$



5. Dictionary- and Rule-based extraction



$$Precision = \frac{\#(retrieved \cap relevant)}{\#retrieved}$$



5. Dictionary- and Rule-based extraction

Evaluation with recipes B-1 to B-50:
(Only considering ingredients)

- Recall: 0.807 (394/488)
- Precision: 0.833 (434/521)
- Time: 144.7 seconds
- Flaws:
  - Lemmatization (*Saucissen* $\not\Rightarrow$ *Saucisse*)
  - Is *Brühe* an ingredient?
  - Ingredients within title not tagged

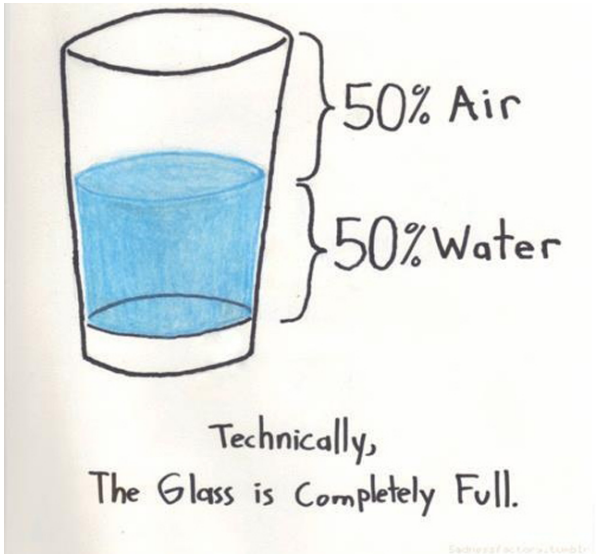
5. Dictionary- and Rule-based extraction

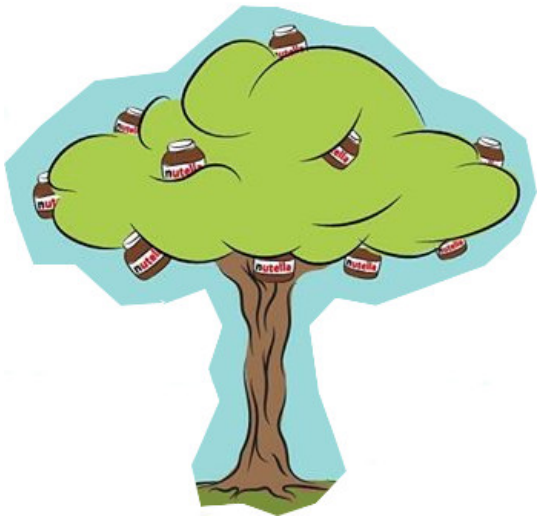
1. Dictionary- and Rule-based prototype
    1. Conceptual idea
    2. Evaluation
2. Refinement of prototype
    1. Illustrative enhanced rules
    2. Evaluation
3. Application to recipes from Chefkoch.de
4. GermaNet

6. Discussion

1. Usefulness of automatic extraction of ingredients
2. Quality of cueML and the obtained data
3. The development process
4. Knowledge is power

(8.) Ich bin Realist





Ich glaube, ich kann:

- Eine makellose Zutatenliste für jedes Rezept automatisch extrahieren
- Alle Informationen aus dem Buch extrahieren
- Eine wunderschöne Webseite zum Kochbuch erstellen und mit Inhalt füllen

- Einen Nutellabaum pflanzen

*XML-Tagger