BA: Structured Extraction of Terms and Conditions from German and English Online Shops

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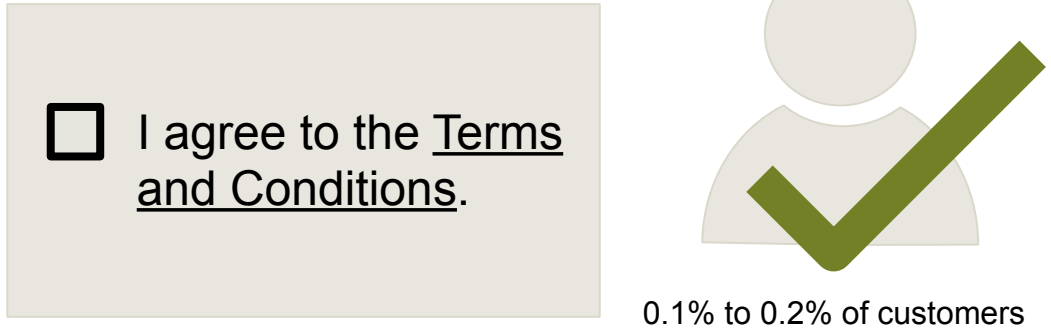
Outline

1. Motivation
2. Research Question
   - Context in AGB Check
3. Solution Approaches
4. Timeline

Motivation

Whom of you did ever read the Terms and Conditions when buying products online?

- no standard solutions for parts of the NLP pipe (structured extraction from websites)
- structured extraction is needed in legal documents to allow the drawing of conclusions later in the pipe
  - no existing solutions for structured & hierarchical extraction of T&C



0.1% to 0.2% of customers read T&C in online shops

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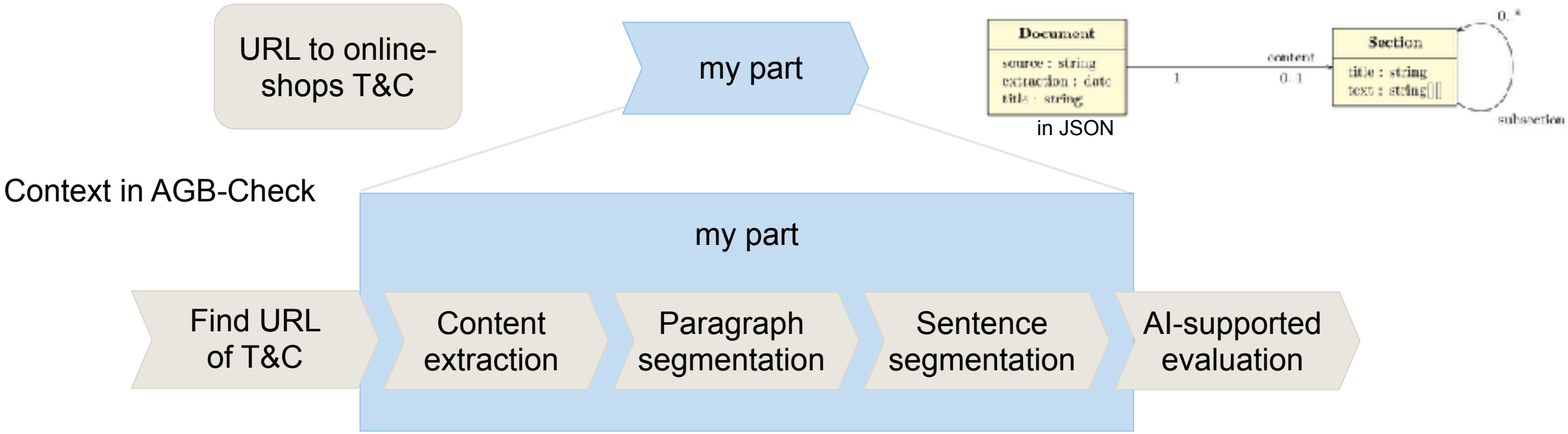
Research Question (Context in AGB-Check)

- RQ1: What are special requirements for the extraction of contracts in comparison with *regular* content?
- RQ2: How to extract the relevant parts from contracts in raw html?
- RQ3: How to handle certain characteristic elements (avoid classification as main content)?
- RQ4: How to extract structure and hierarchy of paragraphs, (sub-)titles and related clauses?
  - Which existing HTML and CSS properties provide useful information and can be used to structure the content?



For more information visit AGB-Check (http://wwwmatthes.in.tum.de)

Research Question (Context in AGB-Check)

- Example

Terms and Conditions of Aldi UK, 210325


```
{
    "subsections": [
        {
            "subsections": [],
            "text": [
                [
                    "our",
                    "Privacy",
                    "Notice",
                    ",",
                    "which",
                    "sets",
                    "out",
                    "the",
                    "terms",
                    "on",
                    "which",
                    "we",
                    "process",
                    "any",
                    "personal",
                    "data",
                    "we",
                    "collect",
                    "from",
                    "you",
                    ",",
                    "or",
                    "that",
                    "you",
                    "provide",
                    "to",
                    "us",
                    "."
                ],
                [
                    "You",
                    "consent",
                    "to",
                    "such",
                    "processing",
                    "by",
                    "using",
                    "our",
                    "Site",
                    "/",
                    "App",
                    ";"
                ]
            ],
            "title": ""
        },
        {
            "subsections": [],
            "text": [
                [
                    "our",
                    "Content",
                    "Management",
                    "Policy",
                    ",",
                    "which",
                    "governs",
                    "how",
                    "we",
                    "deal",
                    "with",
                    "content",
                    "which",
                    "you",
                    "submit",
                    "to",
                    "us",
                    ";",
                    "and"
                ]
            ],
            "title": ""
        },
        {
            "subsections": [],
```


excerpt of parsed T&C

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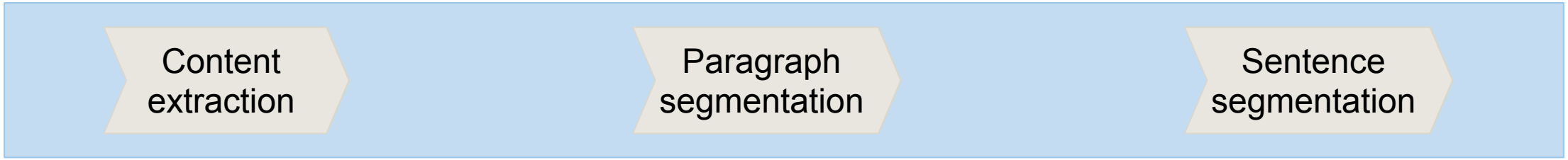
Solution Approaches



Selenium with driver to read entire page source code (+style)

Removing irrelevant content (based on tags, amount of text)

trafilatura, jusText, boilerpipe

Segmenting paragraphs (based on font-size [style], containers, enumerations)

SoMaJo shows good results for sentence segmentation & tokenization

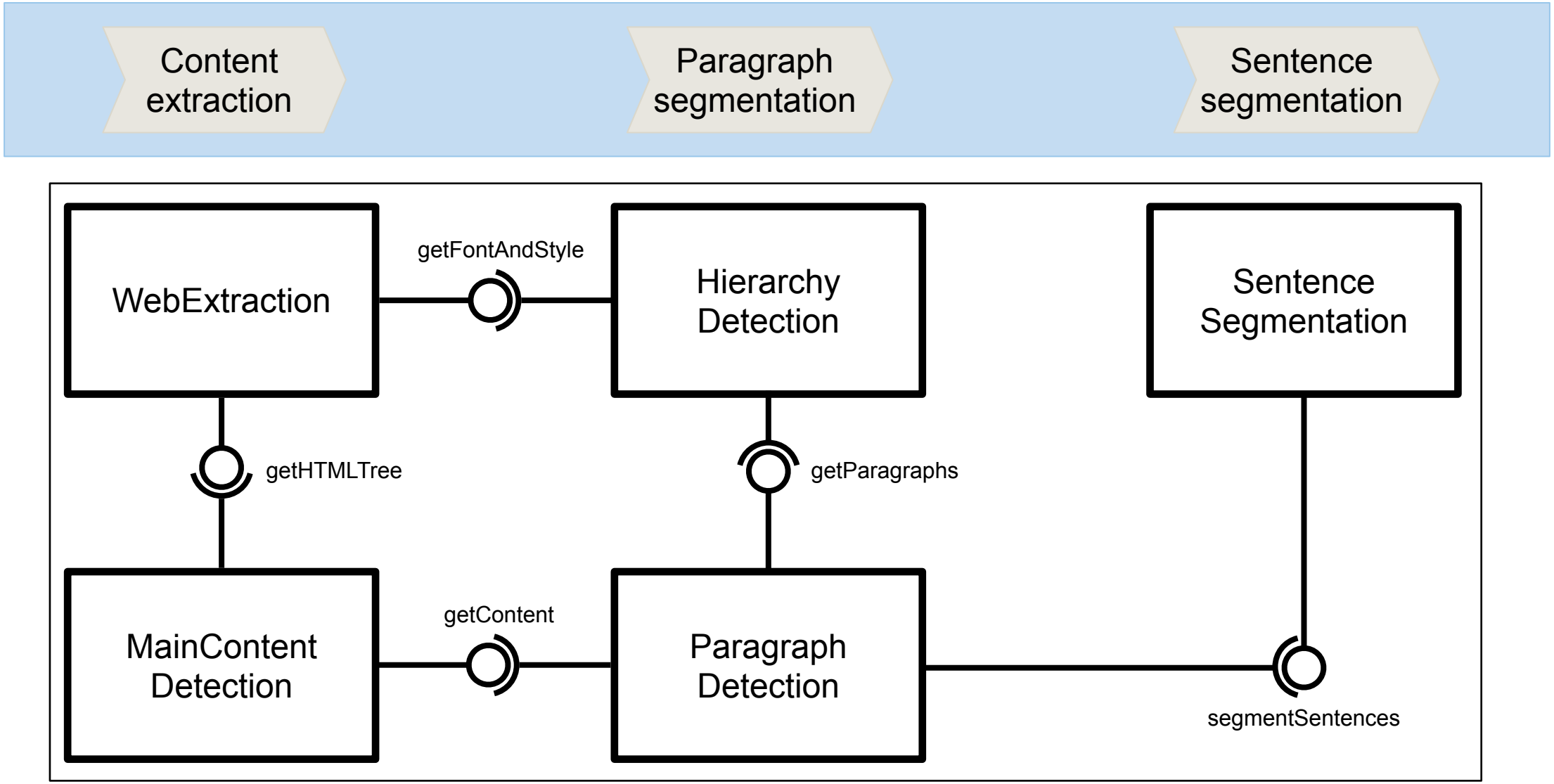
NLTK, spaCy

- exist. solutions
- approaches
- exist. libraries

[SoMaJo]Proisl, T., Uhrig, P.: SoMaJo: State-of-the-art tokenization for German web and social media texts

[github]boilerpipe (Canola & Article); [github]trafilatura; [github]jusText; [github]selenium; [github]NLTK; [github]spaCy

Solution Approaches



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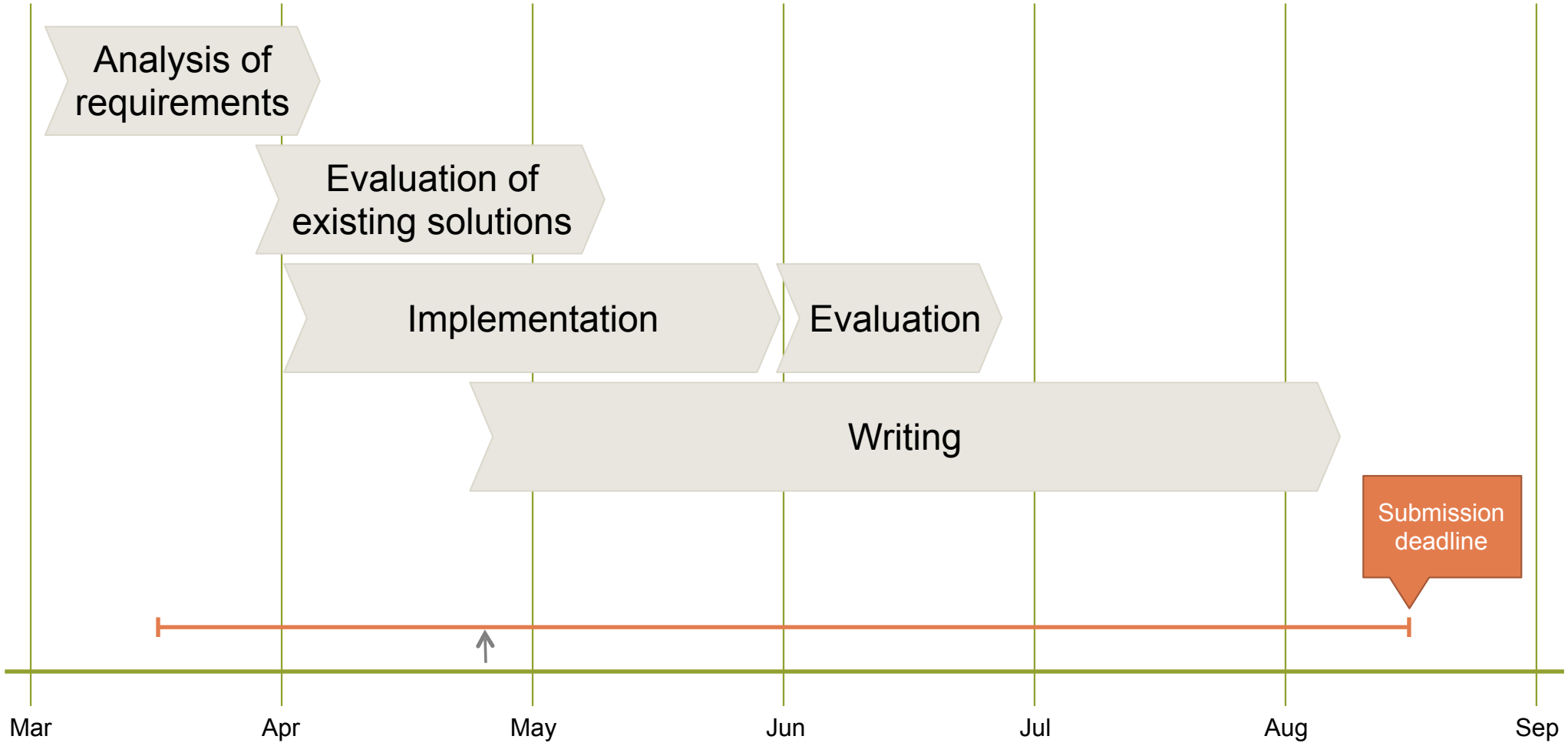

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