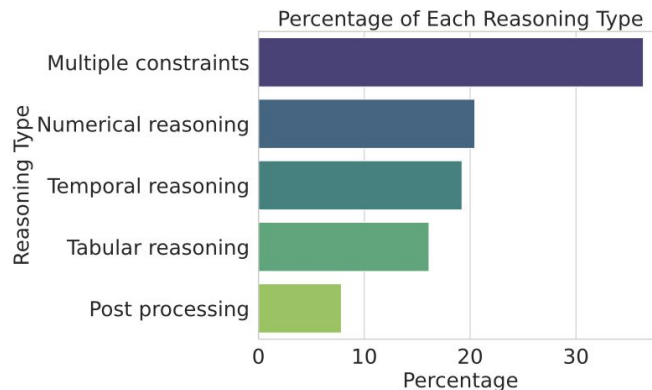
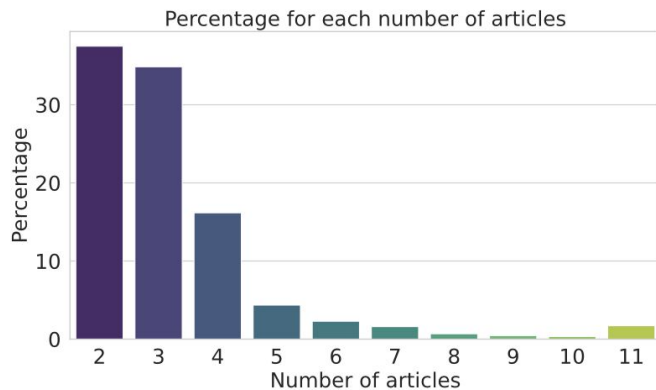


Sentient Challenge

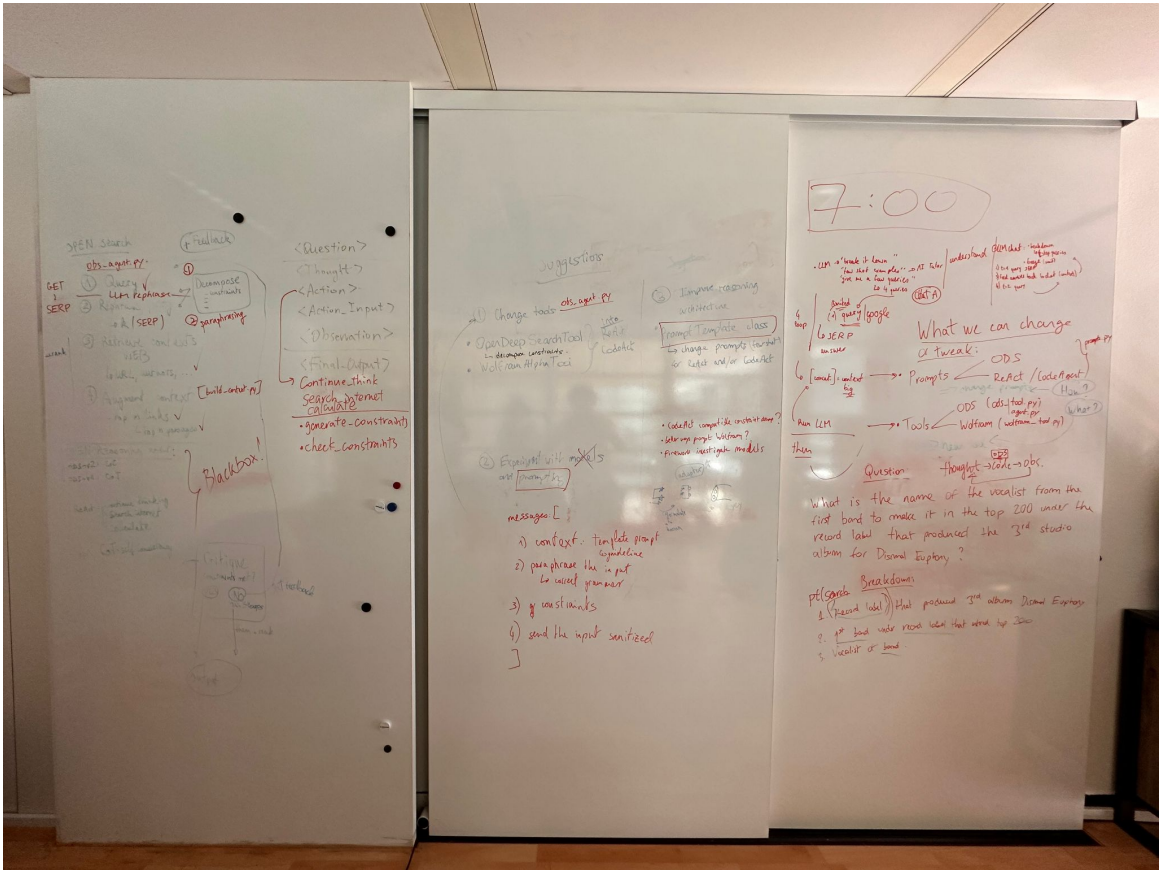
Team Name: Siuuupremacy

Data analysis

- Focused on improving at answering multiple constraints question

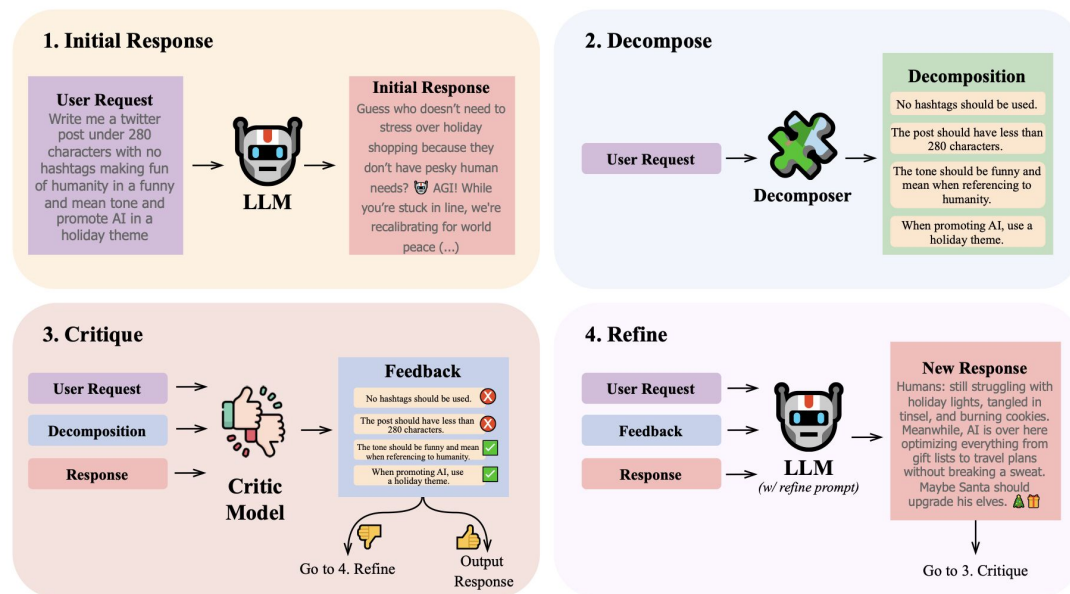


Brainstorming



Approach 1: DeCRIM

- **DECOMPOSE**, **CRITIQUE**, AND **REFINE** for Enhanced Following of Instructions with Multiple Constraints
- CustomCodeAgent to extract answer and context



- <https://arxiv.org/pdf/2410.06458>

Approach 1.5: Constraints Amplifier

- Given Query: Generate the explicit constraints that needs to be satisfied for a valid answer. Provide as additional context for the “OpenDeepSearchTool”. High temperature. Rephrase them.
- Hypothesis: Shedding new light on constraints may let agent create new search queries for when you can’t get answers with the “naive” queries or web is biased.
- Example:

Question: Imagine there is a building called Bronte tower whose height in feet is the same number as the dewey decimal classification for the Charlotte Bronte book that was published in 1847. Where would this building rank among tallest buildings in New York City, as of August 2024?

Answer: 37th

Alternative search query: New York City buildings with height 800 feet

Approach 2: Query breakdown

Task: "What is the chemical element named after the country where the inventor of the first practical electric typewriter was born?"

Thought: Let's start by searching for the inventor of the first practical electric typewriter using the tool `search`.

Code:

```
```py
inventor = search(query="inventor of first practical electric typewriter")
print("Inventor:", inventor)
```<end_code>
```

Observation:

Inventor: "The first practical electric typewriter was invented by James Fields Smathers."

...

Approach 2: Query breakdown

...

Thought: Now I need to find out using the tool ``search`` where James Fields Smathers was born.

Code:

```
```py
birthplace = search(query="James Fields Smathers country of birth")
print("Country of birth:", country_of_birth)
```<end_code>
```

Observation:

Birthplace: James Fields Smathers was born in the United States of America.

Thought: Finally, I need to find the chemical element named after the United States of America using the tool ``search``.

Code:

```
```py
element = search(query="chemical element named after United States of America")
final_answer(element)
```<end_code>
```

Results

0.6529

- Using only Query Breakdown approach
- CodeAgent based Reasoning Agent
- Model: Deepseek R1 Distill Llama 70b
- Without WolframAlpha API integration
- Score was calculated using own reranker (based on nomic-ai/nomic-embed-text-v1.5)

Thank you for your attention!