CS678 Advanced Natural Language Processing Project Testing with various Claims.

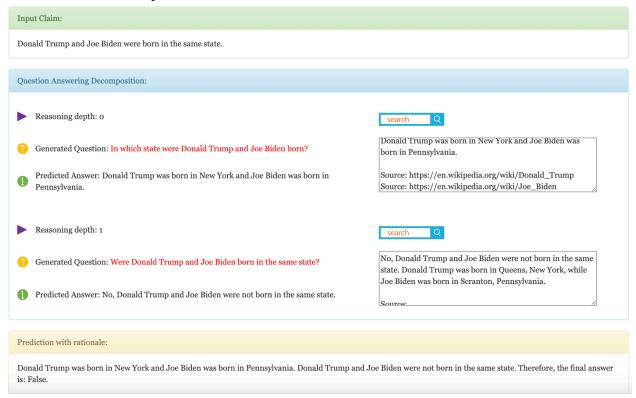
Team members:

Tarun Naga Sai Chadaram ,G01445928,tchadara@gmu.edu

Samanvitha Matta, G01252738, smatta2@gmu.edu

Sai Prakash Jallu ,G01442762,sjallu@gmu.edu

1.Claim: Donald Trump and Joe Biden were born in the same state.



Our analysis on how the claim is getting processed:

This architecture describes a method for repeatedly creating queries, getting responses, and determining whether the evidence is sufficient to support a claim. Let's examine the procedure for the specified assertion"Donald Trump and Joe Biden were born in the same state":

Claim Verifier D:

Assesses whether the current context is adequate to support the claim. In this instance, it evaluates whether the current situation lends credence to the assertion that Joe Biden and Donald Trump have a same birth state.

Ouestion Generator 2:

Produces the subsequent query depending on the available information that is required to validate the assertion. "In which state were Donald Trump and Joe Biden born?" is the inquiry that the question generator creates in order to elicit more precise information pertinent to the assertion.

Question-Answering Model A:

Responds to the query posed by \mathcal{Q} and offers the proof in support of the answer. Along with the supporting data, the model predicts the response, "Joseph Biden was born in Pennsylvania, and Donald Trump was born in New York."

Validator \mathcal{V} :

Verifies, in light of the claim and the current context, the newly created (question, answer) pair's utility. The validator evaluates whether or not \(\mathcal{L}'\)s response is consistent with the assertion and the current situation. If the response refutes the assertion, it might lead to more inquiries or explanations.

Reasoner R:

Makes use of pertinent context to support the claim's validity. To arrive at a final assessment of the claim's veracity, the reasoner compiles data from the claim, questions, answers, and validation outcomes. In this instance, it comes to the conclusion that the assertion that Joe Biden and Donald Trump were born in the same state is untrue because they were born in different states.

All things considered, this architecture makes it easier to conduct a methodical approach to fact-checking by allowing users to repeatedly gather evidence, evaluate its adequacy, and make decisions about the claim's truthfulness based on the facts at hand. Each component's examination adds to a more thorough comprehension of the veracity of the claim.

Claim 2. Not only default claims but also we could turn in our own claims and here are few claims of they are getting answered:

Input Claim:	
Did India win the first cricket world cup in the year 1983?	
Question Answering Decomposition:	
Reasoning depth: o	search Q
? Generated Question: Who won the first cricket world cup in the year 1983?	India won the first cricket world cup in the year 1983. Here is a relevant Wikipedia article: https://en.wikipedia.org/wiki/1983_Cricket_World_Cup
Predicted Answer: India	https://en.wikipedia.org/wiki/1963_Cricket_world_cup
Prediction with rationale:	
India won the first cricket world cup in the year 1983. Therefore, the final answer is: True.	

Claim Verifier D:

Assesses whether the current context is adequate to support the claim.

Question Generator 2:

Produces the subsequent query depending on the available information that is required to validate the assertion. To obtain more precise information pertinent to the claim, the question generator in this instance creates the query, "Who won the first cricket world cup in the year 1983?"

Question-Answering Model A:

Responds to the query posed by \mathcal{Q} and offers the proof in support of the answer. The response that the program predicts is "India," indicating that the country won the inaugural cricket world cup in 1983.

Validator V:

Verifies, in light of the claim and the current context, the newly created (question, answer) pair's utility. The validator evaluates whether or not h's response is consistent with the assertion and the current situation

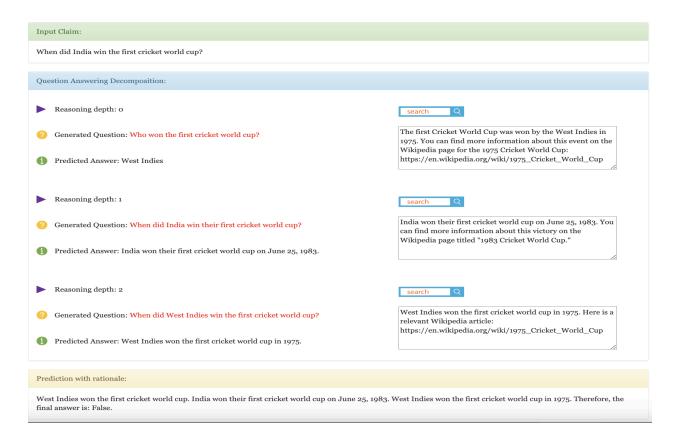
Reasoner R:

Makes use of pertinent context to support the claim's validity. To arrive at a final assessment of the claim's veracity, the reasoner compiles data from the claim, questions, answers, and validation outcomes. In this instance, it deduces that the assertion that India won the inaugural cricket world cup in 1983 is accurate because the response "India" supports the claim.

And when there is just question like:

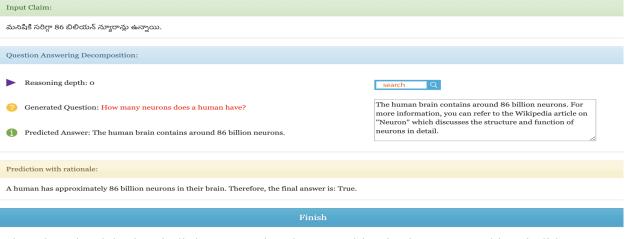
Claim3:"When did India win the first cricket world cup?"

Then model is being little in ambiguous state as it is drawing up wrong context in few question decompositions as following image:

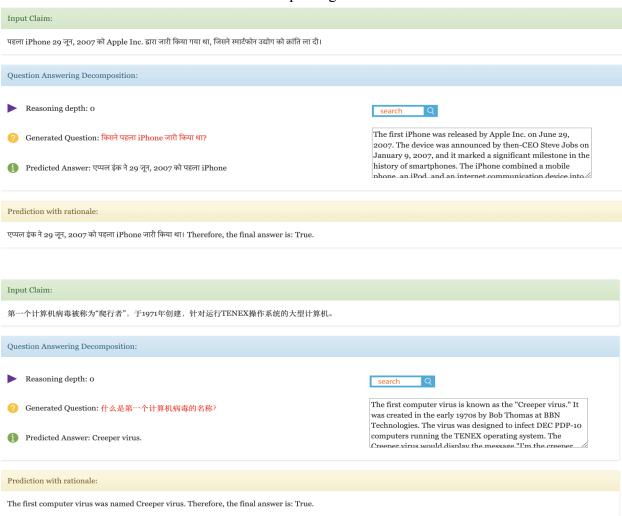


So when we give claim as "When did India win the first cricket world cup?" the model is turning out to give the results related to West indies too because in context there is even the phrase first world cup which is acquired by country West Indies. This shows when the claim is being ambiguous and asking just raw question might lead the model to assume some conditions and answer as seen drafting its Reasoning Depths.

3. We even tried to give the customs Claim in different languages like Telugu, Hindi and Chinese and these are outputs results it turn out to give:



When there is Claim in Hindi the Answering decomposition is also processed in Hindi language there is no translation at this moment. The output is given under this:



These are the outputs and testing we made to observe how the used model is giving the answers and how there is answers decompositions is taking place. How the model is behaving when it is given a normal question which is not a fact and how it tries to solve that. We also tried to give the

claim in different languages in tried to see if the model is able to be Multilingual and produce same and accurate results as in english and thats working well.