

Logic-LM Task 5: Testing and Results

For Task 5, I reimplemented a simplified version of the Logic-LM reasoning pipeline and tested it using a knowledge base adapted from CIFAR-10 labels.

I converted the CIFAR-10 image labels (like “cat”, “truck”, etc.) into symbolic facts and wrote simple logic rules to define which labels are animals and which are vehicles.

Using a basic logic solver, I was able to answer questions such as “Is cat an animal?” or “Is truck a vehicle?” by checking these facts and rules.

The pipeline follows the main idea of the Logic-LM paper, which is to translate natural language questions into logic and then use symbolic reasoning to answer them. In my version, I used a straightforward mapping from questions to logic forms instead of a full large language model, for simplicity and ease of testing.

When I ran the tests in Google Colab, the solver correctly answered “Yes” for cases like “cat” being an animal and “truck” being a vehicle, and “No” when the label didn’t fit the rule (like “automobile” as an animal).

GitHub Repo:

<https://github.com/yourusername/logic-lm-task5>