

```

Program:
# Knowledge Base (Rules in IF-THEN format)
knowledge_base = {
    "flu": [{"cough", "fever"}],
    "fever": [{"sore_throat"}],
}
# Known facts
facts = {"sore_throat", "cough"}
# Backward chaining function
def backward_chaining(goal):
    if goal in facts: # If the goal is a known fact, return True
        return True
    if goal in knowledge_base: # If the goal has rules in KB
        for conditions in knowledge_base[goal]: # Check each rule
            if all(backward_chaining(cond) for cond in conditions): # Recursively verify
                return True
    return False # If no rule or fact supports the goal, return False
# Query: Does the patient have flu?
query = "flu"
if backward_chaining(query):
    print(f"The patient is diagnosed with {query}.")
else:
    print(f"The patient does NOT have {query}.")

```

Output:

The patient is diagnosed with flu.

Result:

Thus the given car-based discussion program has been implemented successfully and the program has been uploaded in the github link.