

EX:7

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IMPLEMENTATION OF BACKWARD CHAINING

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 the knowledge base    for
conditions in knowledge_base[goal]:                # Check each
rule for the goal    if all(backward_chaining(cond) for
cond in conditions):    # If all conditions of a rule are
true, return True    return True

# If no rules or facts support the goal, return False
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:

```

===== RESTART: C:/Users/yadhu/puc/poai-7.py =====
The patient is diagnosed with flu.
>>>

```