

IMPLEMENTATION OF BACKWARD CHAINING

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Program:

```
knowledge_base = {  
    "flu": ["cough", "fever"],  
    "fever": ["sore_throat"],  
}
```

```
facts = {"sore_throat", "cough"}
```

```
def backward_chaining(goal):  
    if goal in facts:  
        return True  
  
    if goal in knowledge_base:  
        for conditions in knowledge_base[goal]:  
            if all(backward_chaining(cond) for cond in conditions):  
                return True  
  
    return False
```

```
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.  
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=== Code Execution Successful ===
```