NAME: TARRUN.B

CLASS & SEC : AI&DS – 'FD'

REG NO: 241801291

EX NO: 7

DATE: 17-05-2025

EXP NAME : IMPLEMENTATION OF BACKWARD CHAINING

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:

File   Edit   Shell   Debug   Options   Window   Help

```
Python 3.13.2 (tags/v3.13.2:4f8bb39, Feb  4 2025, 15:23:48) [MSC v.1942 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/tarru/AppData/Local/Programs/Python/Python313/Tarrun B AIDS-FD 241801291.py
The patient is diagnosed with flu.
>>>
```