PRINCIPLES OF ARTIFICIAL INTELLIGENCE LAB – EXPERIMENT 8: FORWARD CHAINING

```python
# Knowledge Base: Rules in IF-THEN format knowledge_base

= [

    (["cough", "fever"], "flu"),

    (["sore_throat", "runny_nose"], "cold"),

    (["sore_throat"], "fever")  # Sore throat can lead to fever

]


# Given initial facts facts =

{"cough", "sore_throat"}


# Forward Chaining Function def

forward_chaining():

    inferred = True  # Keep looping as long as new facts are added


    while inferred:

        inferred = False  # Stop if no new fact is added in an iteration


        for conditions, conclusion in knowledge_base:          if all(condition in facts for

condition in conditions) and conclusion not in facts:

            facts.add(conclusion)  # Add the inferred fact

inferred = True  # Mark that we inferred a new fact


# Run forward chaining forward_chaining()
```

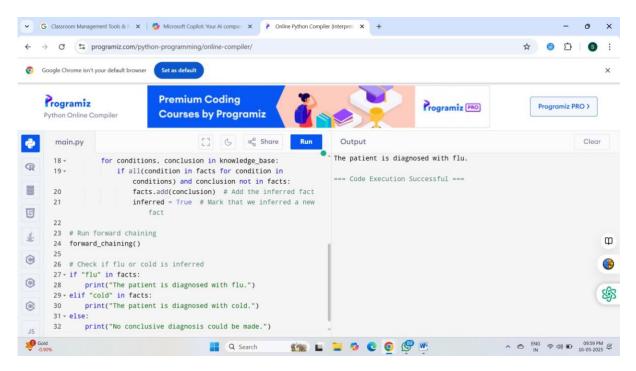# Check if flu or cold is inferred if

"flu" in facts:

    print("The patient is diagnosed with flu.") elif

"cold" in facts:

    print("The patient is diagnosed with cold.")

else: print("No conclusive diagnosis could be

made.")

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