

NAME: TARRUN.B

CLASS & SEC : AI&DS – 'FD'

REG NO: 241801291

EX NO: 8

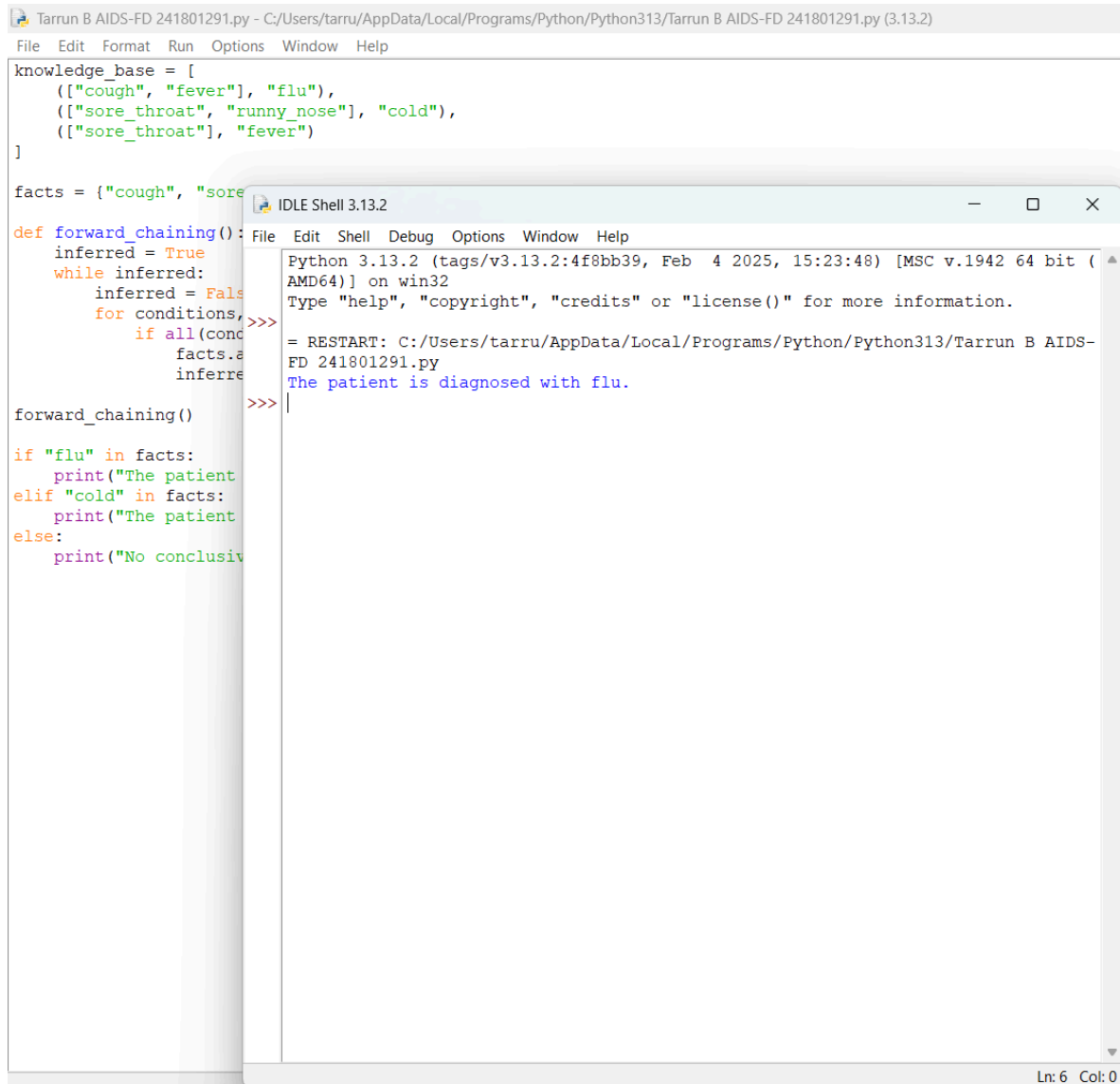
DATE: 17-05-2025

EXP NAME : IMPLEMENTATION OF FORWARD CHAINING

PROGRAM :

```
knowledge_base = [  
    ("cough", "fever"], "flu"),  
    ("sore_throat", "runny_nose"], "cold"),  
    ("sore_throat"], "fever")  
]  
facts = {"cough", "sore_throat"}  
def forward_chaining():  
    inferred = True  
    while inferred:  
        inferred = False  
        for conditions, conclusion in knowledge_base:  
            if all(condition in facts for condition in conditions) and conclusion not  
in facts:  
                facts.add(conclusion)  
                inferred = True  
forward_chaining()  
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.")
```

OUTPUT:



```
Tarrun B AIDS-FD 241801291.py - C:/Users/tarru/AppData/Local/Programs/Python/Python313/Tarrun B AIDS-FD 241801291.py (3.13.2)
File Edit Format Run Options Window Help

knowledge_base = [
    (["cough", "fever"], "flu"),
    (["sore_throat", "runny_nose"], "cold"),
    (["sore_throat"], "fever")
]

facts = {"cough", "sore_throat"}

def forward_chaining():
    inferred = True
    while inferred:
        inferred = False
        for conditions, conclusion in knowledge_base:
            if all(condition in facts for condition in conditions):
                inferred = True
                facts.add(conclusion)
                print(conclusion)
    forward_chaining()

if "flu" in facts:
    print("The patient has flu.")
elif "cold" in facts:
    print("The patient has a cold.")
else:
    print("No conclusive diagnosis.")
```

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.

Ln: 6 Col: 0