Department of Computer Engineering

Academic Term: Jan-Apr 2022

Class : T.E Computer Sem -VII

Subject: Artificial Intelligence

Practical No:	**6**
Title:	**Forward Chaining Algorithm**
Date of Performance:	**25/04/2022**
Date of Submission:	**26/04/2022**
Roll No:	**8940**
Name of the Student:	Warren Fernandes

Evaluation:

Sr. No	Rubric	Grade
1	**On time Completion & Submission(2)**	
2	**Output(3)**	
3	**Code Optimization(3)**	
4	**Knowledge of the topic(2)**	
5	**Total (10)**	

Signature of the Teacher :

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Practical- 06

Forward Chaining Algorithm

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Problem Statement:

The law says that it is a crime for an American to sell weapons to hostile nations. The country Nono, an enemy of America, has some missiles, and all of its missiles were sold to it by Colonel West, who is American.

Prove that West is a criminal.

Code:

```
'''Implement forward chaining algorithm -

Use any problem statement of your choice like
The law says that it is a crime for an American to sell weapons to host
ile nations. The country Nono, an enemy of America, has some missiles,
and all of its mi ssiles were sold to it by Colonel West, who is
American.

Prove that West is a criminal.'''


def american(x):    if
x=='West':      print(x," is an
American")      return True
else:
    print("america: False")
return False
 def
missile(y):
  print(y," is a missile")
return weapon(y)
 def
weapon(y):
if y=='m':
    print(y," is a weapon")
return True    else:
    print("weapon: False")
```

```python
        return False


def owns(x,y):    if y=='m'
and x=='Nono':        print(x,"
owns ",y)        return
sells('West',y,x)    else:
    print("owns: False")
return False


def sells(x,y,z):    if x=='West' and
y=='m' and z=='Nono':
    print(x," sells ",y," to ",z)
return True    else:
    print("sells: False")
return False


def enemy(x,y):
if y=='America':
    print(x," is an enemy of ",y)
return hostile(x)    else:
    print("enemy: False")
return False


def hostile(x):    if
x=='Nono':        print(x,"
is hostile")        return
True    else:
    print("hostile: False")
return False

print("***************************** FORWARD CHAINING ALGORITHM********
************************\n") if american('West') and missile('m') and
owns('Nono','m') and enemy('No no','America'):
  print("\nWEST IS A CRIMINAL")
print("\nHence Proved!!") else:
  print("\nWEST IS NOT A CRIMINAL")
```

Output:

```
***************************** FORWARD CHAINING
ALGORITHM*******************************

West   is an American
m   is a missile
m   is a weapon
Nono   owns   m
West   sells   m   to   Nono
Nono   is an enemy of   America
Nono   is hostile

WEST IS A CRIMINAL

Hence Proved!!
```