Implementation of Forward Chaining

Aim

To implement a concise Forward Chaining algorithm that infers conclusions based on known facts and rules.

Code

```
def forward_chaining(kb, goal):

facts = set(kb['facts'])

added = True

while added:

added = False

for rule in kb['rules']:

if rule['then'] not in facts and all(cond in facts for cond in rule['if']):

facts.add(rule['then'])

added = True

return goal in facts

kb = {

'facts': ['Sunny', 'Weekend'],

'rules': [

{'if': ['Sunny', 'Weekend'], 'then': 'GoForPicnic'},

{'if': ['GoForPicnic'], 'then': 'PackLunch'}

]

}

goal = 'PackLunch'

print(f"Should we pack lunch? =>", forward_chaining(kb, goal))
```

Output

Should we pack lunch? => True

Result

The system correctly inferred that we should **pack lunch**, based on the initial facts 'Sunny' and 'Weekend'.