LAB-06

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Project title :- Create a knowledge base using propositional logic and throw that the given query entails the knowledge base or not

Algorithm :-

Input :

kb (knowledge base expression)

q (query expression)

combinations (all possible truth assignments for variables)

* Generate all possible truth combinations for the variables combination = [(True, True, True)...

* Convert the infix expressions for kb & q to postfix notation

kb_postfix = toPostfix(kb)

query_postfix = toPostfix(q)

* Evaluate both kb and query expressions for each combinations in the truth table

```
For each combinations (comb) in combinations:
    s = evaluatePostfix (kb_postfix, comb) # Evaluate query kb
    f = evaluatePostfix (query_postfix, comb) # Evaluate query
    if s is true & f is false:
        return false
Return True
```

Output

if the result is True, print the knowledge Base entails query

Else, print "The knowledge Base does not entail query"

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State ...
Express...
State

1
2
3
4
5
6
7
8

Result
The ...
Linea...
State

State space
Expression : p ∧ q , Query : r

State	p	q	h	KB Eval	query Eval	KB → Query entails
1	True	True	True	True	True	True
2	True	True	False	True	False	False
3	True	False	True	False	True	True
4	True	False	False	False	False	True
5	False	True	True	False	True	True
6	False	True	False	False	False	True
7	False	False	True	False	True	True
8	False	False	False	False	False	True

Result :-
The knowledge base does not entail query since we found KB: True & Query : False in state 2