AI ASSIGNMENT 5

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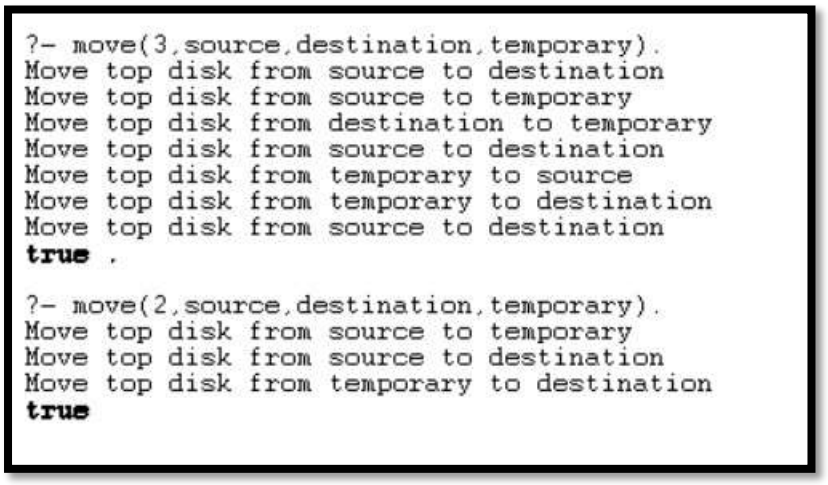
1. **Perform Towers of Hanoi.**

CODE:

```
%tower of hanoi
move(1,X,Y,_) :-
 write('Move top disk from '),
 write(X),
 write(' to '),
 write(Y),
 nl.
move(N,X,Y,Z) :-
 N>1,
 M is N-1,
 move(M,X,Z,Y),
 move(1,X,Y,Z),
 move(M,Z,Y,X).
```

OUTPUT:



2. **WAP to check whether the number is present in the list or not.**

3. **WAP to add a number in the list.**

4. **WAP to concat two lists and store the result in third list.**

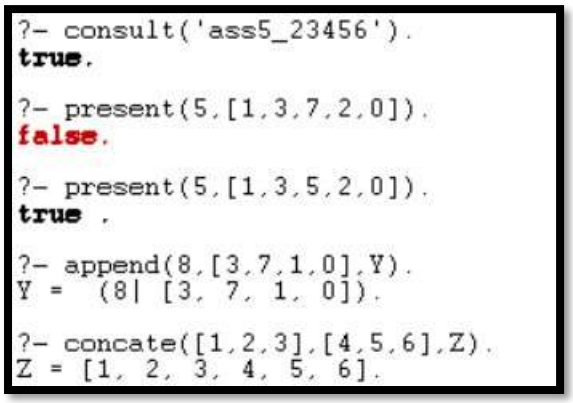
5. **WAP to delete an element from the list.**

6. WAP to sum the elements of a list of numbers.

CODE:

```
%to check whether the number is present in the list or not.
present(X, [X|_]).
present(X,[_|T]) :-
 present(X,T).

%to add a number in the list.
append(N,L,N|L).

%concatenate two lists
concat([],L,L).
concat([H|T],L,[H|Z]):- concat(T,L,Z).

%to delete an element from the list.
deleteElement(X, [X|T], T).
deleteElement(X, [H|T], [H|Z]) :- deleteElement(X, T, Z).

%to sum the elements of a list of numbers.
sum(X,[]):-
 X is 0.
sum(X,[H|T]) :-
 sum(Y,T),
 X is H+Y.
```

OUTPUT:



```
?- deleteElement(3,[4,5,6,3,9],Z).
Z = [4, 5, 6, 9] .
```

```
?- sum(X,[1,2,3,4,5]).
X = 15.
```