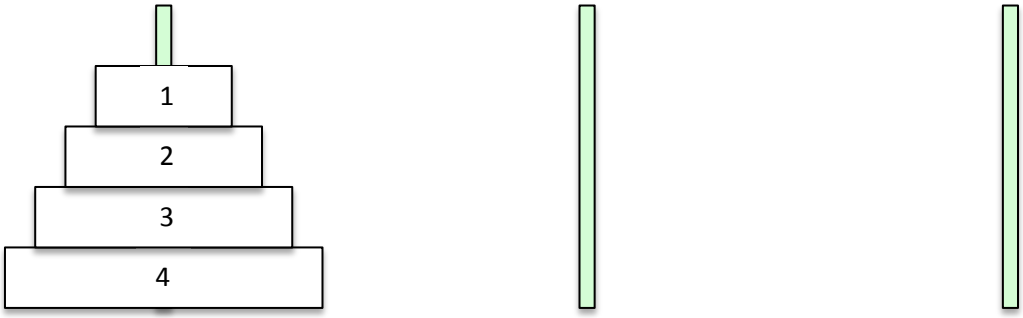
Εργαστήριο Τεχνητή Νοημοσύνη ΙΙ

Παύλος Πέππας

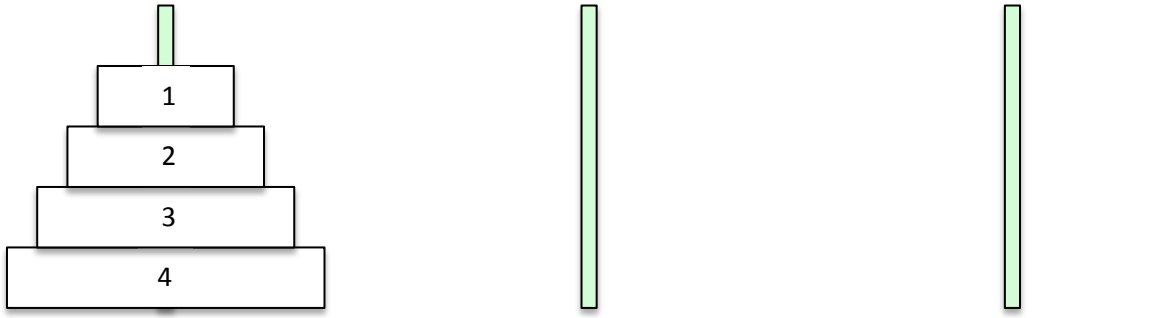
Τμήμα Ηλεκτρολόγων Μηχανικών

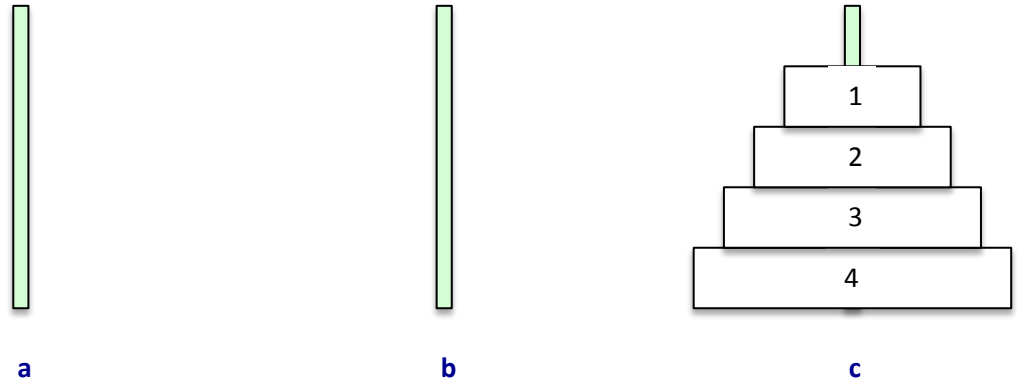
και Τεχνολογίας Υπολογιστών

Πύργοι του Ανόι



Πύργοι του Ανόι





Λύση

```
#const m=4.
peg(a;b;c). disk(1..m). at(1..m,a,0).

goal(1..m,c).
:- goal(D,P), not at(D,P,n).
#const n=15.

1 {move(D,P,T): disk(D), peg(P)} 1 :- T = 0..n-1.
#show move/3.
```

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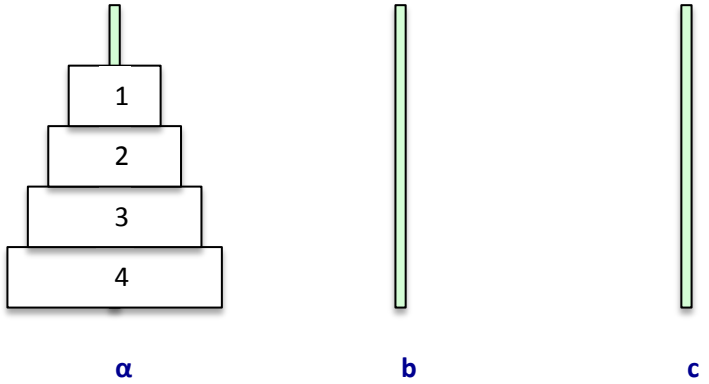

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% Effect Axiom
at(D,P,T+1) :- move(D,P,T), T<n.
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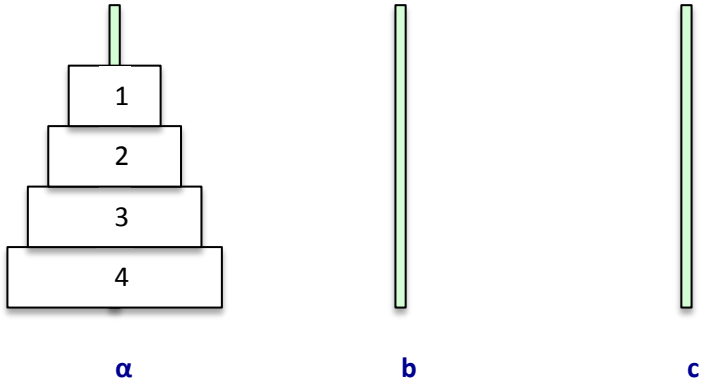

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at(D,P,T+1) :- move(D,P,T), T<n.

% Frame Axiom
at(D,P,T+1) :- at(D,P,T), not move(D,_,T), T<n.
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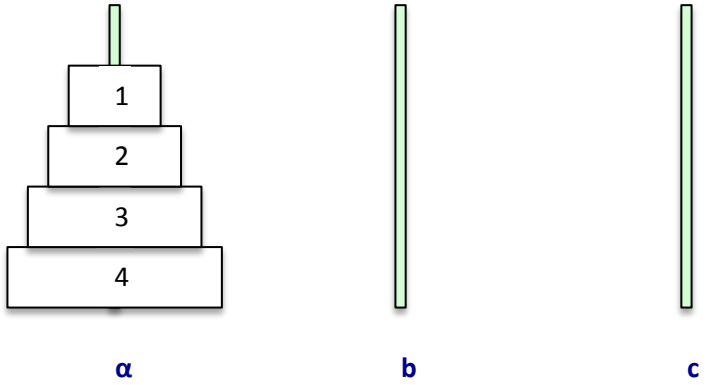

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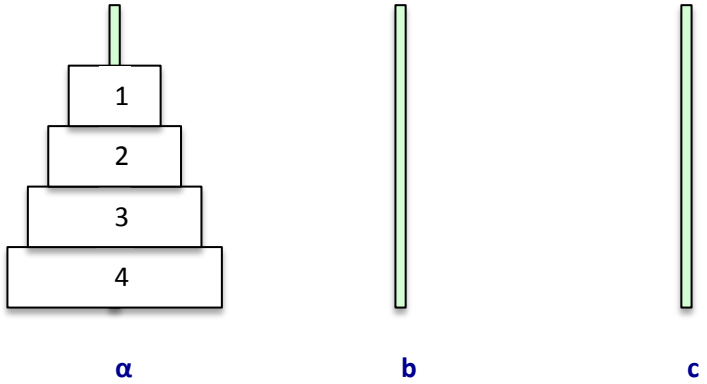
% Frame Axiom
at(D,P,T+1) :- at(D,P,T), not move(D,_,T), T<n.

% Προϋποθέσεις Ενέργειας
:- at(D,P,T), move(D,P,T), T<n.
:- at(D,P,T), at(D2,P,T), D>D2, move(D,_,T), T<n.
:- D>D2, at(D2,P,T), move(D,P,T), T<n.
```



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:- at(D,P,T), at(D2,P,T), D>D2, move(D,_,T), T<n.
:- D>D2, at(D2,P,T), move(D,P,T), T<n.
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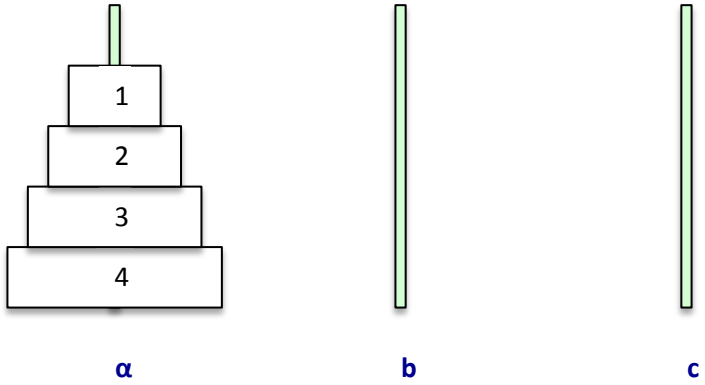

Answer Set

move(1,b,0)	move(1,c,8)
move(2,c,1)	move(2,a,9)
move(1,c,2)	move(1,a,10)
move(3,b,3)	move(3,c,11)
move(1,a,4)	move(1,b,12)
move(2,b,5)	move(2,c,13)
move(1,b,6)	move(1,c,14)
move(4,c,7)	