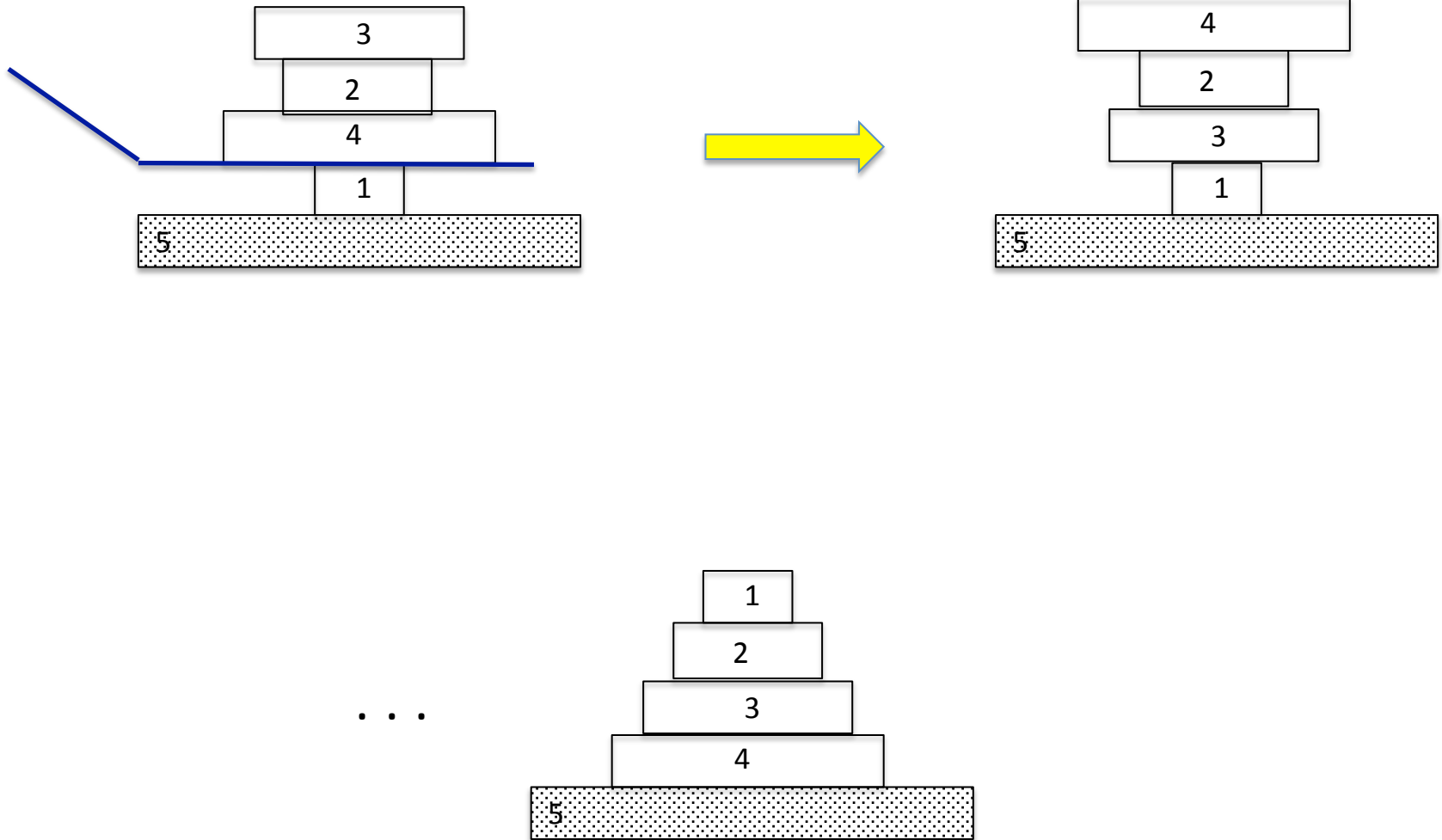


# Εργαστήριο Τεχνητή Νοημοσύνη II

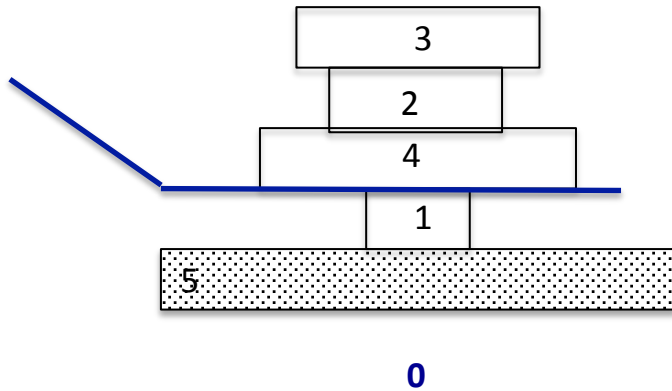
Παύλος Πέππας

Τμήμα Ηλεκτρολόγων Μηχανικών  
και Τεχνολογίας Υπολογιστών

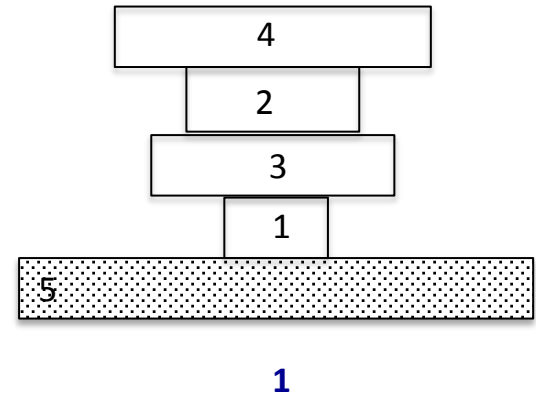
# Πίτες



# Πίτες



flip(4,0)



```
#const m=4.
#const n=3.
on(1,5,0). on(4,1,0). on(2,4,0). on(3,2,0).
```

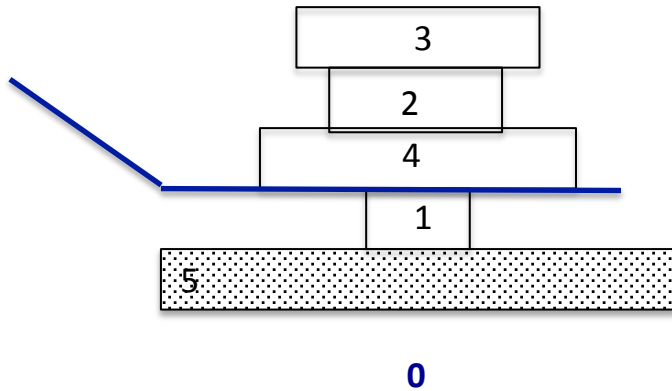
```
% Goal
goal(X,X+1) :- X=1..m.
:- goal(X,Y), not on(X,Y,n).
```

```
1 { flip(X,T): X=1..m } 1 :- T = 0..n-1.
```

```
.
.
.
```

```
#show flip/2.
```

# Λύση



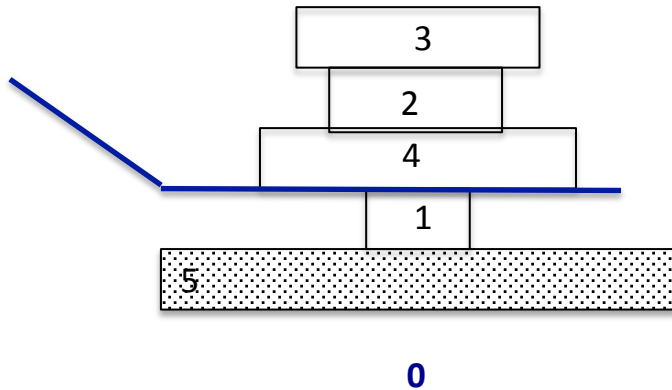
```
#const m=4.  
#const n=3.  
on(1,5,0). on(4,1,0). on(2,4,0). on(3,2,0).
```

```
% Goal  
goal(X,X+1) :- X=1..m.  
:- goal(X,Y), not on(X,Y,n).
```

```
1 { flip(X,T): X=1..m } 1 :- T = 0..n-1.
```

```
% Auxiliary Predicates  
above(X,Y,T) :- on(X,Y,T), T=0..n.  
above(X,Y,T) :- on(X,Z,T), above(Z,Y,T), T = 0..n.  
top(X,T) :- X=1..m, T=0..n, not on(_,X,T).
```

# Λύση



```
#const m=4.
```

```
#const n=3.
```

```
on(1,5,0). on(4,1,0). on(2,4,0). on(3,2,0).
```

```
% Goal
```

```
goal(X,X+1) :- X=1..m.
```

```
:- goal(X,Y), not on(X,Y,n).
```

```
1 { flip(X,T): X=1..m } 1 :- T = 0..n-1.
```

```
% Auxiliary Predicates
```

```
above(X,Y,T) :- on(X,Y,T), T=0..n.
```

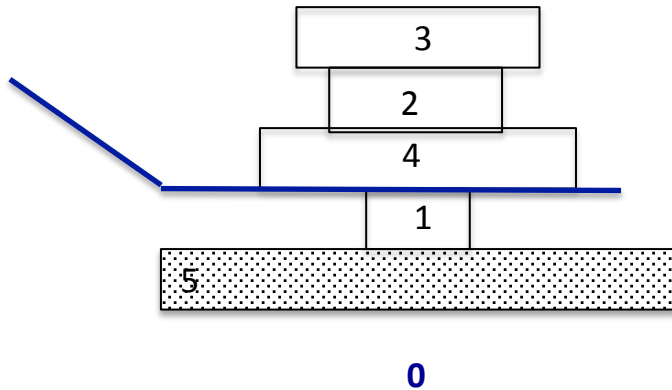
```
above(X,Y,T) :- on(X,Z,T), above(Z,Y,T), T = 0..n.
```

```
top(X,T) :- X=1..m, T=0..n, not on(_,X,T).
```

```
% Effect Axiom
```

```
on(Y,X,T+1) :- flip(Z,T), above(X,Z,T), on(X,Y,T), T = 0..n-1.
```

# Λύση



```
#const m=4.  
#const n=3.  
on(1,5,0). on(4,1,0). on(2,4,0). on(3,2,0).
```

```
% Goal  
goal(X,X+1) :- X=1..m.  
:- goal(X,Y), not on(X,Y,n).
```

```
1 { flip(X,T): X=1..m } 1 :- T = 0..n-1.
```

```
% Auxiliary Predicates  
above(X,Y,T) :- on(X,Y,T), T=0..n.  
above(X,Y,T) :- on(X,Z,T), above(Z,Y,T), T = 0..n.  
top(X,T) :- X=1..m, T=0..n, not on(_,X,T).
```

```
% Effect Axiom  
on(Y,X,T+1) :- flip(Z,T), above(X,Z,T), on(X,Y,T), T = 0..n-1.
```

```
% Frame Axiom  
on(X,Y,T+1) :- on(X,Y,T), flip(Z,T), not above(X,Z,T), T = 0..n-1.  
on(X,Y,T+1) :- on(Z,Y,T), top(X,T), flip(Z,T), T = 0..n-1.
```

```
#show flip/2.
```