Ferdinand Mudjialim

Lab 08

Towers of Hanoi Stack of Activation Records (IN ORDER OF CALLS)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Height | fromPole | toPole | withPole | Return address | Pop order |
| 3 | A | B | C | \* | 15 |
| 2 | A | C | B | \*\* | 7 |
| 1 | A | B | C | \*\* | 3 |
| 0 | A | C | B | \*\* | 1 |
| 0 | C | B | A | \*\*\* | 2 |
| 1 | B | C | A | \*\*\* | 6 |
| 0 | B | A | C | \*\* | 4 |
| 0 | A | C | B | \*\*\* | 5 |
| 2 | C | B | A | \*\*\* | 14 |
| 1 | C | A | B | \*\* | 10 |
| 0 | C | B | A | \*\* | 8 |
| 0 | B | A | C | \*\*\* | 9 |
| 1 | A | B | C | \*\*\* | 13 |
| 0 | A | C | B | \*\* | 11 |
| 0 | C | B | A | \*\*\* | 12 |

(IN ORDER OF POPS)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Height | fromPole | toPole | withPole | Return address | Pop order |
| 0 | A | C | B | \*\* | 1 |
| 0 | C | B | A | \*\*\* | 2 |
| 1 | A | B | C | \*\* | 3 |
| 0 | B | A | C | \*\* | 4 |
| 0 | A | C | B | \*\*\* | 5 |
| 1 | B | C | A | \*\*\* | 6 |
| 2 | A | C | B | \*\* | 7 |
| 0 | C | B | A | \*\* | 8 |
| 0 | B | A | C | \*\*\* | 9 |
| 1 | C | A | B | \*\* | 10 |
| 0 | A | C | B | \*\* | 11 |
| 0 | C | B | A | \*\*\* | 12 |
| 1 | A | B | C | \*\*\* | 13 |
| 2 | C | B | A | \*\*\* | 14 |
| 3 | A | B | C | \* | 15 |

---------------------------------------------------- CODE ON NEXT PAGE ---------------------------------------------------------

def moveTower(height,fromPole, toPole, withPole): #towersofhanoi.py

if height >= 1:

moveTower(height-1,fromPole,withPole,toPole) \*\*

moveDisk(fromPole,toPole)

moveTower(height-1,withPole,toPole,fromPole) \*\*\*

def moveDisk(fp,tp):

print("moving disk from",fp,"to",tp)

moveTower(3,"A","B","C") **\***

**OUTPUT**

**moving disk from A to B**

**moving disk from A to C**

**moving disk from B to C**

**moving disk from A to B**

**moving disk from C to A**

**moving disk from C to B**

**moving disk from A to B**

