CS 61A

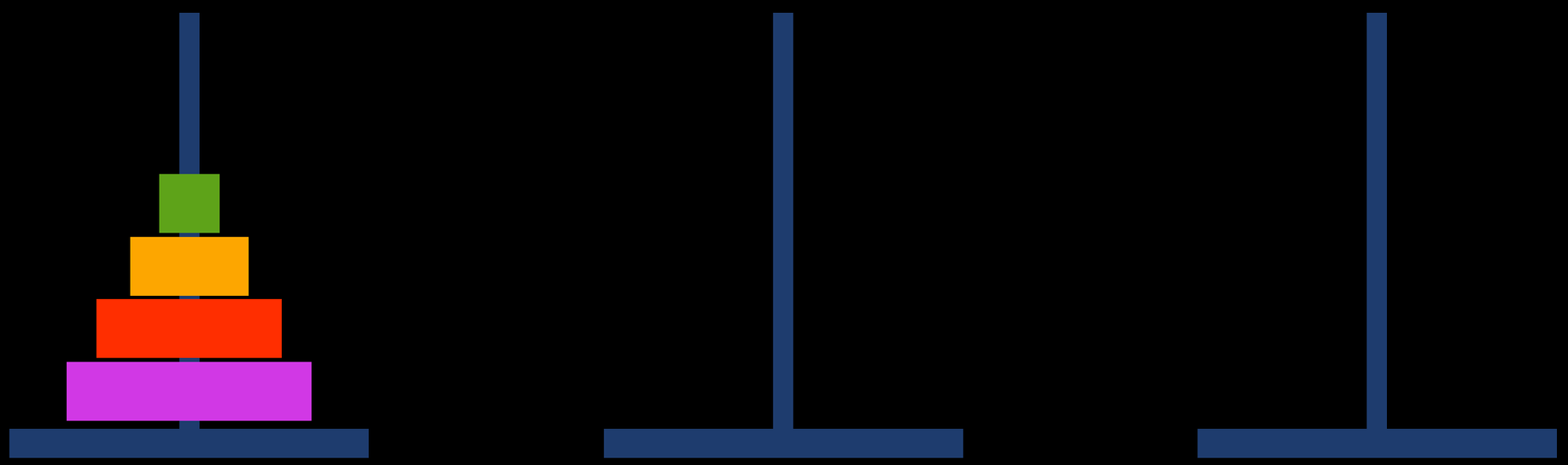
TOWERS OF HANOI

Slides prepared by Suraj Rampure

THE PROBLEM

Need to move **`n`** disks from the rod
`start` to the rod **`end`**

`1 <= start, end <= 3`



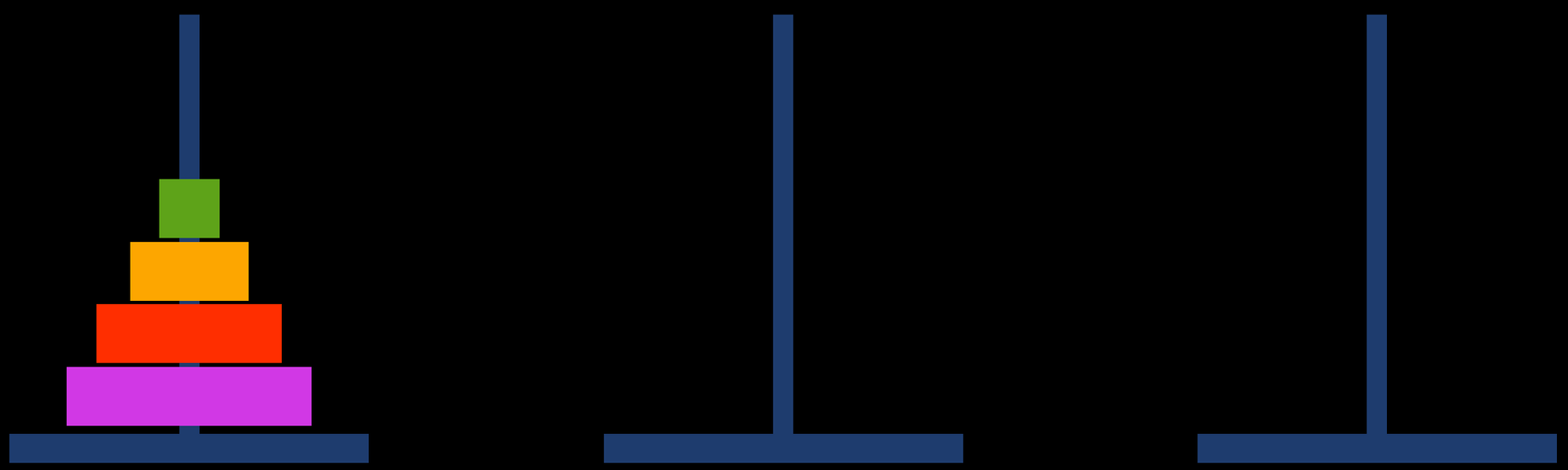
THE PROBLEM

Need to move **`n`** disks from the rod
`start` to the rod **`end`**
`1 <= start, end <= 3`

A **move** is defined as taking the top disk
of one rod and moving it to the top of
another rod

THE RULES

Only **one** disk can
be moved at a time



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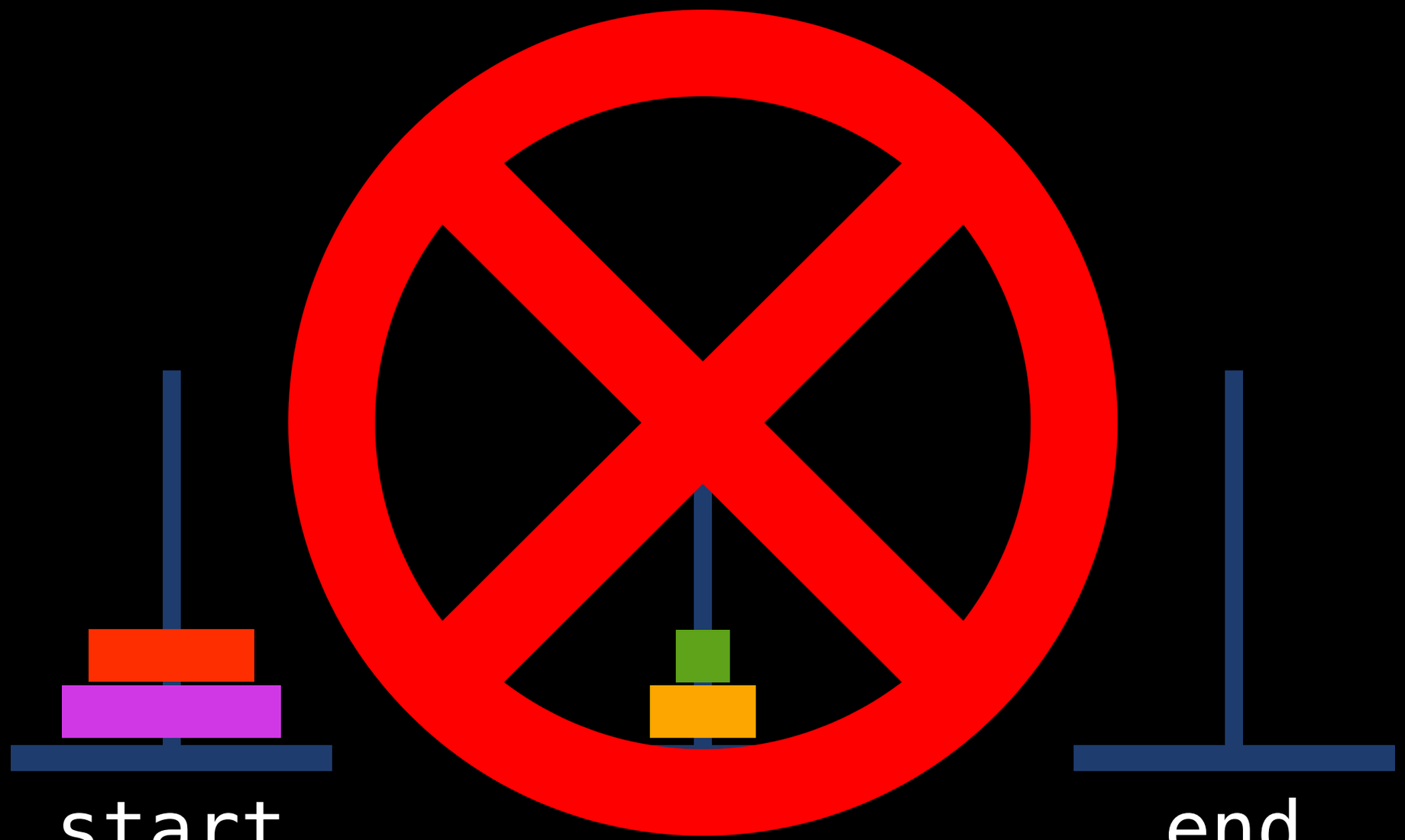
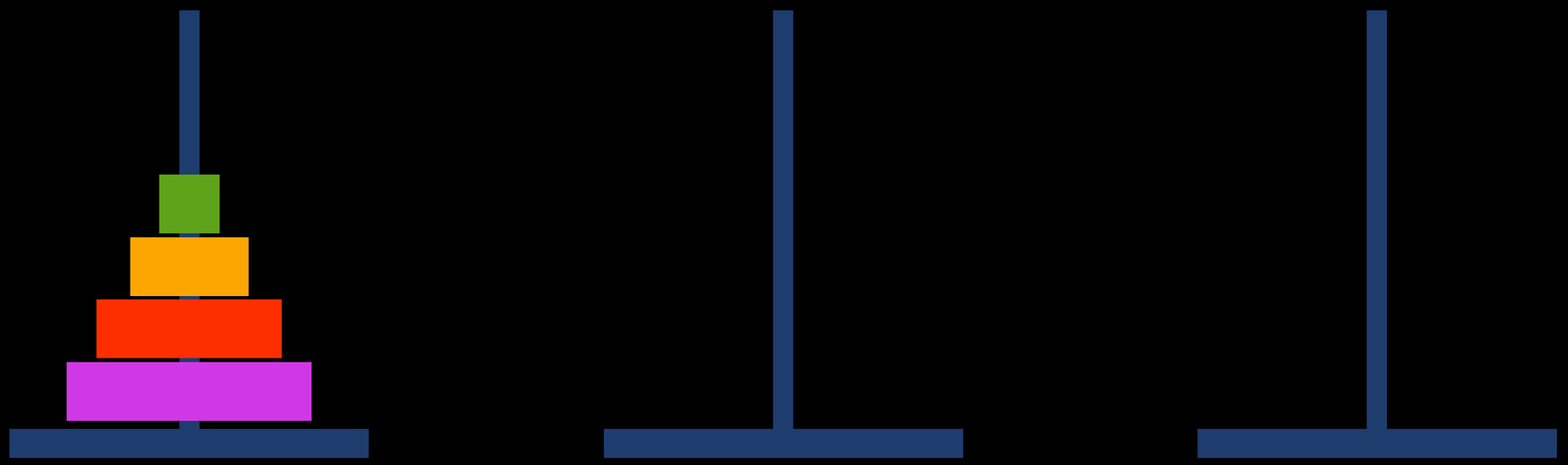


THE RULES

No disk can be placed
atop a smaller disk



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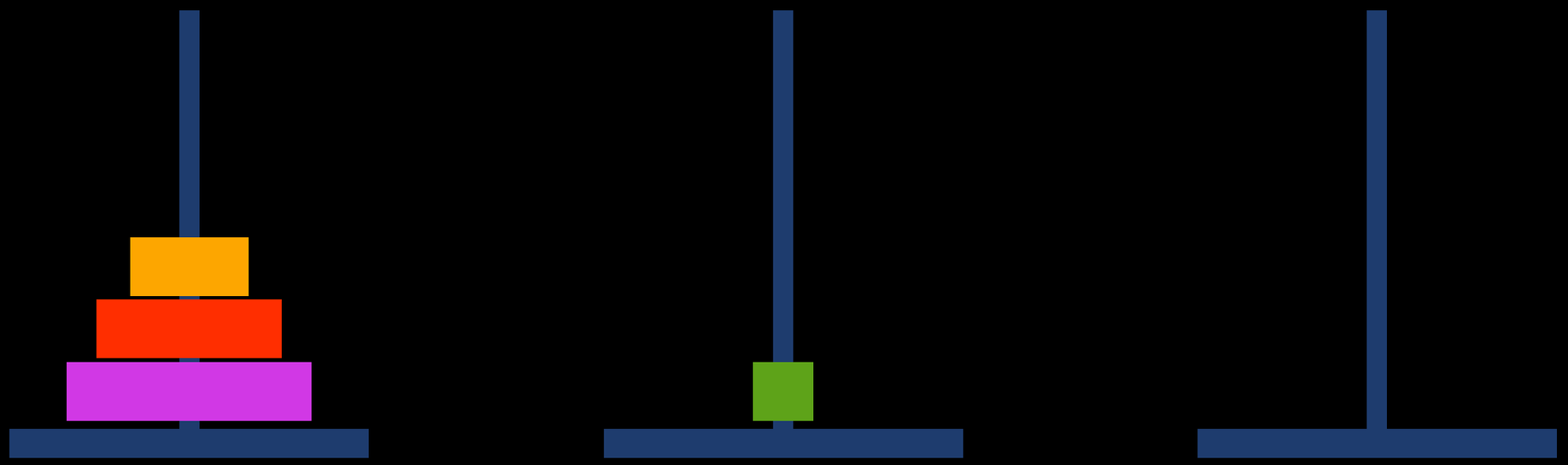

THE RULES

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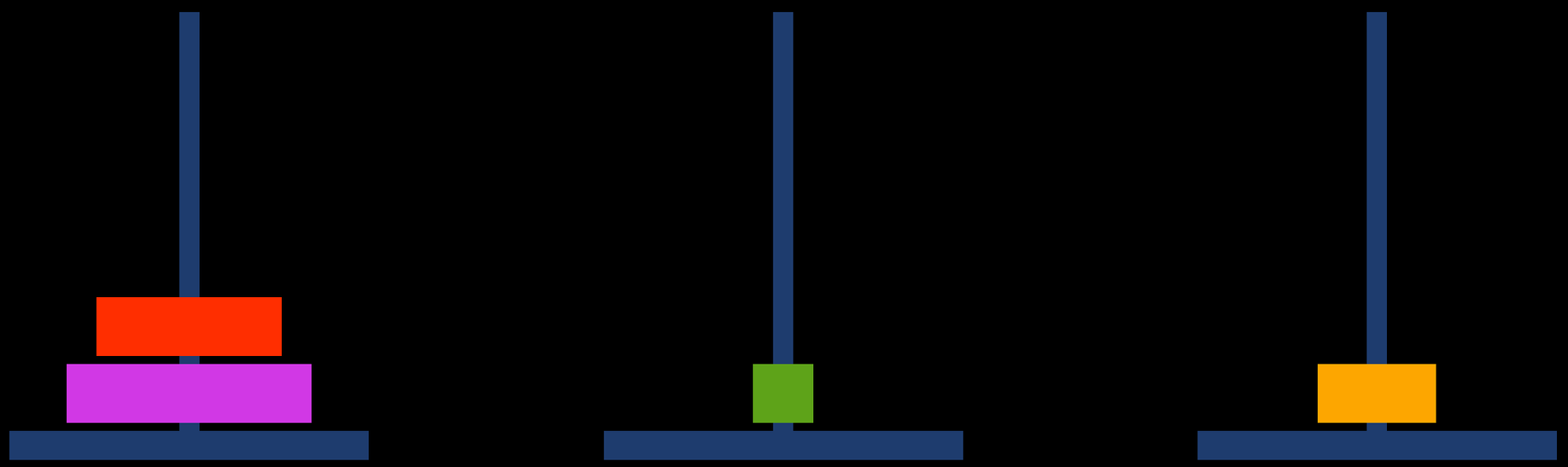

THE RULES

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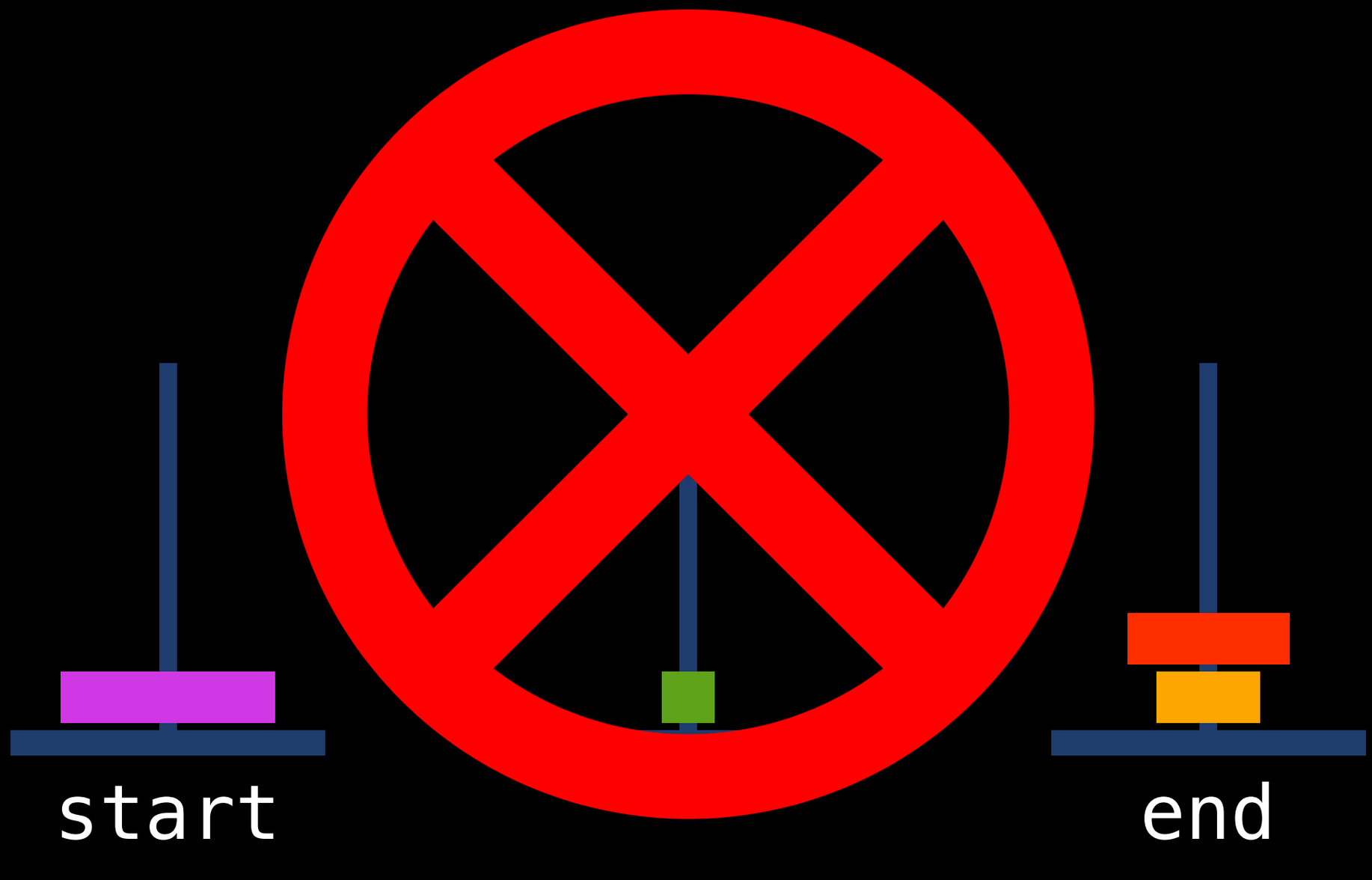
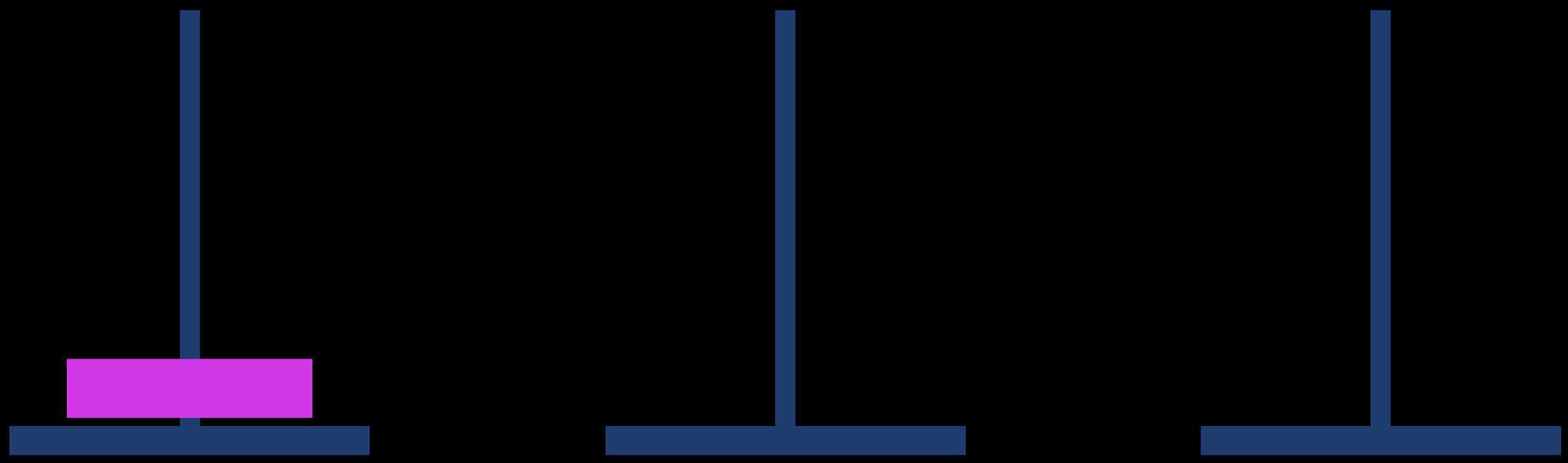


THE GOAL

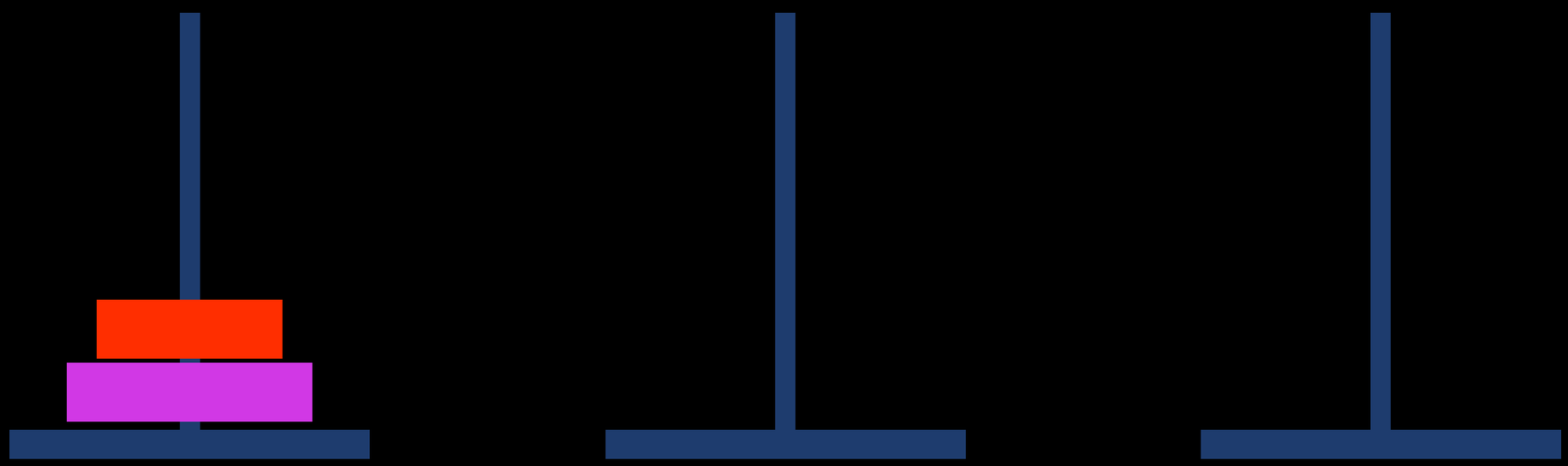
Write a function **`move_stack`**
that outputs each step required to move
`n` disks from the rod **`start`** to the rod **`end`**

Break into smaller problems... **RECURSION**

n = 1



n = 2



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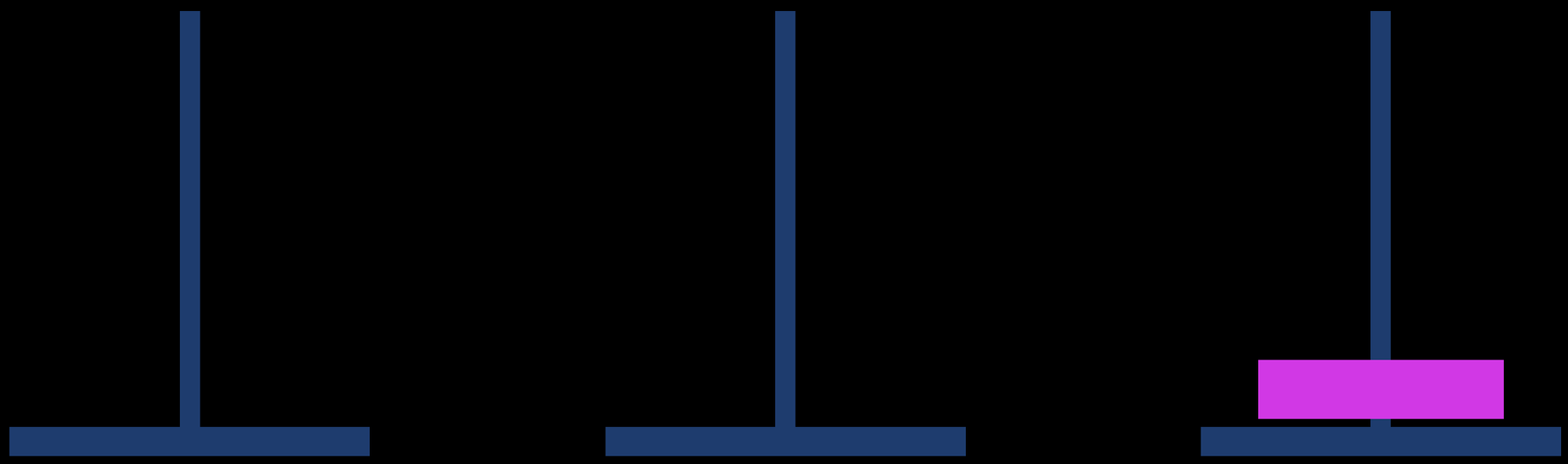

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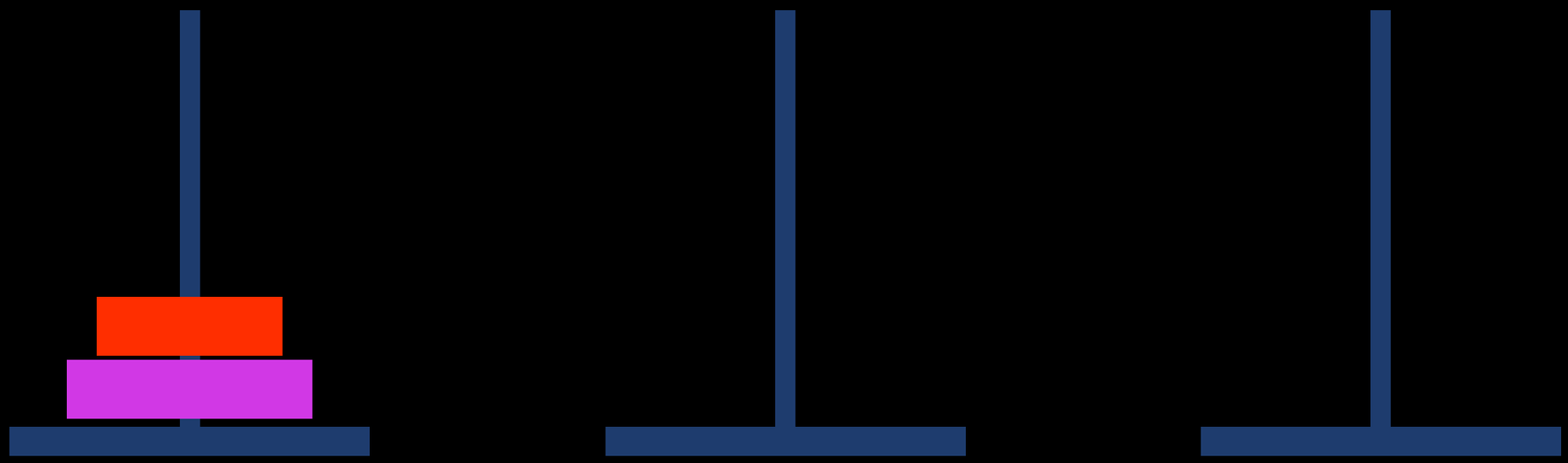

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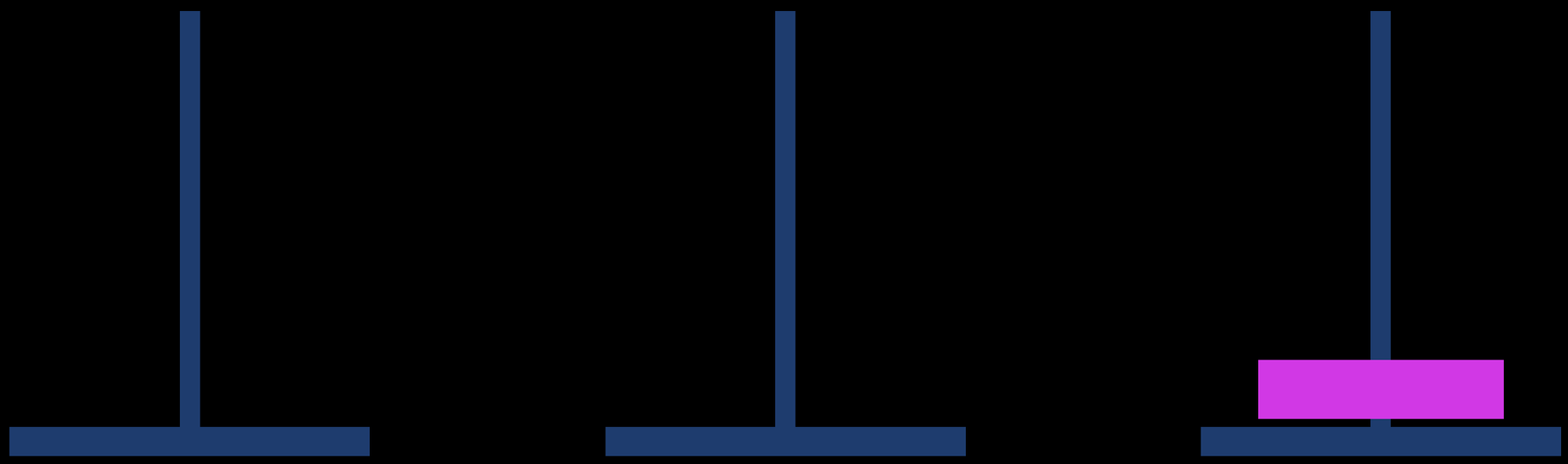

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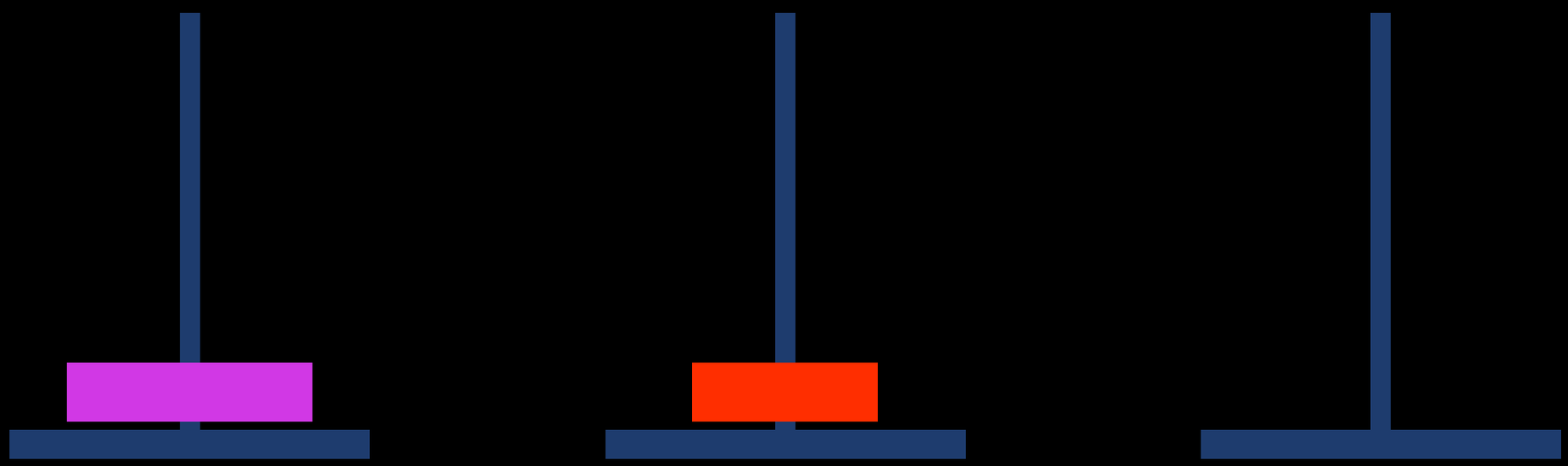

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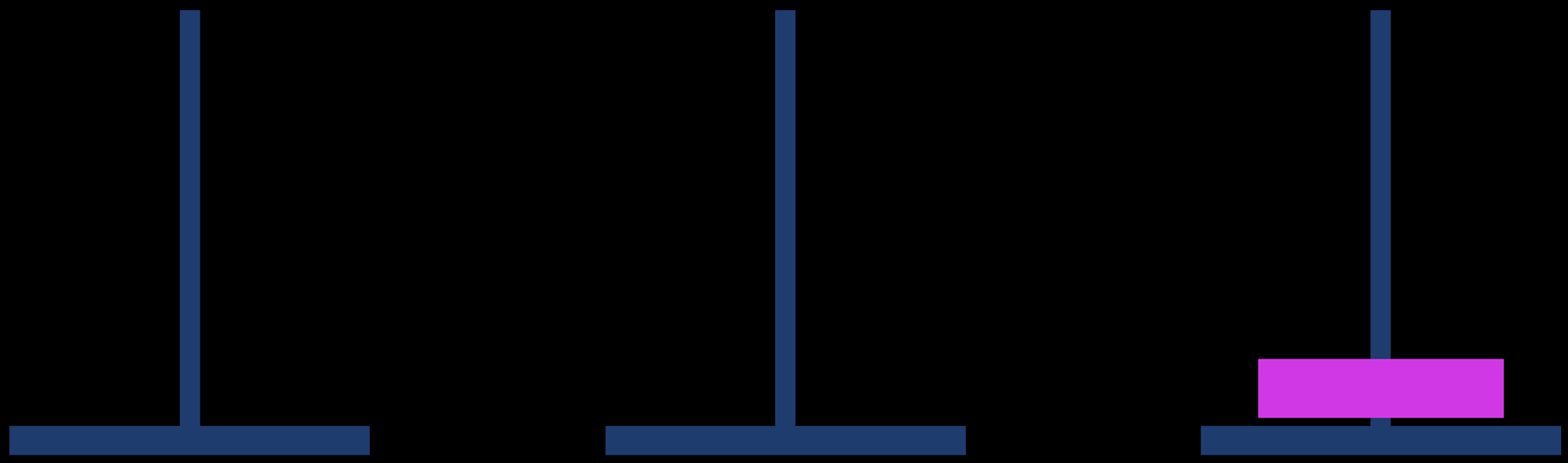

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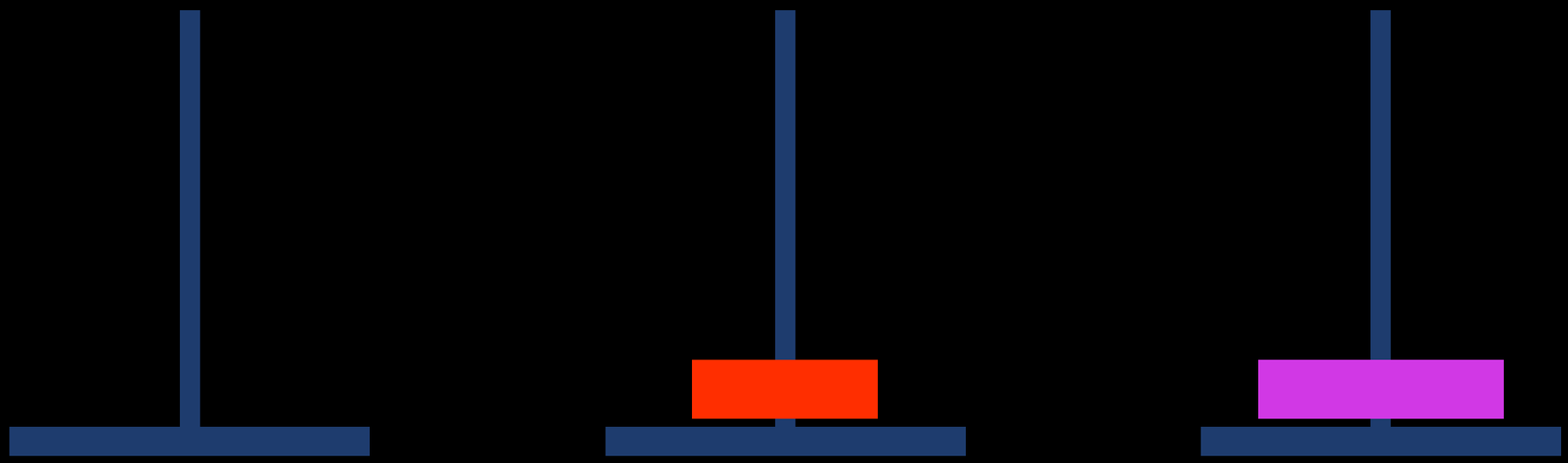

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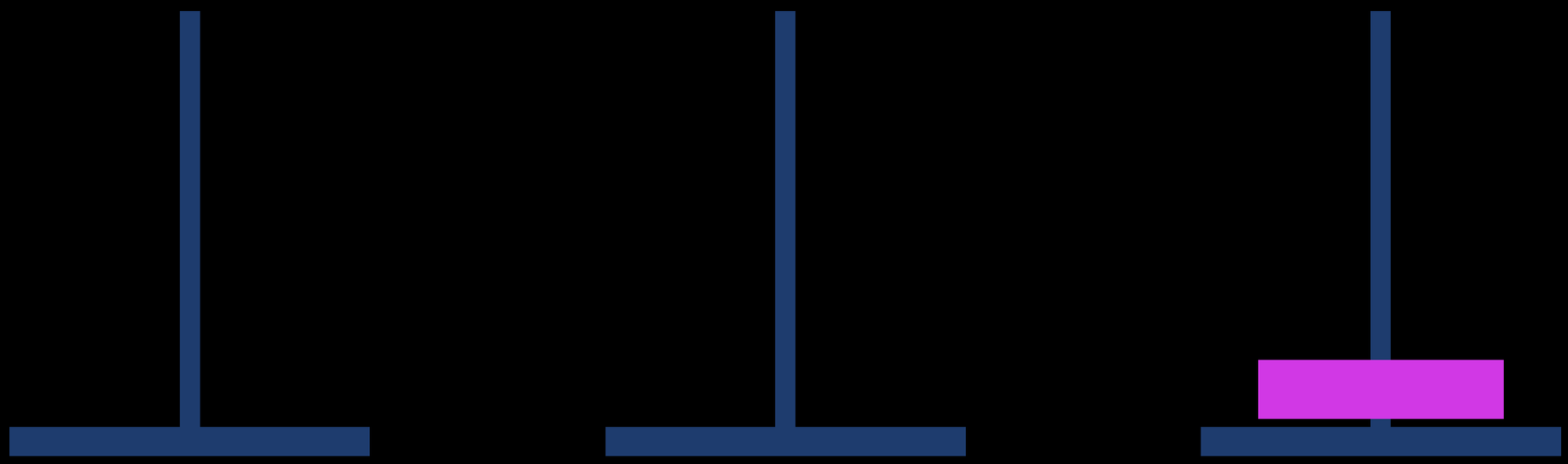
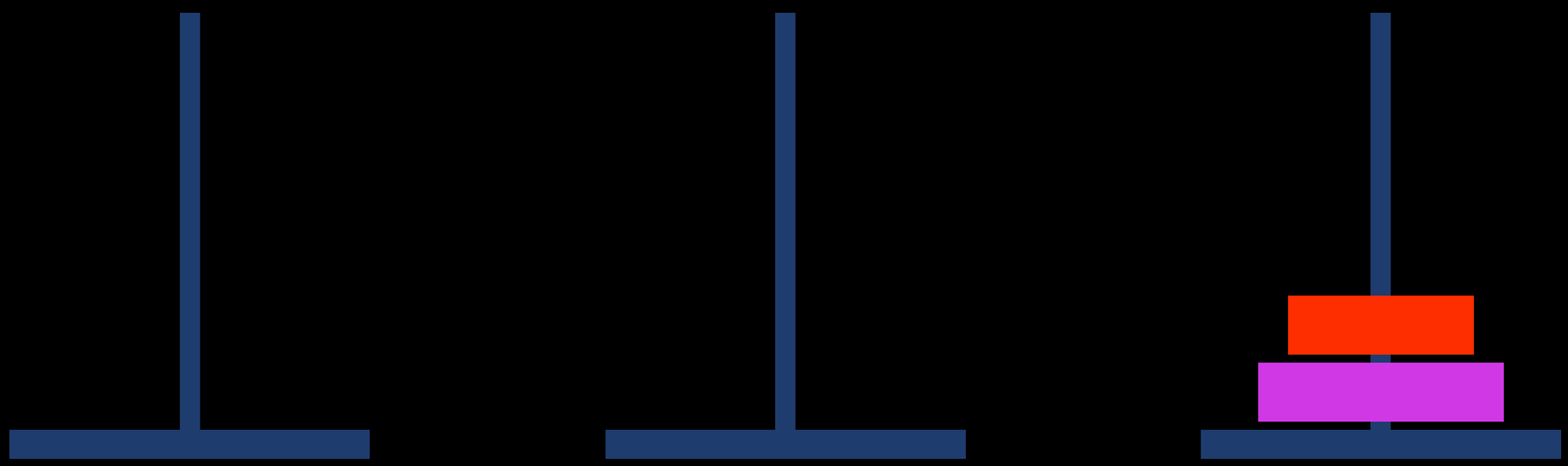
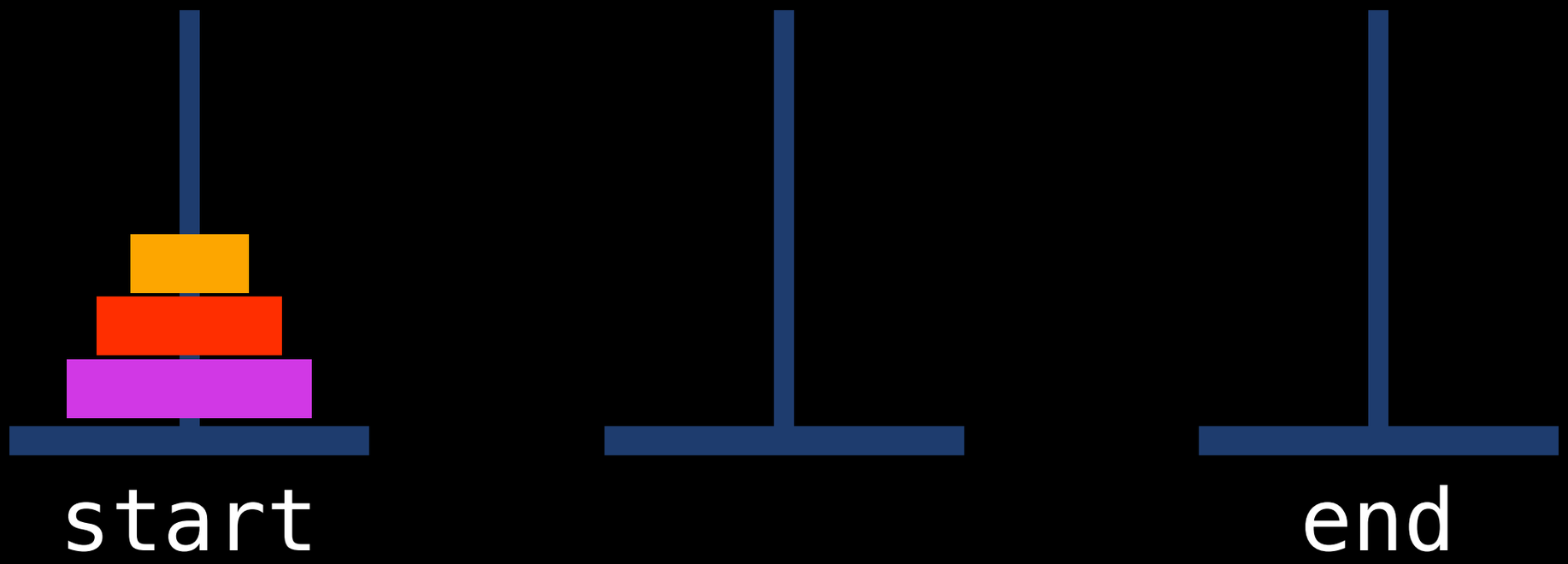


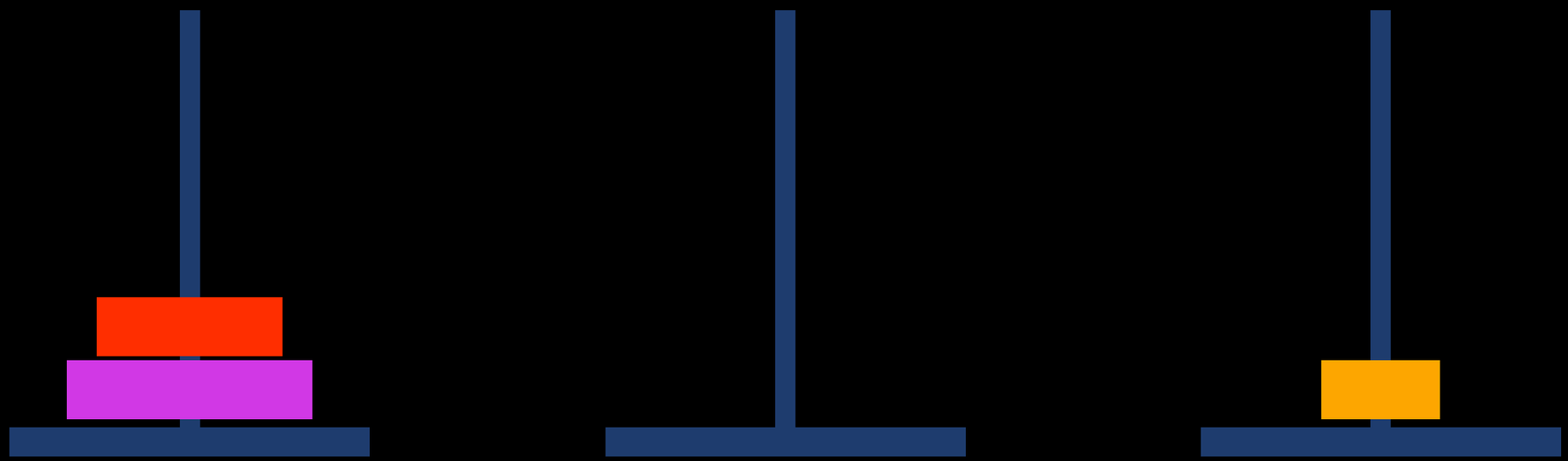
n = 2



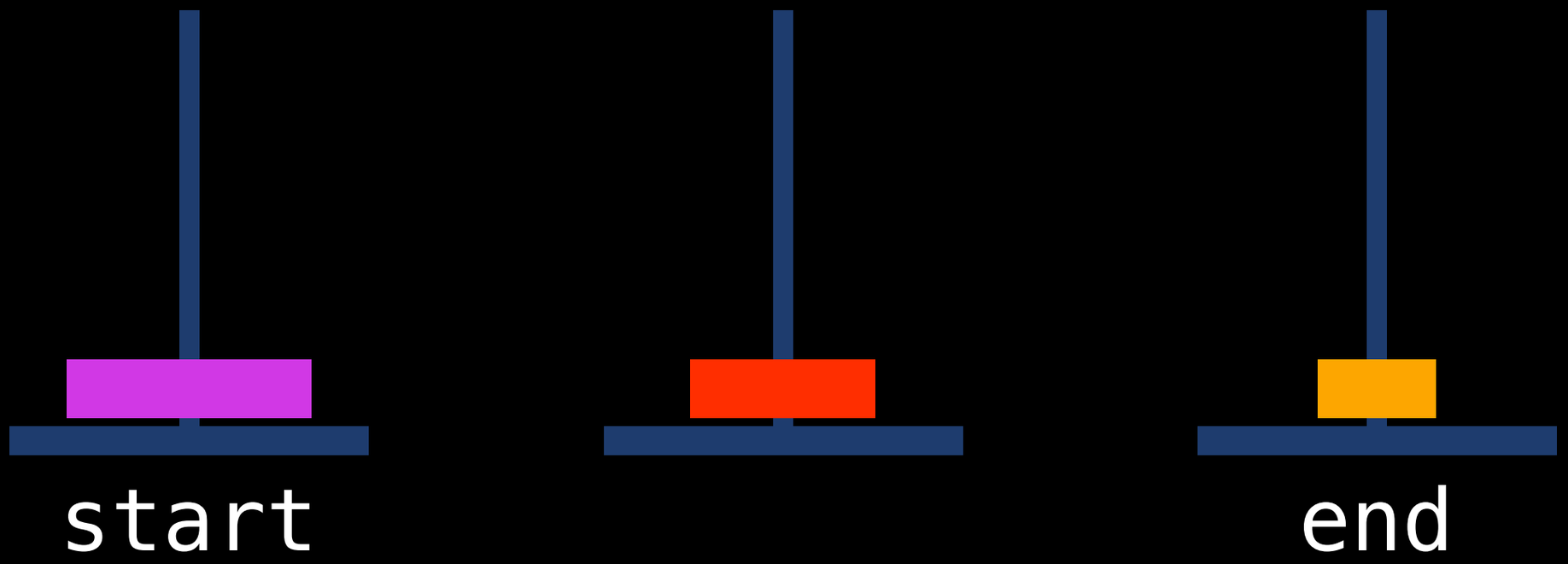
n = 3



n = 3

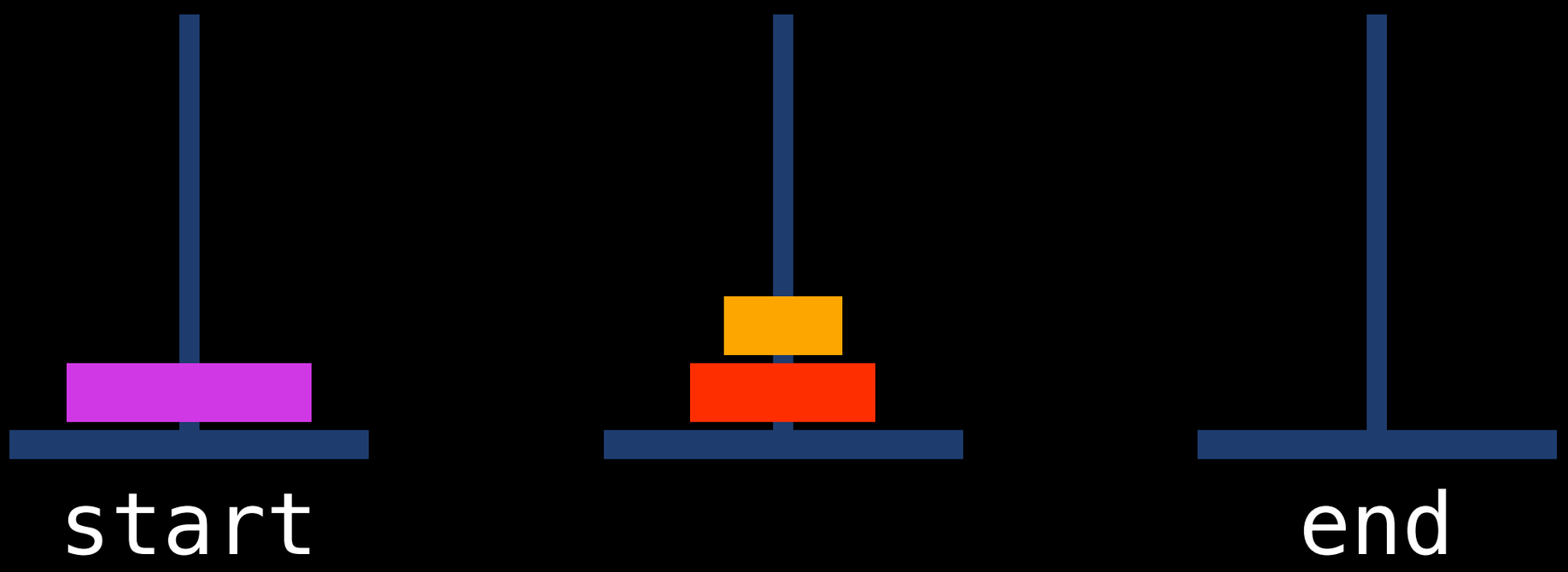


n = 3



`n = 3`

This is an important step in the solution. **Why**?



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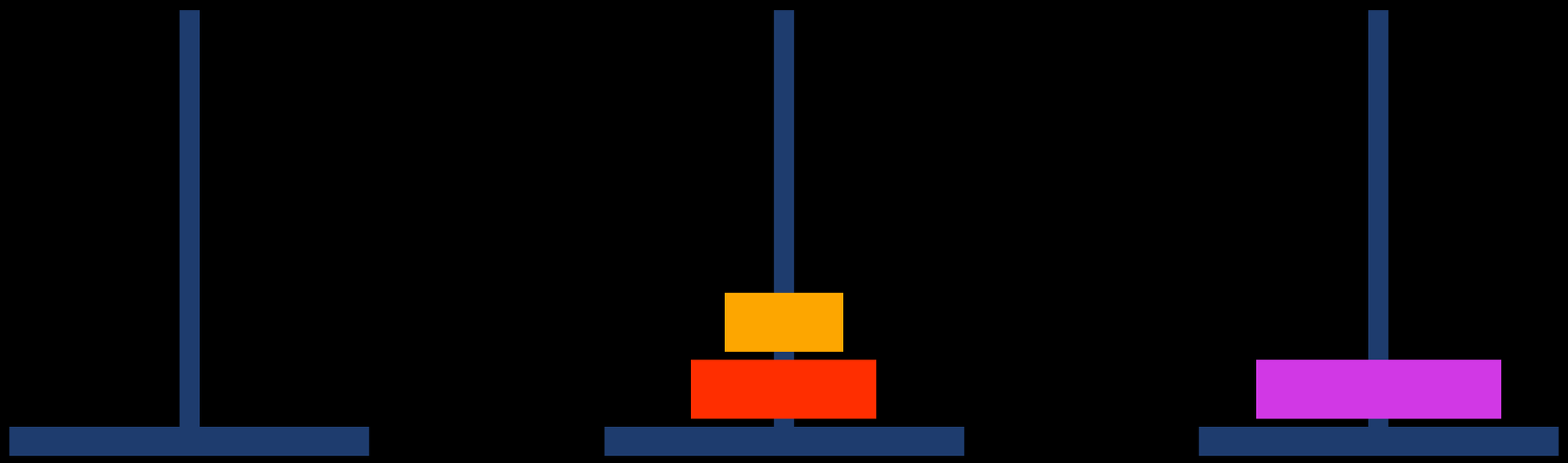

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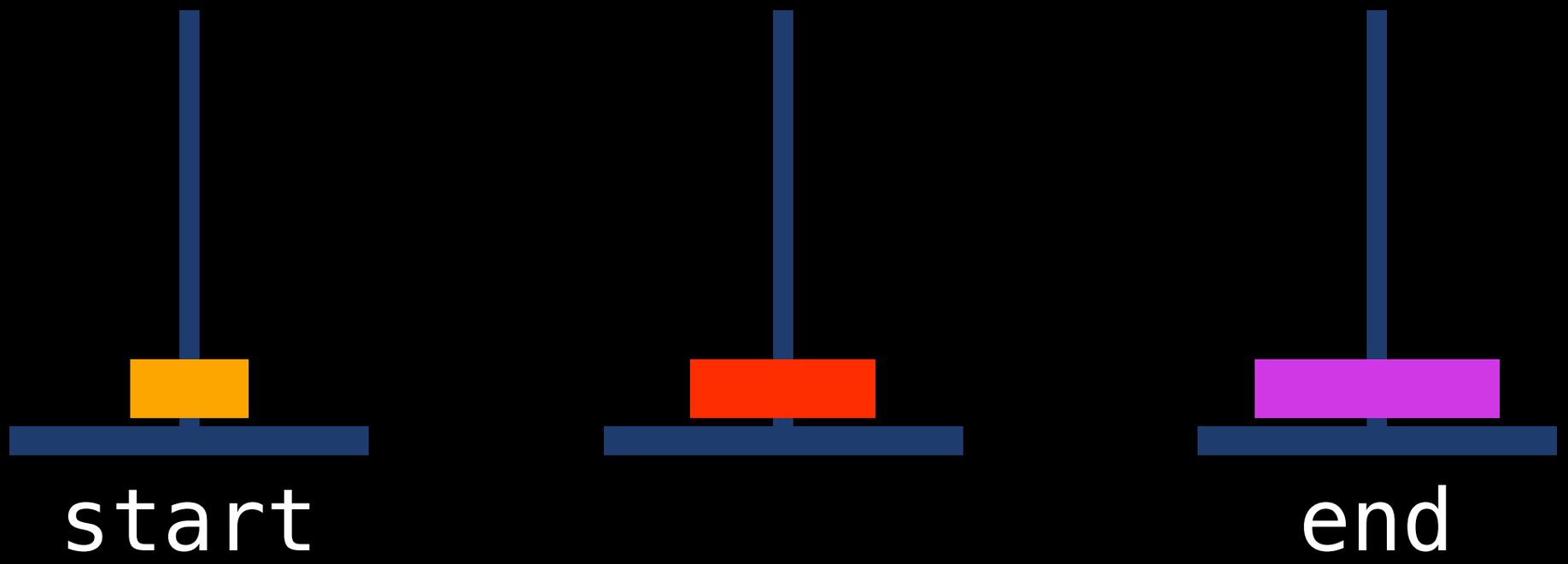

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