

DSA through C++

Tower of hanoi



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Agenda

- ① Tower of Hanoi
- ② Solution

TOH

7

$A \rightarrow C$

$A \rightarrow B$

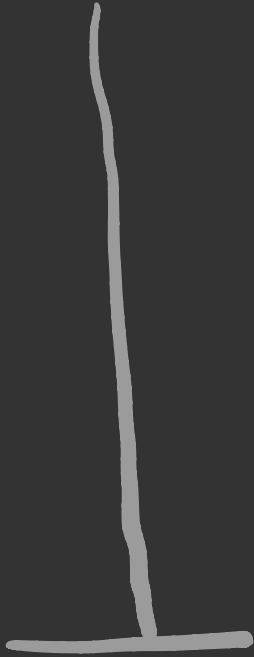
$C \rightarrow B$

$A \rightarrow C$

$B \rightarrow A$

$B \rightarrow C$

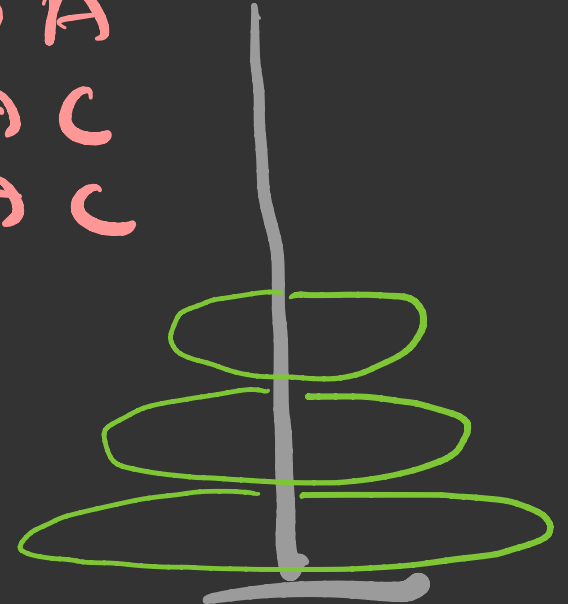
$A \rightarrow C$



A



B



C

$A \rightarrow B$

$A \rightarrow C$

$B \rightarrow C$

$A \rightarrow B$

$C \rightarrow A$

$C \rightarrow B$

$A \rightarrow B$

$A \rightarrow C$

$B \rightarrow C$

$B \rightarrow A$

$C \rightarrow A$

$B \rightarrow C$

$A \rightarrow B$

$A \rightarrow C$

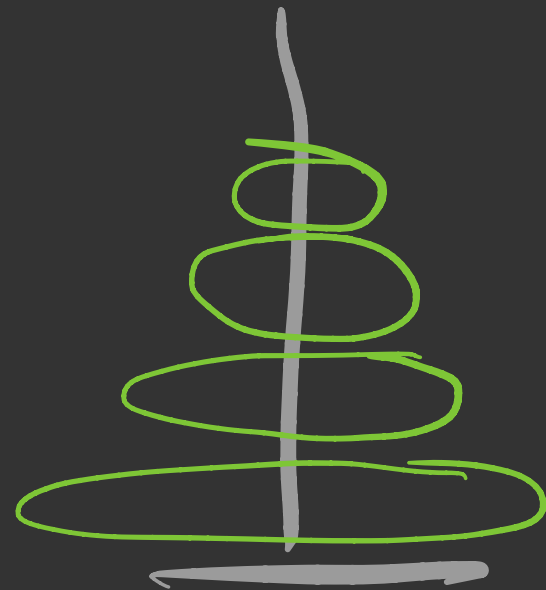
$B \rightarrow C$



A



B



C

n

3

4

5

6

7

⋮

64

moves

7

$$2^3 - 1$$

15

$$2^4 - 1$$

31

$$2^5 - 1$$

63

$$2^6 - 1$$

127

$$2^7 - 1$$

64

$$2 - 1$$

```
void TOH (int n, char Beg, char Aux, char End)
{
    if (n > 0)
    {
        TOH (n-1, Beg, End, Aux);
        cout << "\n" << Beg << " ->" << End;
        TOH (n-1, Aux, Beg, End)
    }
}
```