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Leetcode Easy 4

- Phone interview Problems
- Good Practice Problems

Leetcode -1688

Easy

Count Of Matches in Tournament...

Company :-

Microsoft

1688. Count of Matches in Tournament

Hint

Easy 1.1K 174

Companies

You are given an integer `n`, the number of teams in a tournament that has strange rules:

- If the current number of teams is **even**, each team gets paired with another team. A total of `n / 2` matches are played, and `n / 2` teams advance to the next round.
- If the current number of teams is **odd**, one team randomly advances in the tournament, and the rest gets paired. A total of `(n - 1) / 2` matches are played, and `(n - 1) / 2 + 1` teams advance to the next round.

Return *the number of matches played in the tournament until a winner is decided.*

Example :- n = 7

Output = 6

7 → odd → matches = (7-1)/2 = 3

(7-1)/2 + 1 = 4 → even → matches = (4/2) = 2

(4/2) = 2 → even → mate = 2/2 = 1

2/2=1

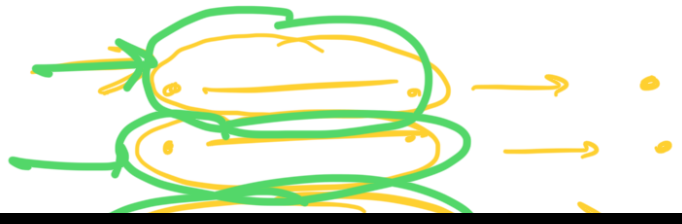
Code:

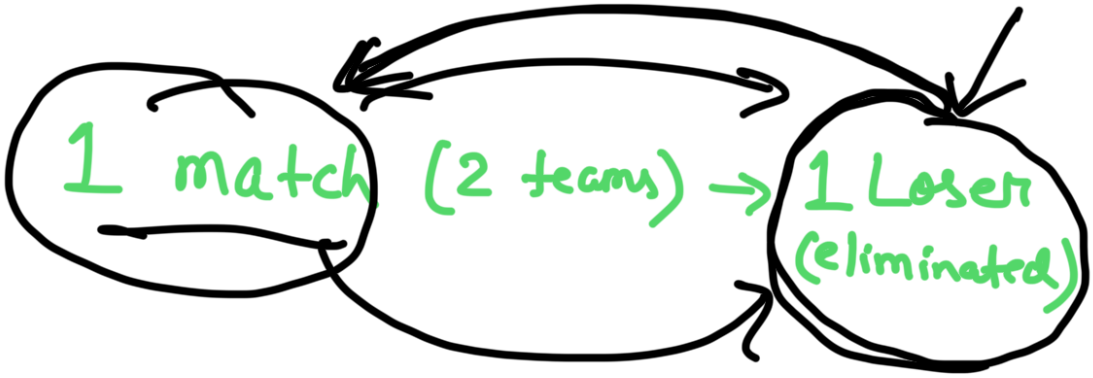
```
while (n > 1) {
    if (n % 2 == 0) { // Even
        matches += n/2;
        n = n/2;
    } else {
        matches += (n-1)/2
        n = (n-1)/2 + 1;
    }
}
ret result;
```

O(log(n))

O(1)

n (Even).

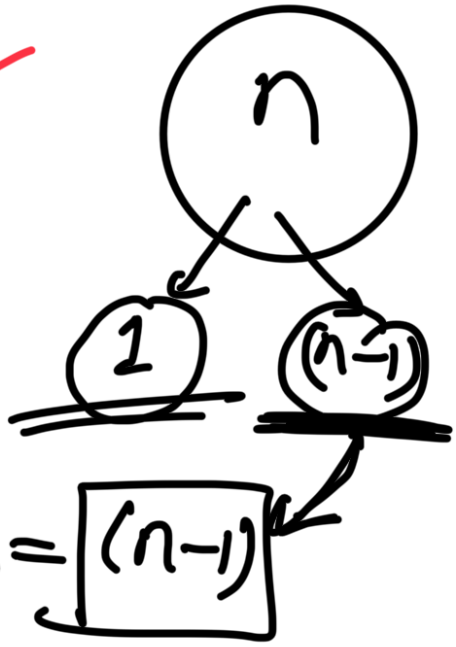




total "n" teams

Winner = 1 ✓

eliminated = (n-1)



matches = (n-1)

return (n-1);

n=5 → 4

$n=7 \rightarrow 6$

$n=10 \rightarrow 9$