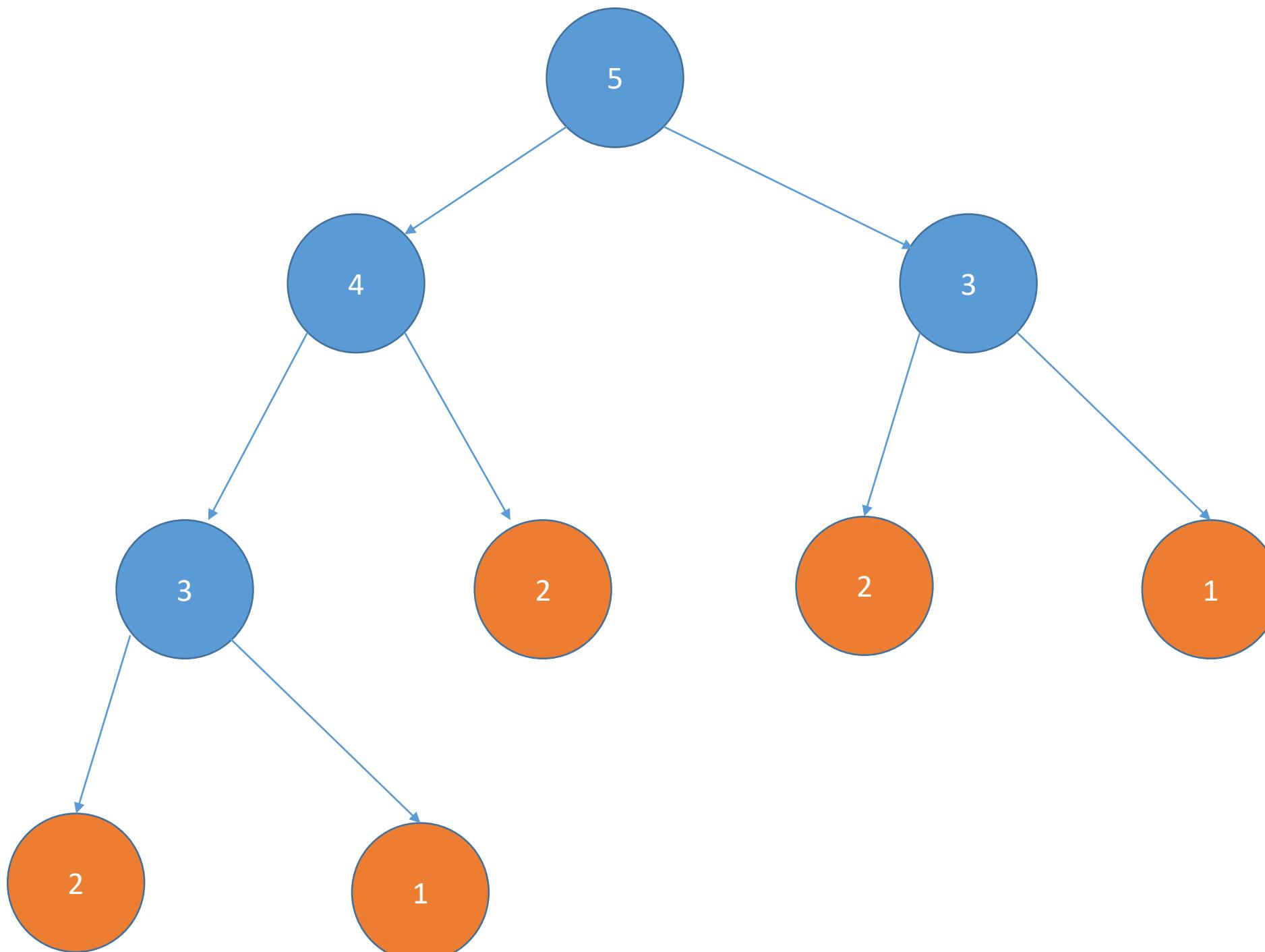


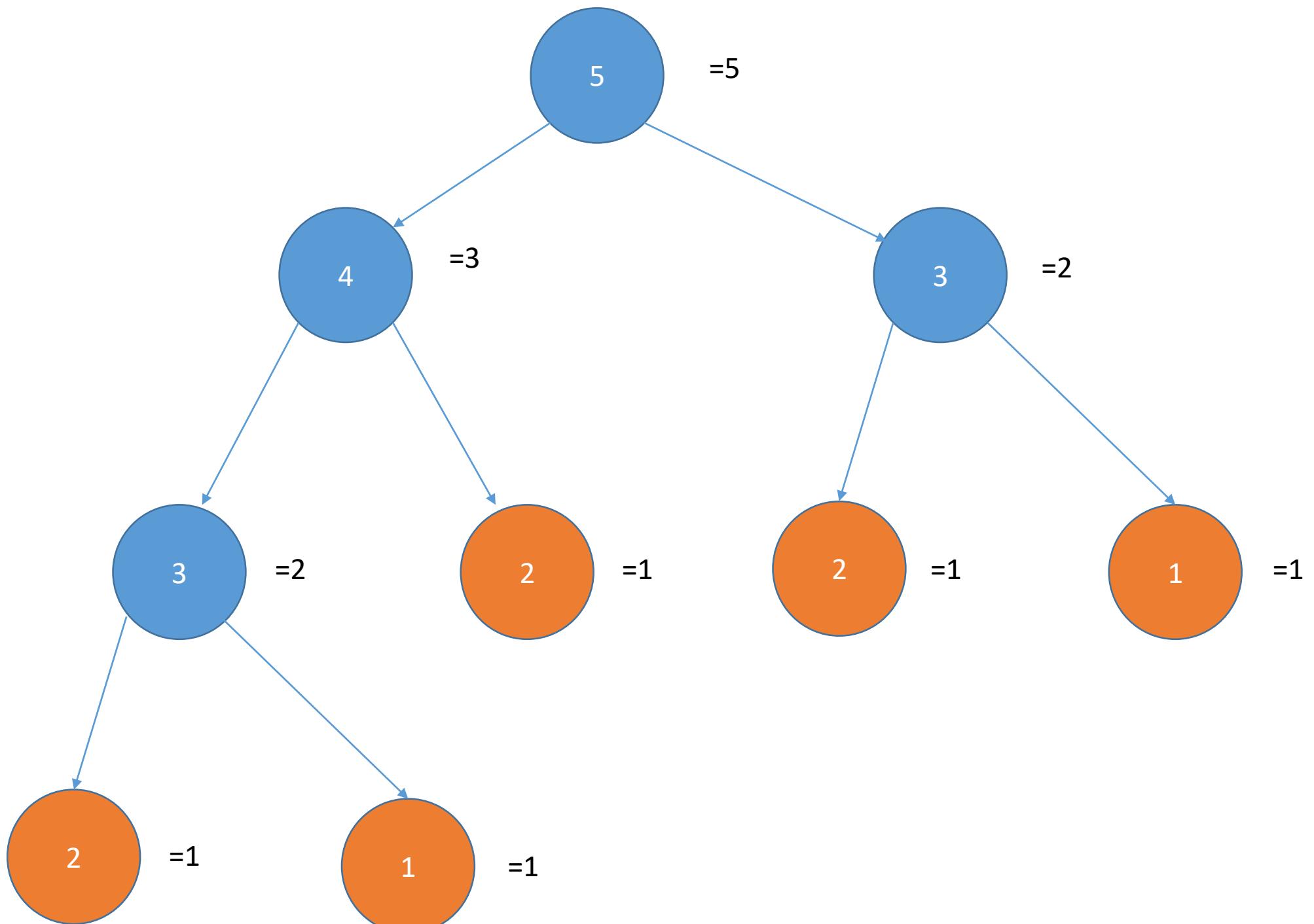
# Fibonacci Dynamic Programming

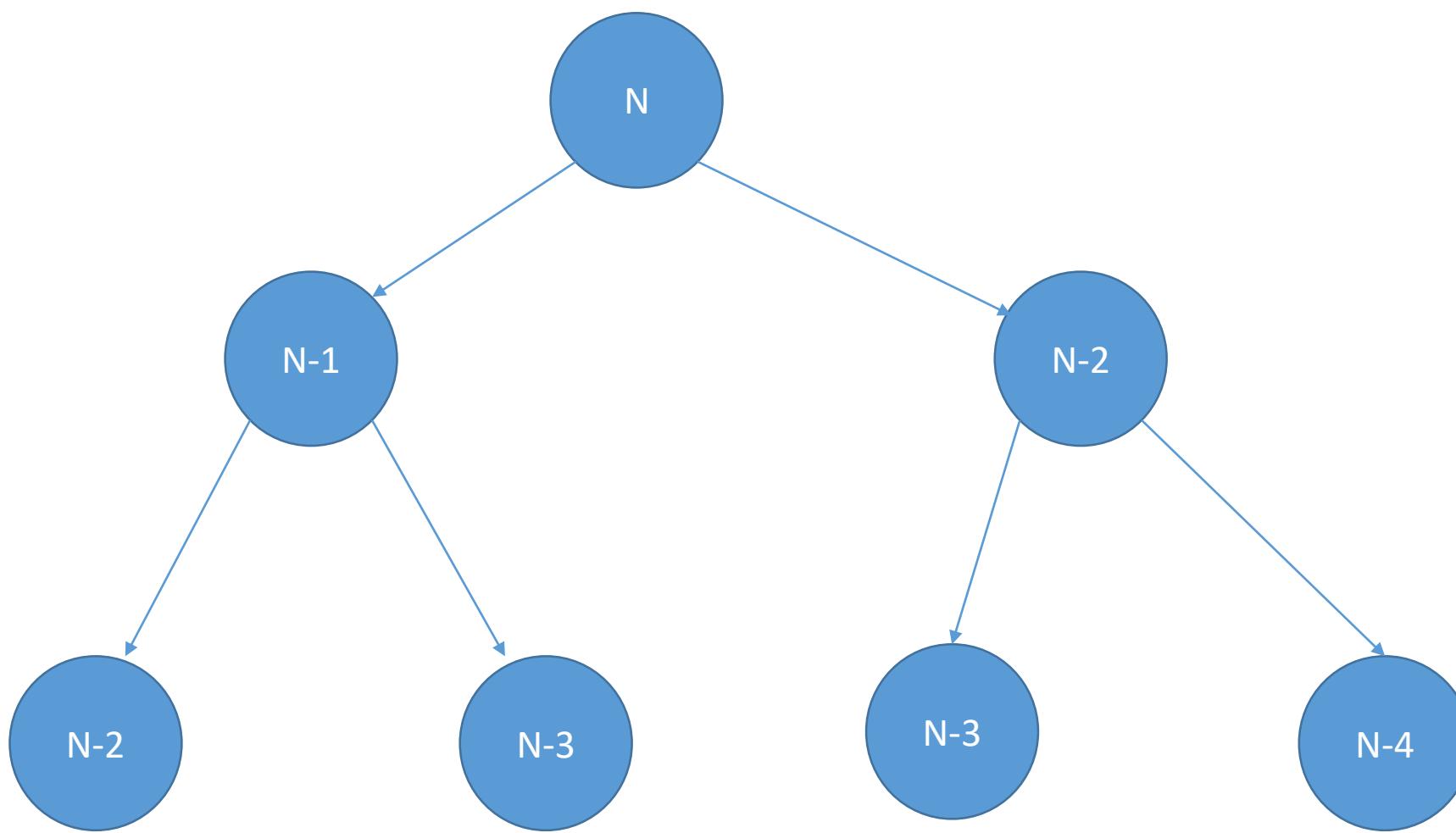
1, 1, 2, 3, 5, 8, 13, 21, 34, ...

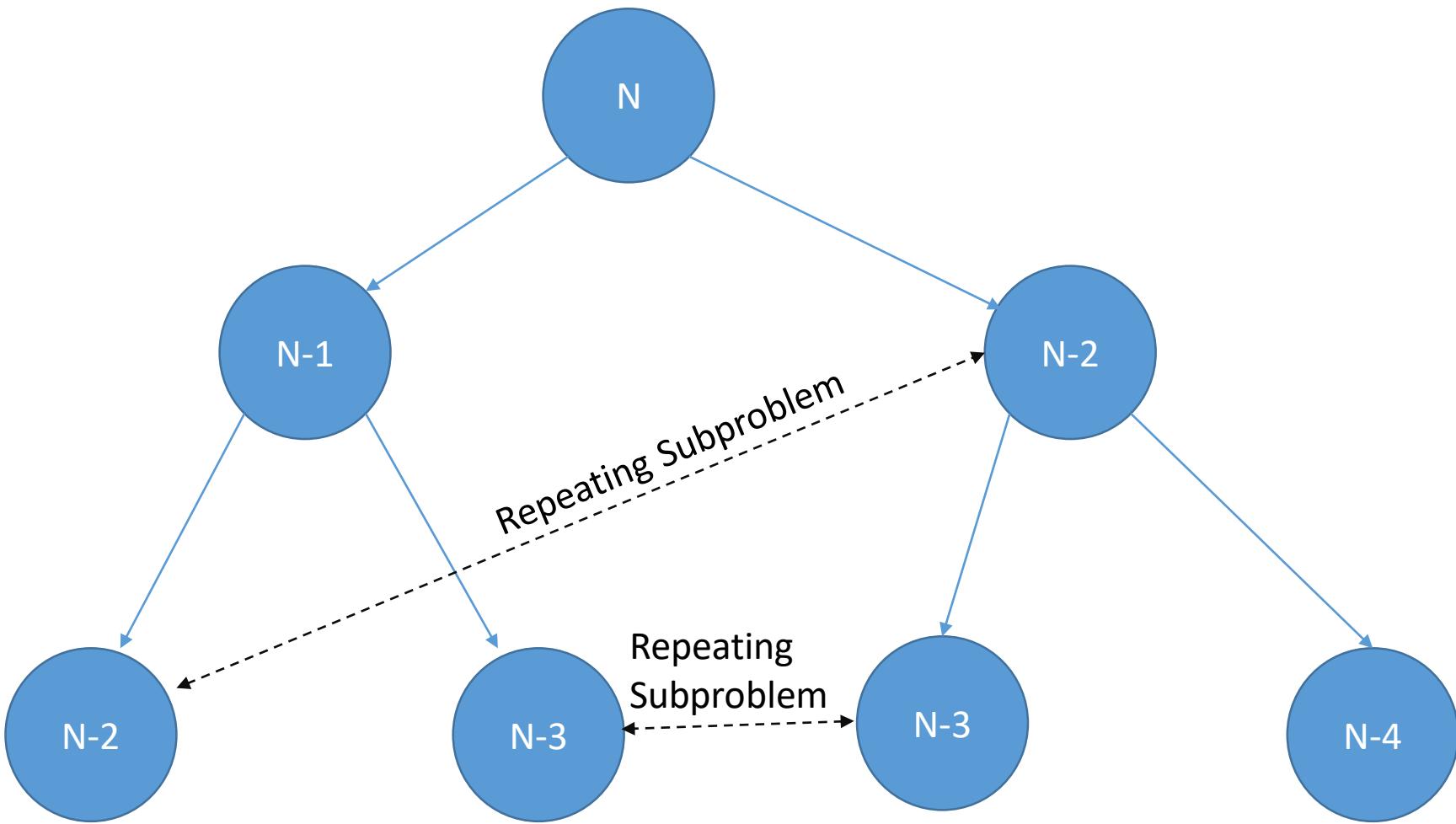
$$\text{Fibo}(n) = \text{Fibo}(n-1) + \text{Fibo}(n-2)$$

Nth Fibonacci number is sum of (n-1)th Fibonacci number and (n-2)th Fibonacci number









# Code

```
int dp[100000];// initialize this array with -1
int get_fibonacci(int n)
{
    if(n==1||n==2)
        return 1;
    if(dp[n]!=-1)
        return dp[n];
    return dp[n]=get_fibonacci(n-1)+get_fibonacci(n-2);
}
```

# Code

```
#define M 100000007
int dp[100000];// initialize this array with -1
int get_fibonacci(int n)
{
    if(n==1 || n==2)
        return 1;
    if(dp[n]!=-1)
        return dp[n];
    return dp[n]=( get_fibonacci(n-1) + get_fibonacci(n-2) ) % M ;
}
```