

## Competetive Programming

### Week2-Monday

### Assignment-2.4

### Dynamic Programming

#### Code:

```
import java.util.Scanner;

public class FibonacciMemoization {

    static int[] memo;

    static int fib(int n) {

        if (n == 0)

            return 0;

        if (n == 1)

            return 1;

        if (memo[n] != -1)

            return memo[n];

        memo[n] = fib(n - 1) + fib(n - 2);

        return memo[n];

    }

    public static void main(String[] args) {

        Scanner sc = new Scanner(System.in);

        int n = sc.nextInt();

        memo = new int[n + 1];

        for (int i = 0; i <= n; i++)

            memo[i] = -1;

        System.out.println(fib(n));

        sc.close();

    }

}
```

FibonacciMemoization.java

Run

Share

```
1- import java.util.Scanner;
2- public class FibonacciMemoization {
3     static int[] memo;
4-     static int fib(int n) {
5         if (n == 0)
6             return 0;
7         if (n == 1)
8             return 1;
9         if (memo[n] != -1)
10            return memo[n];
11        memo[n] = fib(n - 1) + fib(n - 2);
12        return memo[n];
13    }
14-     public static void main(String[] args) {
15         Scanner sc = new Scanner(System.in);
16         int n = sc.nextInt();
17         memo = new int[n + 1];
18         for (int i = 0; i <= n; i++)
19             memo[i] = -1;
20         System.out.println(fib(n));
21         sc.close();
22     }
23 }
24
```

Output

Clear

10  
55  
=== Code Execution Successful ===