

98. Dynamic Program

PROGRAM:-

```
def fibonacci(n):
```

```
    if n <= 1:  
        return n
```

```
    # Initialize the base cases
```

```
    dp = [0] * (n + 1)
```

```
    dp[0] = 0
```

```
    dp[1] = 1
```

```
    # Fill the dp array
```

```
    for i in range(2, n + 1):
```

```
        dp[i] = dp[i - 1] + dp[i - 2]
```

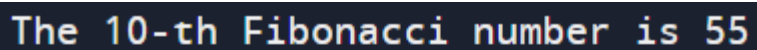
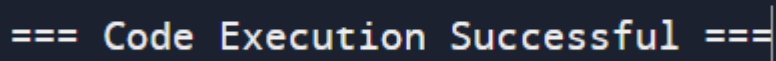
```
    return dp[n]
```

```
# Example usage:
```

```
n = 10
```

```
print(f"The {n}-th Fibonacci number is {fibonacci(n)}")
```

OUTPUT:-

A screenshot of a terminal window with a dark background. The text "The 10-th Fibonacci number is 55" is displayed in a light blue, monospaced font.A screenshot of a terminal window with a dark background. The text "=== Code Execution Successful ===" is displayed in a light blue, monospaced font, followed by a vertical cursor line.

TIME COMPLEXITY:- $O(n)$