101. Longest Palindromic Subsequence

AIM: To find the length of ongest palindromic subsequence

PROGRAM:

```
def longest_palindromic_subsequence(s):
    n = len(s)
    dp = [[0] * n for _ in range(n)]
    for i in range(n):
        dp[i][i] = 1
    for length in range(2, n + 1):  # length of subsequence
        for i in range(n - length + 1):
            j = i + length - 1
            if s[i] == s[j]:
                dp[i][j] = dp[i+1][j-1] + 2
            else:
                dp[i][j] = max(dp[i+1][j], dp[i][j-1])

    return dp[0][n-1]
s = "bbbab"
print("Length of the longest palindromic subsequence:", longest_palindromic_subsequence(s))
```

OUTPUT:

```
Length of the longest palindromic subsequence:
    4
```

TIME COMPLEXITY: O(n^2)