**1.14** A robot is located at the top-left corner of a m×n grid .The robot can only move either down or right at any point in time. The robot is trying to reach the bottom-right corner of the grid. How many possible unique paths are there?

**AIM**:

To calculate the number of unique paths for a robot moving from the top-left corner to the bottom-right corner of an m × n grid, moving only down or right.

**ALGORITHM:**

1. Create a dp[m][n] table.

2. Initialize first row & column with 1.

3. Fill the table using relation dp[i][j] = dp[i-1][j] + dp[i][j-1].

4. Answer = dp[m-1][n-1].

**PROGRAM:**

A screenshot of a computer

AI-generated content may be incorrect.

**Input:**

m = 7, n = 3

**Output:**

A screenshot of a computer

AI-generated content may be incorrect.

**RESULT:**

Thus, the program to calculate the number of unique paths for a robot is successfully executed, and the output is verified.

**PERFORMANCE ANALYSIS:**

• Time Complexity: O(m \* n)

• Space Complexity: O(m \* n) (can be reduced to O(n) with 1D DP).