

062. Unique Paths

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- Dynamic Programming+Array

Description

A robot is located at the top-left corner of a $m \times n$ grid (marked 'Start' in the diagram below).

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 (marked 'Finish' in the diagram below).

How many possible unique paths are there?



Above is a 3 x 7 grid. How many possible unique paths are there?

Note: m and n will be at most 100.

1. Thought line

2. Dynamic Programming+Array

```
1 class Solution {
2 public:
3     int uniquePaths(int m, int n) {
4         int Possibility [m][n];
5
6         // initiate Possibility array
7         for (int i=0; i<=m-1; ++i)
8             for (int j=0; j<=n-1; ++j)
9                 if (i==0 || j==0)
10                     Possibility[i][j]=1;
11
12         // dp
13         for (int i=1; i<=m-1; ++i){
14             for (int j=1; j<=n-1; ++j)
15                 Possibility[i][j] = Possibility[i-1][j]+Possibility[i][j-1];
16         }
17         return Possibility[m-1][n-1];
18     }
19 }
20 };
```