CodeQuotient

Department of Computer Science & Engineering

LAB MANUAL

22CS025 - Algorithm Design & Implementation-5Sem-2022

Student Name	NUTAN BORA
Email	nutan2005.be22@chitkara.edu.in
Course Name	22CS025 - Algorithm Design & Implementation-5Sem-2022

CodeQuotient

Faculty Incharge

Aim: Count number of ways to cover a distance

Mr. Amit has a puzzle to solve. He needs your help. The puzzle is to find total number of ways to cover a distance of D steps where he can take on only 1,2,....,K steps in one go. For example, if D=3 & K=3, he can do it in 4 ways: {1+1+1, 1+2, 2+1, 3}, total 4 ways to complete 3 steps.

Input Format
First Line will contain an integer D denoting the distance to be covered.
Second Line will contain an integer K denoting the steps can be taken at most in one go.

Output Format
Print the total number of ways.

Sample Input
3
3

Sample Output
4

Solution:

```
class Result
{
  static int totalWaysToDistance(int d, int k){
    int[] dp = new int[d+1];
    dp[0] = 1;
    for(int i=1; i<=d; i++){
      for(int j=1; j<=k; j++){
        if(i-j >= 0) dp[i] += dp[i-j];
      }
    }
    return dp[d];
  }
}
```

NUTAN BORA
nutan2005.be22@chitkara.edu.in