RobotStack Readme

Overview

This project involves solving a dynamic programming problem by implementing a memoized version using Python. The problem revolves around robots attempting to climb over a wall, constrained by certain rules. The robots can only stand on each other's shoulders, stack in a limited number, and create a restricted number of stacks. The goal is to determine the number of ways a given number of robots can distribute themselves into the stacks based on the provided parameters.

Description

Robots are tasked with climbing over a wall, and the rules include the number of stacks (n), the maximum number of robots per stack (k), and the total number of robots (b). The solution must utilize dynamic programming to calculate the distribution possibilities.

Code

The implementation is done in Python, and the main file is named `RobotStack.py`. The program takes a text file as input and outputs the results to the command line. The input file should be provided as a command line parameter when running the program, as shown below:

python RobotStack.py input.txt

Input File Format

Each line of the input file contains three comma-separated values representing instances of b, n, and k in that order.

Output Format

The output format will display the results on the command line, following a specific format that corresponds to the examples in the provided input.txt file.

E**xample**

For instance, given b=3, n=4, and k=2, there are 16 different ways the robots can distribute themselves. The solution increases as k moves from 1 to b.