

IT LAB - M.TECH CS

Lab - 4

August 28, 2017

Understanding Memoization in Dynamic Programming (DP) Strategy:

1. Write a program to implement 0/1 knapsack problem using dynamic programming strategy in (i) bottom up as well as (ii) memoization (top down) strategy and (iii) recursive strategy.

Compare the time taken by the three approaches. Write the percentage of the number of cells unfilled in (ii).

Input: Input is given in a file with first line containing number of items and total weight; Next line contains weights of the items and 3rd line contains profits of the respective items.

Output: Compute the time taken by the three approaches. In each case, print the items chosen in the optimal knapsack and its corresponding profit. In case (ii) write the percentage of the number of cells not filled.