



Report on ITM

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Year/Semester: III-II

Course: Design and Analysis and Algorithms

Adopted Teaching Methodology: Brain Storming

Date: 07-02-2022

Topic: 0/1 Knapsack Problem

Description:

Brainstorms typically have three steps: idea capture, discussion and critique, and selection.

Brainstorming is a creative thinking technique for coming up with new ideas and solving problems. Teams use this ideation method to encourage new ways of thinking and collectively generate solutions.

Knapsack Problem-

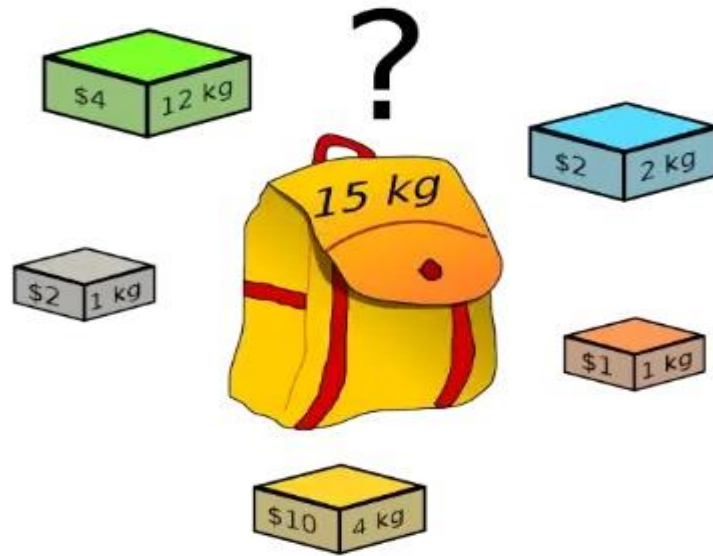
You are given the following-

- A knapsack (kind of shoulder bag) with limited weight capacity.
- Few items each having some weight and value.

The problem states-

Which items should be placed into the knapsack such that-

- The value or profit obtained by putting the items into the knapsack is maximum.
- And the weight limit of the knapsack does not exceed.
- As the name suggests, items are indivisible here.
- We can not take the fraction of any item.
- We have to either take an item completely or leave it completely.
- It is solved using following approach
 - 0/1 Knapsack Problem Using Greedy Approach
 - 0/1 Knapsack Problem Using Dynamic Programming
 - 0/1 Knapsack Problem Using Branch and Bound



Knapsack Problem

