Matrix Chain Multiplication Problem:

Matrix Chain Multiplication problem is to find the optimal order for matrix multiplication for given $n$ matrices.

Question No.1

You have to give the dynamic programming tables (m table for computing best optimal value and k table having track of matrices) for the below matrices, you also need to show the optimal final matrix multiplication tree using $k$ table.

    (2x3) (3x7) (7x5) (5x6) (6x4) (4x3)

0/1 Knapsack\(^1\) Problem:

Knapsack Problem is that,

- We have to fill a bag that can carry maximum weight $W$
- We have to fill the bag with different items each having a certain weight and value
- We want to fill the bag with these items such that total value of items present in bag is maximum and total weight of items doesn’t increase maximum weight that bag can carry($W$).

Question No.2

a) Why Knapsack Problem described above is called 0/1 Knapsack Problem.

b) Draw the Dynamic Programming Tables (one for computing optimal value and one for keeping track of items used in getting optimal value) for the 0/1 Knapsack Problem given below and show your final result.

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\(^1\) Carry Bag
The maximum weight that knapsack can carry is, $W = 15$

### Uploading Instructions:

*You have to upload single word file showing all necessary steps for both questions.*