

1. **0-1 Knapsack Problem:** Display the names of the objects which are contributing to the maximum profit. Refer live session code of the 0-1 Knapsack tabulation approach.
2. **Sum Of Subset Problem:** Given a set of non-negative integers, and a value sum, determine if there is a subset of the given set with a sum equal to the given sum value.
Input: {3, 34, 4, 12, 5, 2}, sum = 9
Output: True
Explanation: There is a subset (4,5) with the sum as 9
Hint: The brute force approach is not acceptable, try to give me an optimized solution using dynamic programming, refer **0-1 knapsack solution** discussed in the live session to approach the solution of this problem.
3. **Matrix Chain Multiplication:** If a chain of the matrix is given, find out the minimum number of the correct sequence of matrices to multiply.
Input: $A_1(2 \times 3) * A_2(3 \times 4) * A_3(4 \times 2)$
Output: $A_1 * (A_2 * A_3) = 36$
Explanation: There are two ways to multiply matrix A_1 , A_2 , and A_3
Either $(A_1 * A_2) * A_3 = 40$ or $A_1 * (A_2 * A_3) = 36$
So, 36 is the minimum thus correct sequence is $A_1 * (A_2 * A_3)$
Hint: Refer 6th Nov 2022 live session to approach the solution to this problem.