

You have to answer here. No extra page will be provided.

Set A

Any examinee found adopting unfair means will be expelled from the trimester/program as per UIU disciplinary rules.

Instructions:

- Write the code by yourself. **Do not adopt any unfair means (No help from the internet, any human, or any existing code written by you or any one else is allowed).**
- Submit the code/codes in ELMS.
- Given hints are not the full solution of the problems.
- There are **two** questions. Answer all of them.

Question 1

[10]

Write a **dynamic programming solution** for the following scenario:

You want to completely fill a **M** meter long cargo with boxes. There are **N** boxes available: the *i*-th box has length **L_i**. **Is it possible to completely fill the cargo? If it is, then what are the boxes you picked for that?**

The width is 1 meter and height 1 meter for all boxes and the cargo.

M meter long cargo

L₁ meter long box

....

L_n meter long box

Sample Input	Sample Output
M N L ₁ ... L _N	
15 3 2 18 9	No
15 5 1 2 7 5 8	Yes 2 5 8

Question 2

[5]

Write a **greedy solution** for the following scenario:

You have **N** boxes of chocolates. The **i**-th box contains **x_i** chocolates. You can choose any box you like. Before choosing a box you are allowed to make **M** moves. In each move, you can move any number of chocolates from any box **j** to any box **k**. **Find out the maximum number of chocolates you can get.**

Hint: Sort the boxes according to the number of chocolates.

Sample Input	Sample Output
N M x ₁ , ..., x _N	
5 2 3 3 3 3 3	9
5 2 5 1 4 2 3	12