DYNAMIC PROGRAMMING ALGORITHMS ASSIGNMENT

"As the previous experience was successful the same cargo company has been contracted to carry the remainder goods in the warehouse to the other location under the same payment conditions (10€/item). The CEO of the Cargo Co. wants, as usual, to maximize the gain (incomes-costs) therefore since the incomes are already known (#(items) x10) only the costs are in the scope to reach this goal. In this scenario, each truck driver has decided to minimize the non-used weight capacity in each truck with the aim of minimizing in the end the total amount of non-used weight capacity in all the trucks and so minimizing also the number of trucks required to do the whole transportation service. Although the drivers are wrong in their thesis, they are very determined to do in this way so you are asked to provide a dynamic programming algorithm to choose goods to be carried in each truck according to driver's intentions for their own truck."

GROUP MEMBERS:

Surname1 Surname2, Name ID number (first student)

Surname1 Surname2, Name ID number (second student)

Surname1 Surname2, Name ID number (third student)

- Rough description of the main ideas of the algorithm to solve this problem as it would be explained to a class mate that does not know what a dynamic programming way of solving problems is
- Formal description of the dynamic programming algorithm that solves the problem, so previously identifying the key elements we have been working with in class.
    - M[i,j] meaning: …
    - Order of candidates to conform the subsets: …
    - M[i,j] definition: …
    - Brief description of how does Bellman Optimality Principle apply: …
- Translation of the previous elements into pseudocode and, report of the computational cost of it.
- Implementation of that pseudocode into C programming language.

All the previous has to be typewritten in a memory file in pdf format. In addition you are expected to provide:

- C source file
- Executable file
- A plain text file including some representative examples to work with in order to show the proper working of the solution provided by the group.