VE477

Introduction to Algorithms

Challenge (Hint 2)

Manuel — UM-JI (Fall 2021)

- Abstract a real life problem
- Find an algorithm to solve a problem
- Prove its correctness and complexity
- Rewarded by a bonus on the final grade

You are still working hard on the problem trying to find a good solution, but somehow the problem looks very generic, so you you see Bill walking in the open-space you catch his attention by waving. He approaches smiling at you to finally ask: “Need anything?”. Although you are a bit shy you politely ask if has any new hint. Bill looks up and keep quiet for a few seconds after which is slowly explains that he did not have much time to investigate all possibilities, but the first idea that would comes to his mind is *linear programming*. He continues, “I guess you have already tried that one? Simplex if a very common algorithm in the field of logistics; However as you probably already know, this might not be the best or most optimal strategy. Maybe having a look at *Dynamic programming*, or *Branch and bound* could be helpful.” After pausing for a few more seconds, he adds ”Do you know about *Meta-heuristics*, maybe it could work with carefully designed initial constructed solution?”

Finally Bill assures you that at least one of these strategies works, will you doe snot have much time to invest on checking which would be best. He has an appointment with a potential new customers, then he will be on a business trip for the following two weeks. He wishes you good luck, and hopes that you can complete the task before he returns. As a side note he will not be able to provide any more hint...