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**Question 5**

Using greedy strategy: We need to ensure that the extra weight of each chemical produced is as small as possible. Therefore, we need to arrange the weights of n chemicals in ascending order and produce the chemicals with the smallest weight first. Because all chemicals evaporate at a rate of p% every day, the production of chemicals with a smaller weight first will minimize the additional weight we produce.

Example

will be produced 1st day, will be produced 2nd day, will be produced 3rd day.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Day 1 | Day 2 | Day 3 |
|  | 10 | 9 | 8.1 |
|  | 0 | 50 | 45 |
|  | 0 | 0 | 100 |

The total loss weight = 10–8.1+50-45 = 6.9

The other way:

will be produced 1st day, will be produced 2nd day, will be produced 3rd day.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Day 1 | Day 2 | Day 3 |
|  | 0 | 0 | 10 |
|  | 0 | 50 | 45 |
|  | 100 | 90 | 81 |

The total loss weight = 100-81+50-45 = 24

Compare 2 different way:

The first method loses significantly less weight than the second method.