Report – Assignment 4

Assumptions:
1. For first day, any type of meal is possible, fasting or Low-Calorie or High-Calorie.

Input Format:
1. First line contains only 1 integer value 'n', indicating the number of days.
2. Following n lines contains 3 values per line, indicating
the calorie consumption of doing fasting, healthy low-calorie and unhealthy high-calorie meals respectively.

Logic for Dynamic Programming:
1. Optimal Subproblem: For each day, maximum calorie intake is calculated by observing the maximum calorie intake till the previous day.
Each subproblem will have max values for taking the type of food consumed on that day.
2. Constructing the solution: If we iterate over n-days, the maximum value (over the three types) on the n-th day would be the calories consumed.

Sample TestCase:

(I). To check Time Execution
24
1 2 3
4 5 6
7 8 9
10 11 12
13 14 15
1 2 3
2 3 3
2 4 2
2 1 2
1 2 3
4 5 6
7 7 8
3 1 1
2 3 4
6 7 8
4 2 2
3 4 1
1 2 4
4 2 1
4 5 7
6 8 9
1 2 3
4 5 5
7 6 9
Output: 124

(II). Any random combination in calorie chart.
Input:
4
1 2 3
4 5 6
7 8 9
10 11 12
Output: 27
Bonus: 28

(III). Only one day
Input:
1
1 2 3
Output: 3

(IV).
Input:
4
10 250 550
15 240 490
10 350 400
12 200 595
Output: 1395
Bonus: 1735