CS 313E (Mitra) Maximum Weighted Independent Set

The original statement of the problem goes as follows: Given a set of vertices V describing a path in a graph, with each vertex assigned a weight, the Maximum Weighted Independent Set, is the subset of vertices whose weights sum to the maximum possible value without any two vertices being adjacent to one another (hence "independent" set).

We have given a colorful version of this problem: You have a set of bottles with different volumes filled with your favorite beverage. You may drink as much as you want with the constraint that you cannot drink from two adjacent bottles. How can you maximize your intake?

Fill the table below. S[v] is the largest sum so far. B[v] is the index of the last bottle that contributed to the sum.

Index	Volume	S[v]	B[v]
0	6		
1	2		
2	9		
3	5		
4	1		
5	4		
6	7		
7	8		
8	3		