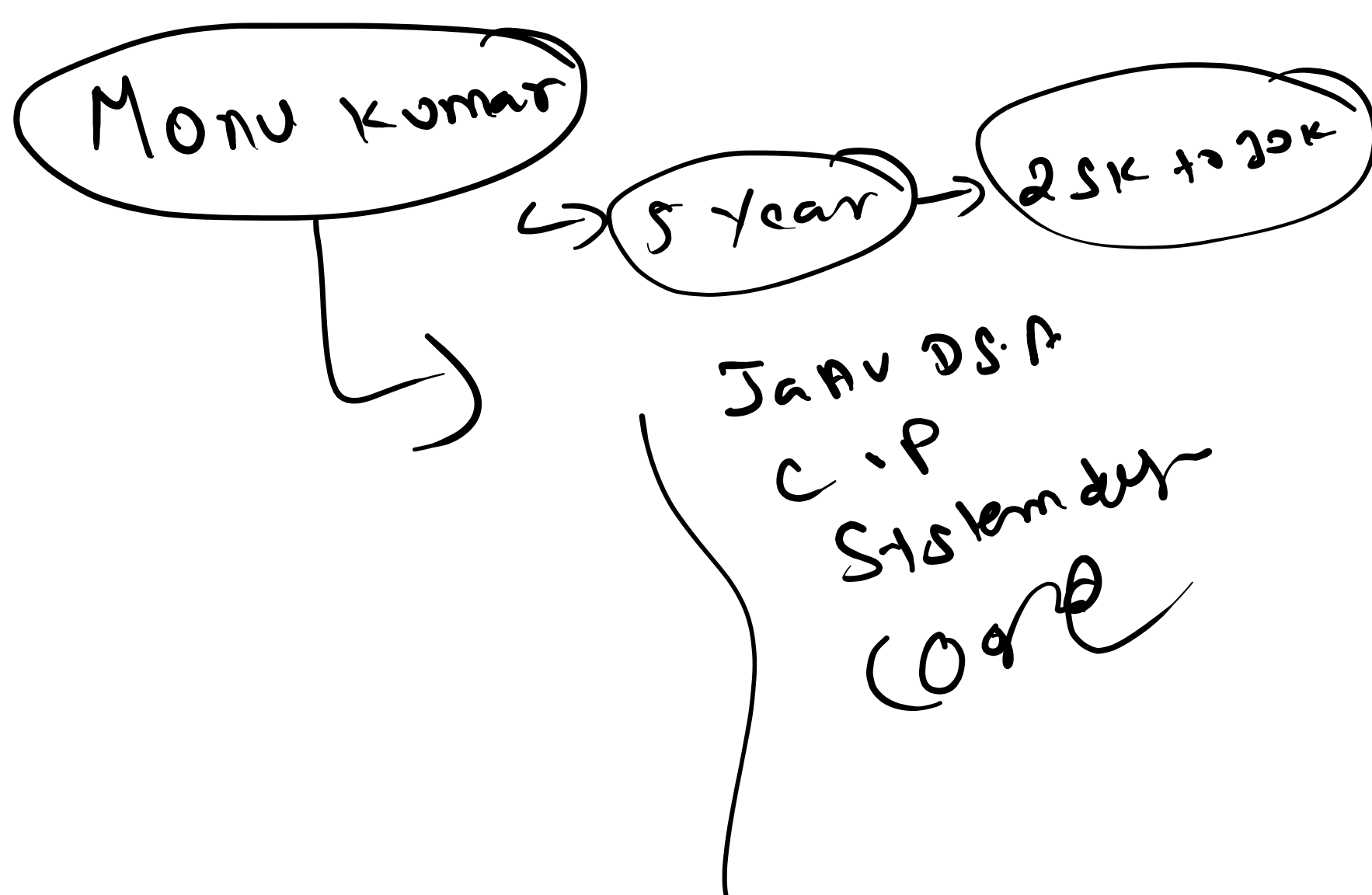
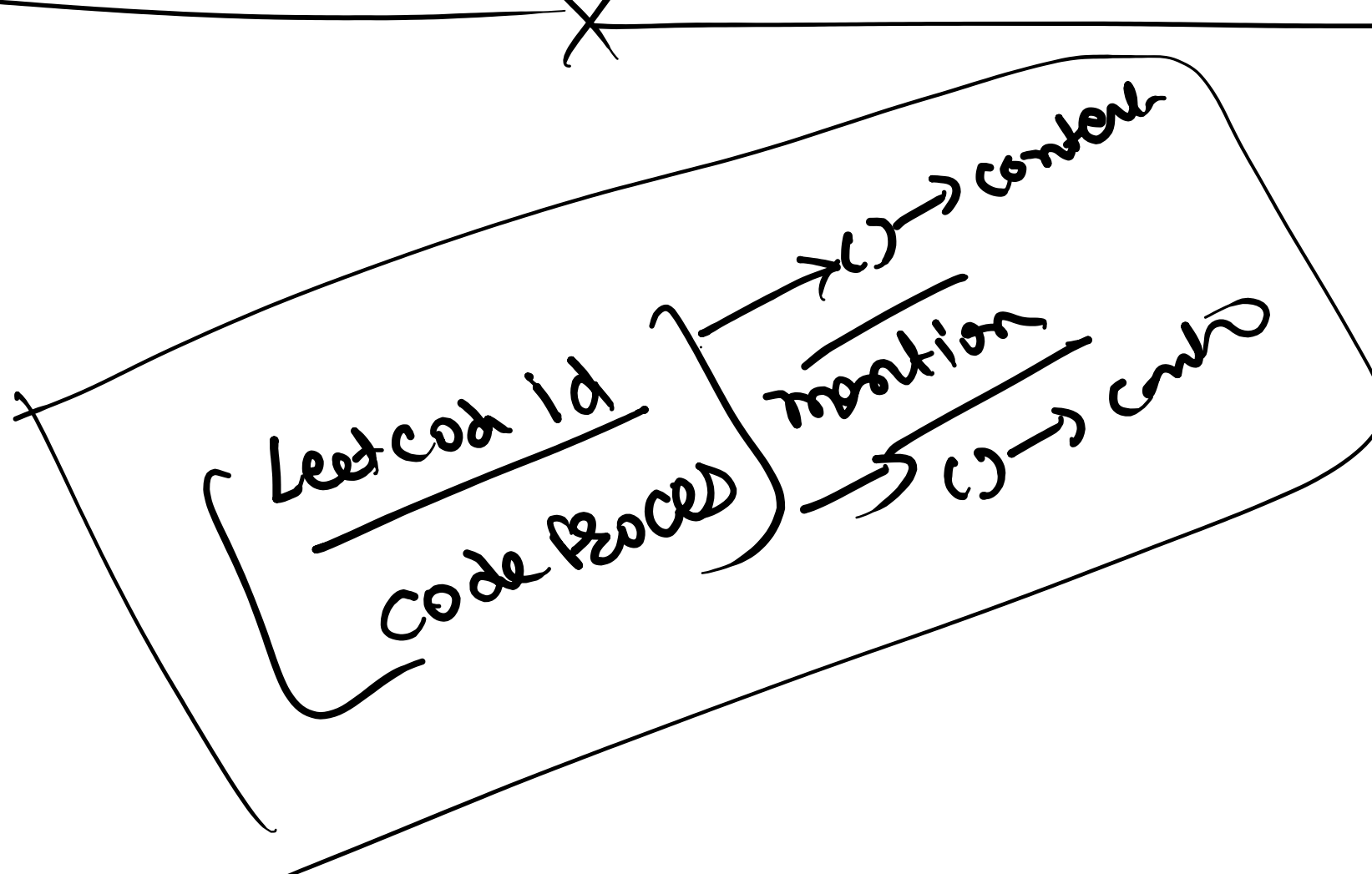


hackwin mhm



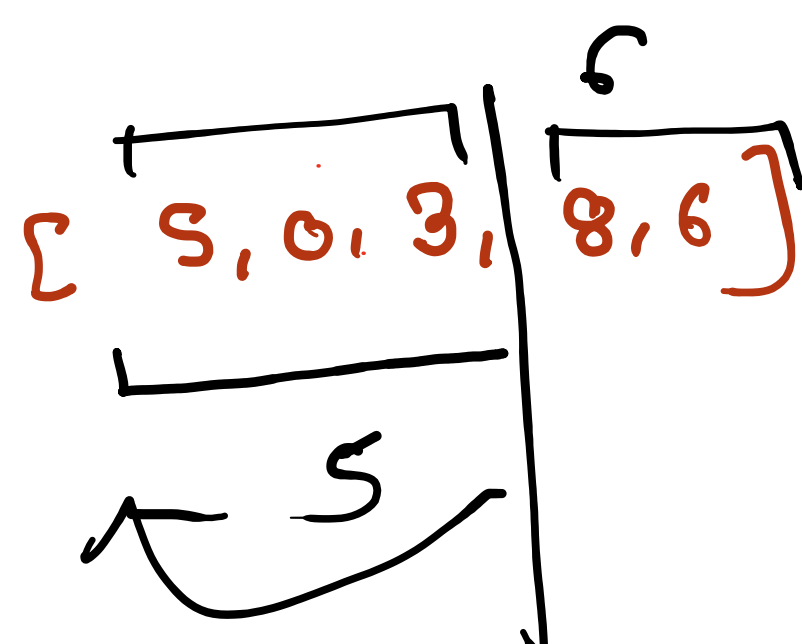
https://docs.google.com/forms/d/e/1FAIpQLSeFcF6GAmh8M_IUzDTB2w7H-XRYIECe2Tb-UWho04koh8x7w/viewform?usp=header

LinkedIn : <https://www.linkedin.com/in/monu-kumar-273850177/>



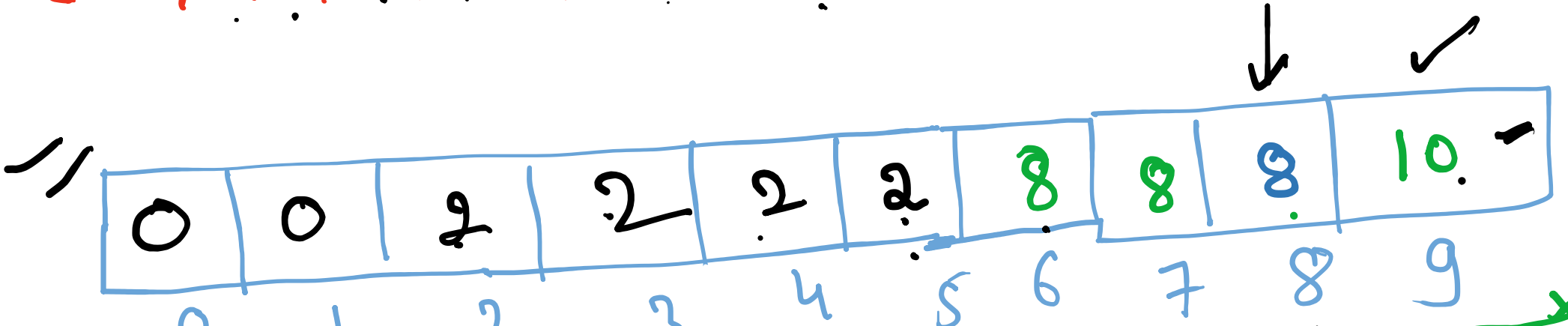
Rainwater

Input: nums = [5,0,3,8,6]
Output: 3
Explanation: left = [5,0,3], right = [8,6]



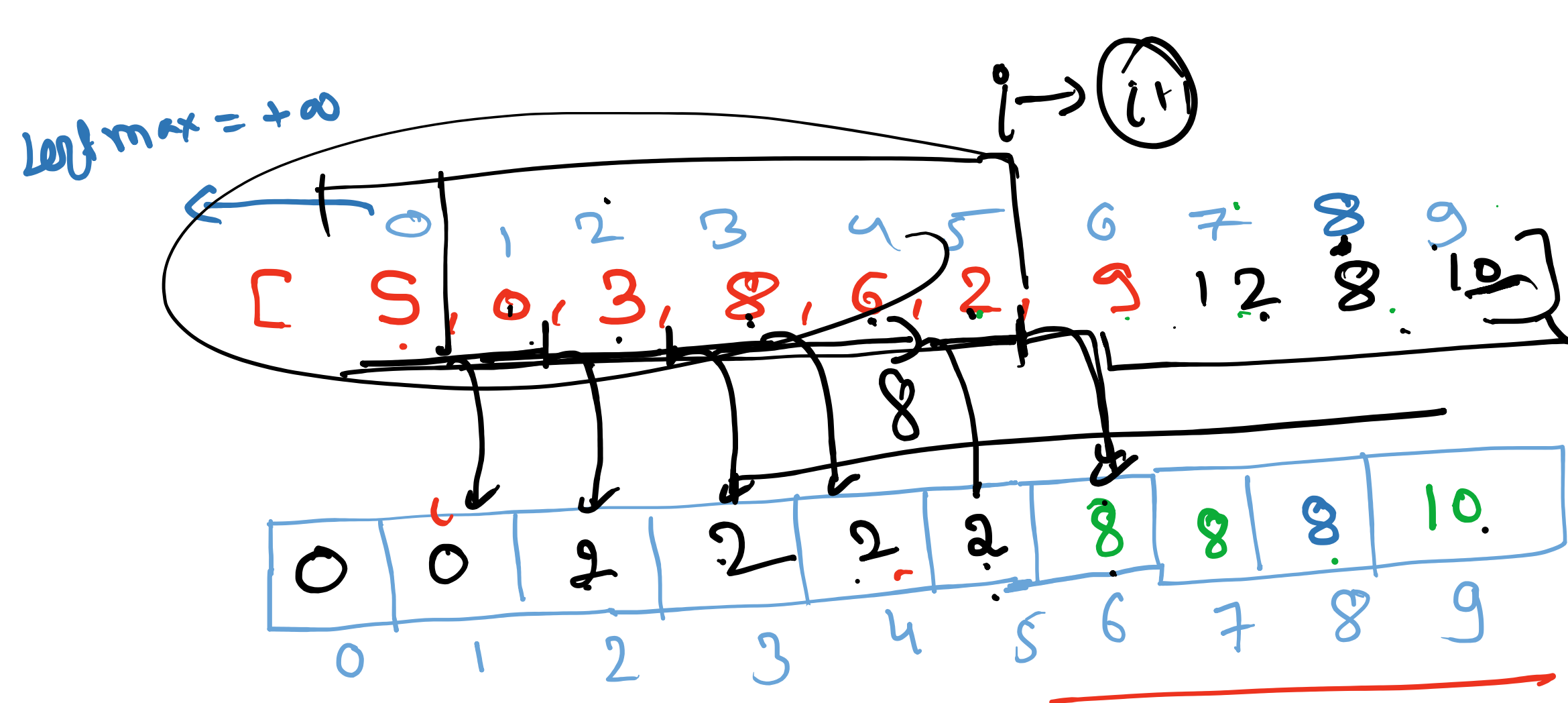
(N) 0 1 2 3 4 5 6 7 8 9
[5, 0, 3, 8, 6, 2, 9, 12, 8, 10]

W R(N-1) = arr(N-1)



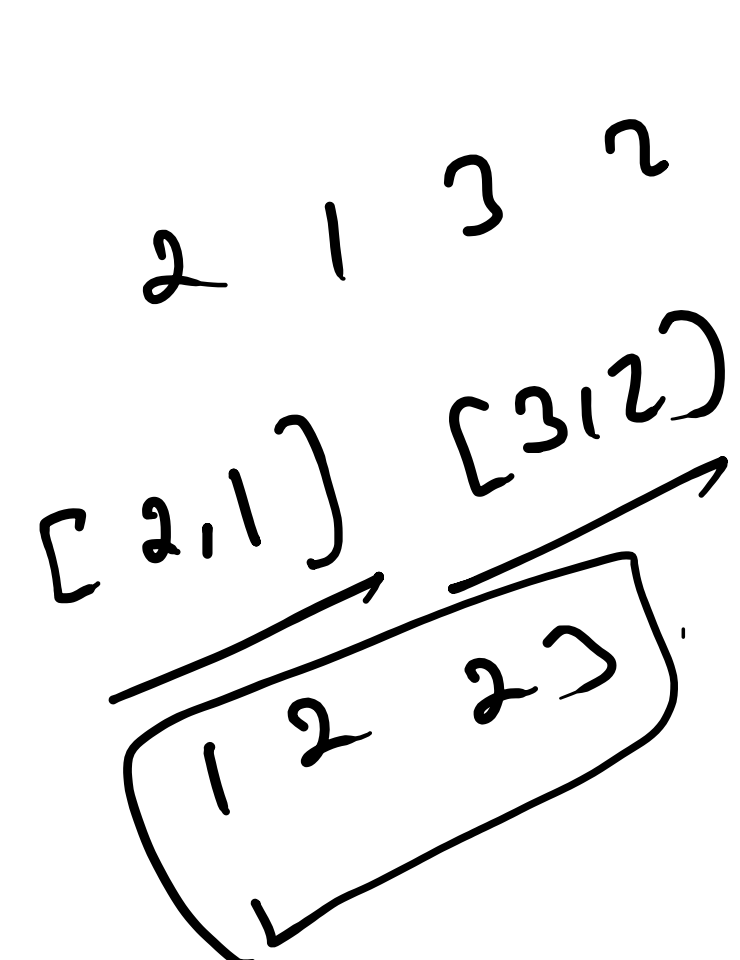
$$i = n-2 \quad j = 0 \quad \dots$$
$$R(i) = \min(R(i+1), arr(i))$$

$$R(9) = (R(9), arr(9))$$
$$R(8) = \min(R(9), arr(8))$$
$$R(7) = \min(R(8), arr(7))$$
$$R(6) = \min(R(7), arr(6))$$
$$R(5) = \min(R(6), arr(5))$$
$$R(4) = \min(R(5), arr(4))$$
$$R(3) = \min(R(4), arr(3))$$
$$R(2) = \min(R(3), arr(2))$$
$$R(1) = \min(R(2), arr(1))$$

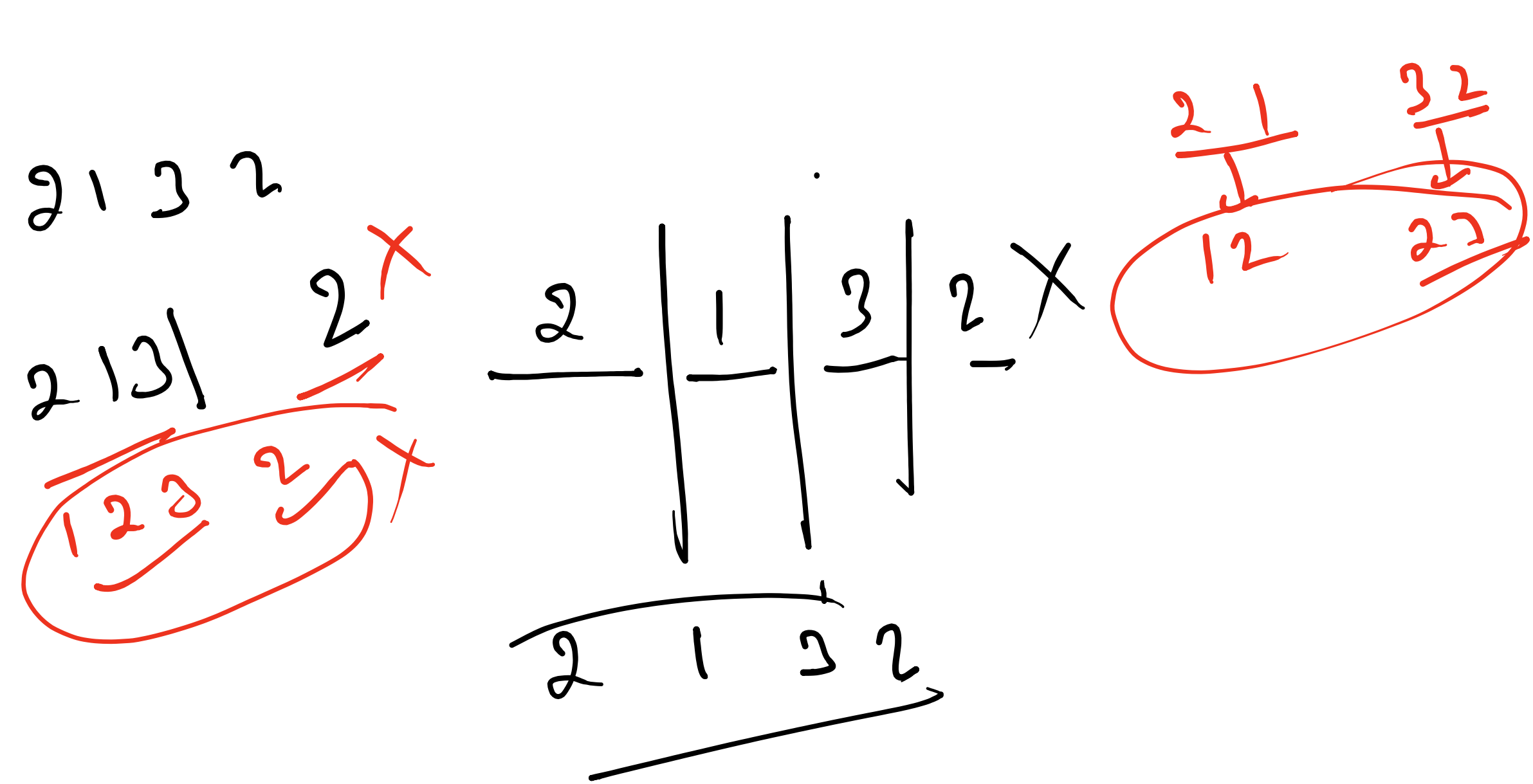


Left max <= Right max

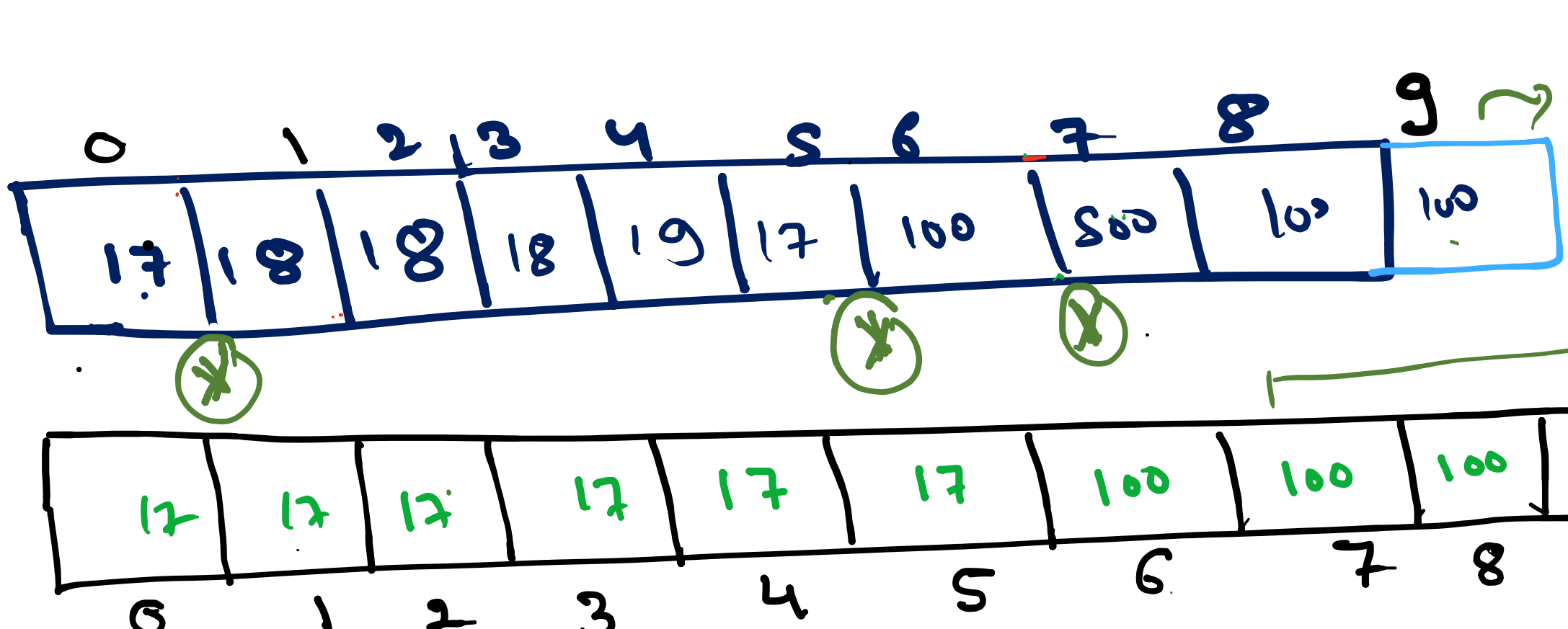
$$L[5] = 5 <= 0 \quad \times$$
$$5 <= 2 \quad \times$$
$$5 <= 3 \quad \times$$
$$8 <= 2 \quad \times$$
$$8 <= 8 \quad \checkmark$$
$$8 <= 12 \quad \checkmark$$
$$6th \text{ max} \leq 1min$$



$$[2][1][3][2] \quad \times$$
$$2 \quad 1 \quad 3 \quad 2$$



(1)(2)(3)



(1) (4)

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

$$i = 0 \quad L[0] = 17 <= R[9]$$
$$i = 1 \quad L[1] = 18 <= R[8]$$
$$i = 2 \quad L[2] = 18 <= R[7]$$
$$i = 3 \quad L[3] = 18 <= R[6]$$
$$i = 4 \quad L[4] = 19 <= R[5]$$
$$i = 5 \quad L[5] = 17 <= R[4]$$
$$i = 6 \quad L[6] = 100 <= R[3]$$
$$i = 7 \quad L[7] = 500 <= R[2]$$
$$i = 8 \quad L[8] = 100 <= R[1]$$
$$i = 9 \quad L[9] = 100 <= R[0]$$

memory limit per test: 256 megabytes

There are n points on a coordinate axis OX . The i -th point is located at the integer point x_i and has a speed v_i . It is guaranteed that no two points occupy the same coordinate. All points move with the constant speed, the coordinate of the i -th point at the moment t (it can be non-integer) is calculated as $x_i + t \cdot v_i$.

Consider two points i and j . Let $d(i, j)$ be the minimum possible distance between these two points over any possible moments of time (even non-integer). It means that if two points i and j coincide at some moment, the value $d(i, j)$ will be 0.

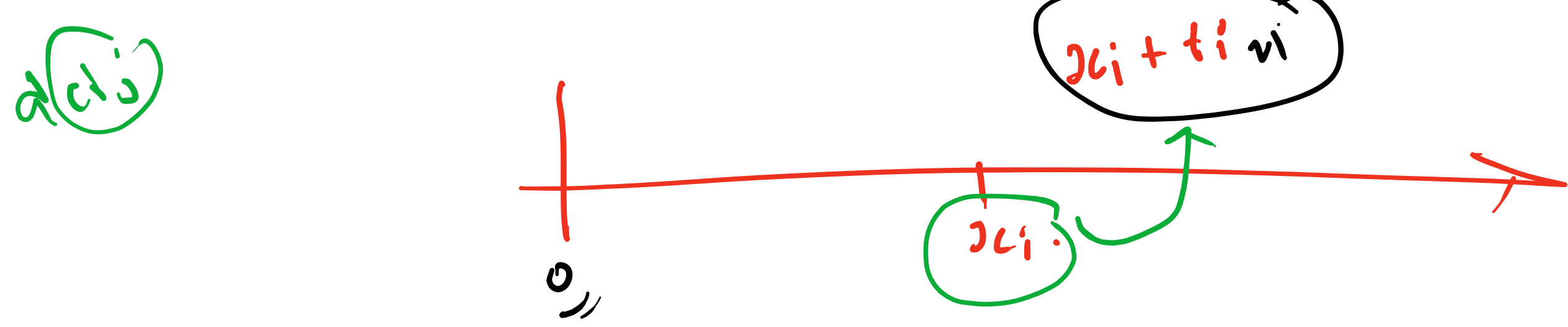
Your task is to calculate the value $\sum_{1 \leq i < j \leq n} d(i, j)$ (the sum of minimum distances over all pairs of points).

Input
The first line of the input contains one integer n ($2 \leq n \leq 2 \cdot 10^5$) — the number of points.

The second line of the input contains n integers x_1, x_2, \dots, x_n ($1 \leq x_i \leq 10^9$), where x_i is the initial coordinate of the i -th point. It is guaranteed that all x_i are distinct.

The third line of the input contains n integers v_1, v_2, \dots, v_n ($-10^8 \leq v_i \leq 10^8$), where v_i is the speed of the i -th point.

Output
Print one integer — the value $\sum_{1 \leq i < j \leq n} d(i, j)$ (the sum of minimum distances over all pairs of points).



$$x_i \quad 2 \quad 1 \quad 4 \quad 3 \quad 5$$
$$v_i \quad 2 \quad 2 \quad 2 \quad 3 \quad 4$$

$$0-1 \quad 1-2 \quad 2-3 \quad 3-4 \quad 4-5$$
$$0-2 \quad 0-3 \quad 0-4 \quad 0-5$$
$$1-3 \quad 1-4 \quad 1-5$$
$$2-4 \quad 2-5$$
$$3-5$$

$$| (x_0 + t \cdot v_0) - (x_1 + t \cdot v_1) | \text{ minimize}$$

$$d(i, j) = | (x_i + t \cdot v_i) - (x_j + t \cdot v_j) | \text{ minimize}$$

$$d(i, j) = | (x_i - x_j) + (t \cdot v_i - t \cdot v_j) | \text{ minimize}$$