AXIS-ALIGNED ENCLOSURE OPTIMIZATION

Problem Statement :

Your nation has begun urban redevelopment in the futuristic mega-city of Axion Prime, a vast, grid-structured metropolis built on top of ancient technology. The city is populated with various buildings scattered across the land, each associated with a cost — a monetary burden for including that building within a regulated zone.As the chief architect of Axion Prime's zoning council, your task is to design a containment boundary — a simple, closed polygon — to enclose at least K buildings

Goals:

- **Total Cost = Perimeter of the polygon + Sum of weights of enclosed buildings**
- Polygon must be:
  - axis alligned (its edjes should be parallel to x and y axis).
  - vertices can be floating points.
  - A building is considered **enclosed** if it lies **strictly inside or on the boundary** of the polygon.
  - The polygon must be simple — meaning non-self-intersecting and closed.
- Design an axis-aligned, simple polygon that encloses **at least K buildings**, and **minimizes** the total cost as defined above.

Input Format:

- The first line contains two integers N and K — the total number of buildings and the minimum number that must be enclosed.
- The next N lines each contain three integers: x_i y_i w_i — the coordinates and cost weight of the i-th building.

Constraints:

- $1 <= k <= N <= 10000$
- $0 <= x_i, y_i <= 10000$
- w_i can be negative
- Polygon must be simple,closed and axis alligned

Output Format:

- The first line must contain a floating-point number C — the **minimum total cost**, printed with **at least six digits after the decimal point**
- The next lines should describe the polygon, **one edge per line**.
- Each line contains **four real numbers**: x1 y1 x2 y2, representing an edge of the polygon from point (x1, y1) to (x2, y2)
- Edges must be listed **in order**, such that consecutive edges form a connected path and the last edge connects back to the first
- Each edge must be **either horizontal or vertical**