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Crayons

Mirko recently got N crayons as a gift. The color of each crayon is a combination of three primary colors: red, green and blue. The color of the i^{th} crayon is represented with three integers: R_i for the red, G_i for the green and B_i for the blue component. The difference between the i^{th} and the j^{th} crayon is $\max(|R_i - R_j|, |G_i - G_j|, |B_i - B_j|)$. The colorfulness of a subsequence of crayons is equal to the largest difference between any two crayons in the subsequence.
Mirko needs a subsequence with K crayons with the smallest colorfulness for his drawing. The subsequence does not have to be consecutive. Find it!

Input

The first line of input contains integers N and K ($2 \leq K \leq N \leq 100\,000$). The i^{th} of the folowing N lines contains three integers R_i, G_i and B_i ($0 \leq R_i, G_i, B_i \leq 255$)

Output

The first line of output should contain the smallest colorfulness of a subsequence with K crayons. The following K lines should contain the R, G and B values of the colors of the crayons in the subsequence, in any order. Any subsequence that yields the smallest colorfulness will be accepted.

Sample input	Sample output
2 2 1 3 2 2 6 4	3 1 3 2 2 6 4
3 2 3 3 4 1 6 4 1 1 2	2 3 3 4 1 1 2
5 3 6 6 4 6 2 7 3 1 3 4 1 5 6 2 6	2 6 2 7 4 1 5 6 2 6