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: $\mathbf{R_i}$ for the red, $\mathbf{G_i}$ for the green and $\mathbf{B_i}$ for the blue component.

The **difference** between the **i**th and the **j**th crayon is $\max(|\mathbf{R_i} - \mathbf{R_j}|, |\mathbf{G_i} - \mathbf{G_j}|, |\mathbf{B_i} - \mathbf{B_j}|)$. 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** ($2 \leq \mathbf{K} \leq \mathbf{N} \leq 100\,000$).

The **i**th of the folowing **N** lines contains three integers $\mathbf{R_i}$, $\mathbf{G_i}$ and $\mathbf{B_i}$ ($0 \leq \mathbf{R_i}, \mathbf{G_i}, \mathbf{B_i} \leq 255$).

## 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.

## SCORING

In test cases worth 50% of total points, $0 \leq \mathbf{R_i}, \mathbf{G_i}, \mathbf{B_i} \leq 20$ will hold.

In test cases worth additional 30% of total points, $0 \leq \mathbf{R_i}, \mathbf{G_i}, \mathbf{B_i} \leq 50$ will hold.

## SAMPLE TESTS

**input**

```
2 2
1 3 2
2 6 4
```

**output**

```
3
1 3 2
2 6 4
```

**input**

```
3 2
3 3 4
1 6 4
1 1 2
```

**output**

```
2
3 3 4
1 1 2
```

**input**

```
5 3
6 6 4
6 2 7
3 1 3
4 1 5
6 2 6
```

**output**

```
2
6 2 7
4 1 5
6 2 6
```