

Practice Problem PA

Party Medley

ICPC University has N students, numbered from 1 to N , in its Competitive Programming club. Student i has a rating of R_i representing their estimated skill in competitive problem-solving.

Contest season is coming and Morgan, the coach of the Competitive Programming club, would like to send at most one good team to a particular contest due to their limited budget. A team consists of exactly 3 different students. Suppose that a team consists of student i , j , and k . Their *team rating* is $A_i + A_j + A_k$, and their *rating difference* is $\max(A_i, A_j, A_k) - \min(A_i, A_j, A_k)$.

Morgan believes that a team is *balanced* if their rating difference is no more than a threshold of M . Additionally, he also would like the team rating to be as large as possible while being a balanced team as well.

Morgan asks you to compute two values. The first value is the number of different balanced team configurations that can be made. The second value is the largest team rating of a balanced team that can be made.

Two team configurations are different if and only if there is at least one different student between those team configurations.

Input

Input begins with two integers N M ($3 \leq N \leq 200$; $0 \leq M \leq 4000$) representing the number of students and the threshold for rating difference, respectively. The next line contains N integers A_i ($0 \leq A_i \leq 4000$) representing the rating of student i .

Output

If there is at least one balanced team configuration, then output two space-separated integers in a single line representing the number of different balanced team configurations and the largest team rating of any balanced team, respectively.

If there is no balanced team configuration, then output -1 in a single line.

Sample Input #1

```
5 150
1400 1425 1250 4000 1300
```

Sample Output #1

```
2 4125
```

Explanation for the sample input/output #1

An example of a balanced team configuration is the team consisting of student 1, 3, and 5. Their team rating is $1400 + 1250 + 1300 = 3950$. Their rating difference is $1400 - 1250 = 150$, which is no more than 150.

The other balanced team configuration is the team consisting of students 1, 2, and 5. Their rating difference is 125 with a team rating of 4125, which is the highest team rating among all balanced team configurations that can be made.

Sample Input #2

```
4 100
2000 1900 1800 2100
```

Sample Output #2

```
-1
```

Explanation for the sample input/output #2

Any team configuration has a rating difference of at least 200, which is more than the given threshold.

Sample Input #3

```
8 4000
100 200 300 400 500 600 700 800
```

Sample Output #3

```
56 2100
```

Explanation for the sample input/output #3

Any team configuration in this example is a balanced team, while the team consisting of students 6, 7, and 8 has the largest team rating of $600 + 700 + 800 = 2100$

Sample Input #4

```
8 0
10 10 10 20 20 20 30 30
```

Sample Output #4

```
2 60
```

Explanation for the sample input/output #4

There are only 2 possible balanced team configurations: A team with students 1, 2, and 3 with a total team rating of $10 + 10 + 10 = 30$, and a team with students 4, 5, and 6 with a total team rating of $20 + 20 + 20 = 60$. The latter has the largest team rating.