# IOI '16 P1 - Detecting Molecules (Standard I/O)

**Time limit:** 0.6s **Memory limit:** 256M

Petr is working for a company that has built a machine for detecting molecules. Each molecule has a positive integer weight. The machine has a *detection range* $[l, u]$, where $l$ and $u$ are positive integers. The machine can detect a set of molecules if and only if this set contains a subset of the molecules with total weight belonging to the machine's detection range.

Formally, consider $n$ molecules with weights $w_0, \ldots, w_{n-1}$. The detection is successful if there is a set of distinct indices $I = \{i_0, \ldots, i_{m-1}\}$ such that $l \leq w_{i_0} + \cdots + w_{i_{m-1}} \leq u$.

Due to specifics of the machine, the gap between $l$ and $u$ is guaranteed to be greater than or equal to the weight gap between the heaviest and the lightest molecule. Formally, $u - l \geq w_{max} - w_{min}$, where $w_{max} = \max(w_0, \ldots, w_{n-1})$ and $w_{min} = \min(w_0, \ldots, w_{n-1})$.

Your task is to write a program which either finds any one subset of molecules with total weight within the detection range, or determines that there is no such subset.

## Input Specification

The input will be given in the following format:

Line $1$ of input will contain three space-separated integers $n$, $l$, and $u$, respectively representing the number of elements in $w$ (i.e., the number of molecules), and the endpoints of the detection range.
Line $2$ of input will contain $w$, an array of length $n$. The space-separated integers $w[0], w[1], \ldots, w[n-1]$ represent the weights of the molecules.

## Output Specification

You should output two lines. On the first line, a single integer $m$, the size of the required subset, or `0`, if no such subset can be found.
The second line should contain $m$ space separated integers: $i_1, i_2, \ldots, i_m$, the indices of the required subset.

## Sample Input 1

```
4 15 17
6 8 8 7
```

## Sample Output 1

```
2
1 3
```

## Explanation for Sample Output 1

In this example we have four molecules with weights $6$, $8$, $8$ and $7$. The machine can detect subsets of molecules with total weight between $15$ and $17$, inclusive. Note, that $17 - 15 \geq 8 - 6$. The total weight of molecules $1$ and $3$ is $w_1 + w_3 = 8 + 7 = 15$, so the program can output `[1, 3]`. Other possible correct answers are `[1, 2]` $(w_1 + w_2 = 8 + 8 = 16)$ and `[2, 3]` $(w_2 + w_3 = 8 + 7 = 15)$.

## Sample Input 2

```
4 14 15
5 5 6 6
```

## Sample Output 2

```
0
```

## Explanation for Sample Output 2

In this example we have four molecules with weights $5$, $5$, $6$ and $6$, and we are looking for a subset of them with total weight between $14$ and $15$, inclusive. Again, note that $15 - 14 \geq 6 - 5$. There is no subset of molecules with total weight between $14$ and $15$ so the program should output `0`.

## Sample Input 3

```
4 10 20
15 17 16 18
```

## Sample Output 3

```
1
0
```

## Explanation for Sample Output 3

In this example we have four molecules with weights $15$, $17$, $16$ and $18$, and we are looking for a subset of them with total weight between $10$ and $20$, inclusive. Again, note that $20 - 10 \geq 18 - 15$. Any subset consisting of exactly one element has total weight between $10$ and $20$, so the possible correct answers are: `[0]`, `[1]`, `[2]` and `[3]`.

## Subtasks

1. (9 points): $1 \leq n \leq 100, 1 \leq w_i \leq 100, 1 \leq u, l \leq 1\,000$, all $w_i$ are equal.
2. (10 points): $1 \leq n \leq 100, 1 \leq w_i, u, l \leq 1\,000$ and $\max(w_0, \ldots, w_{n-1}) - \min(w_0, \ldots, w_{n-1}) \leq 1$.
3. (12 points): $1 \leq n \leq 100$ and $1 \leq w_i, u, l \leq 1\,000$.
4. (15 points): $1 \leq n \leq 10\,000$ and $1 \leq w_i, u, l \leq 10\,000$.
5. (23 points): $1 \leq n \leq 10\,000$ and $1 \leq w_i, u, l \leq 500\,000$.
6. (31 points): $1 \leq n \leq 200\,000$ and $1 \leq w_i, u, l < 2^{31}$.