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C - Robot Factory

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Time Limit: 2 sec / Memory Limit: 1024 MiB

Score : 300 points

Problem Statement

Takahashi can combine a head part and a body part to create a robot. A robot falls over if the weight of the head part is greater than the weight of the body part.

Currently, he has N head parts and M body parts. The weight of the i -th ($1 \leq i \leq N$) head part is H_i grams, and the weight of the i -th ($1 \leq i \leq M$) body part is B_i grams.

He wants to create a total of K robots that do not fall over by appropriately combining the parts he has. Determine whether he can achieve his goal by combining the parts well.

Here, a part cannot be used to create multiple robots, and two or more head parts (or two or more body parts) cannot be used to create one robot.

Constraints

- $1 \leq N \leq 2 \times 10^5$
- $1 \leq M \leq 2 \times 10^5$
- $1 \leq K \leq \min\{N, M\}$
- $1 \leq H_i \leq 10^9$ ($1 \leq i \leq N$)
- $1 \leq B_i \leq 10^9$ ($1 \leq i \leq M$)
- All input values are integers.

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Input

The input is given from Standard Input in the following format:

```
 $N$   $M$   $K$   
 $H_1$   $H_2$   $\dots$   $H_N$   
 $B_1$   $B_2$   $\dots$   $B_M$ 
```

Output

Print Yes if Takahashi can combine the parts well to create K robots that do not fall over; otherwise, print No.

Sample Input 1

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```
6 6 3  
2 7 1 8 2 8  
1 8 2 8 4 5
```

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Sample Output 1

[Copy](#)

Yes

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If we denote combining the i -th head part and the j -th body part as (i, j) , then Takahashi can create three robots that do not fall over by combining them as $(1, 2)$, $(2, 4)$, $(3, 6)$, for example.

Thus, print Yes.

Sample Input 2

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```
1 1 1  
43  
1
```

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Sample Output 2

[Copy](#)

No

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His head part is too heavy, so he cannot create any robot that does not fall over.

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Sample Input 3

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```
1 1 1
100
100
```

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Sample Output 3

[Copy](#)

```
Yes
```

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Note that a robot does not fall over if the head and body have equal weights.

Sample Input 4

[Copy](#)

```
12 15 12
748 169 586 329 972 529 432 519 408 587 138 249
656 114 632 299 984 755 404 772 155 506 832 854 353 465 387
```

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Sample Output 4

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```
Yes
```

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