Graded Programming Assignment 4 (STL)

You are the manager of the casino **CS101.1x Royale**. You have a very weird game in your casino, rules for which are

1) N players start the game with money $m_1, m_2, m_3 \ldots m_N$ respectively where m_i **> 0 for all i**
2) All players play all turns
3) If a player wins a turn he/she get W,
4) If a player loses a turn he/she loses 1
5) You have a policy so if a turn is being played and a player has 0 at the start of the turn, he/she is declared a default winner and gets W at the end of that turn
6) Any number of players can win a turn from 0 to N
7) The game ends when all except 1 player have 0
8) There is no upper bound on the number of turns that can be played

Your job is to find out if the game can ever end (number of turns does not matter).

Here is an example with N=2 and W=2 and player 1 starts with 6 and player 2 with 5

	Player 1	Player 2
Start money	6	5
Result of round 1	Win	Lose
Money after round 1	8	4
Result of round 2	Win	Lose
Money after round 2	10	3
Result of round 3	Win	Lose
Money after round 3	12	2
Result of round 4	Win	Lose
Money after round 4	14	1
Result of round 5	Win	Lose
Money after round 5	16	0
The game ends after round 5 since all except player 1 have 0		

Here is another example with N = 3 and W = 2 and P_1 starts with 2, P_2 with 2 and P_3 with 4

	Player 1	Player 2	Player3
Start money	2	2	4
Result of round 1	Lose	Lose	Win
Money after round 1	1	1	6
Result of round 2	Win	Win	Lose
Money after round 2	3	3	5
Result of round 3	Lose	Lose	Lose
Money after round 3	2	2	4
Result of round 4	Lose	Lose	Lose
Money after round 4	1	1	3
Result of round 5	Lose	Lose	Lose
Money after round 5	0	0	2

The game ends after round 5 since all except player3 have 0

One case where the game won't end is when N = 3, W = 2, P_1 starts with 1, P_2 with 2 and P_3 with 3 (You can check this by manually trying)

Function: void royale(int N, int W, vector<int> &money, bool &flag)

Variable N contains number of players, variable W is the winning amount, and vector money contains m_1,m_2,m_3....m_N., and variable 'flag'.

You are required to complete the code to determine whether the game will end or not? You are required to :

1) Set value of variable 'flag' to **true** if game ends or set to **false** in case when game doesn't end.

Sample inputs with their outputs

Input1:

```
N=2 W=2 money={6,5}
```

output1:

```
YES
```

input2:

```
N=3 W=2 money={2 ,2, 4}
```

output2:

```
YES
```

input3:

```
N=3 W=2 money={1, 2, 3}
```

output3:

```
NO
```

Note: the output only contains the string “YES”, If the game can end or “NO” if it cannot end.

Some constraints on inputs are

1<N<=100

1<W<=10

0<m_i<300