

Question

The current selected programming language is **Python3.7**. We emphasize the submission of a fully working code over partially correct but efficient code. Once **submitted**, you cannot review this problem again. You can use *print* to debug your code. The *print* may not work in case of syntax/runtime error. The version of **Python3.7** being used is **3.7.3**.

An employee in an organization has begun working on N projects (numbered 0 to $N-1$). Each week he/she can work on a single module of one of the projects. The modules that are chosen on any two successive weeks should come from different projects. A project i can have at most C_i modules. The modules of the projects are such that a module is completed in a week.

Write an algorithm to determine the number of weeks the employee can work on projects following the above-mentioned rules.

Input

The first line of the input consists of an integer - *num*, representing the number of projects (N).

The next line consists of N space-separated integers - *projC0*, *projC1*, ..., *projCN-1*, representing the number of modules of the projects.

Output

Print an integer representing the maximum number of weeks the employee can work on the projects.

Constraints

$$1 \leq \text{num} \leq 5 \times 10^4$$

$$1 \leq \text{projC}_i \leq 10^7$$

$$\sum \text{projC}_i \leq 10^5$$

$$0 \leq i < \text{num}$$

Example

Input:

```
3
7 2 3
```

Output:

```
11
```

Explanation:

The first, second and third projects have 7, 2 and 3 modules respectively.

The modules of different projects are selected on successive weeks in a sequence: first, second, first, third, first, second, first, third, first, third, first.

So, the maximum number of weeks an employee can work on these projects is 11.

```

1
2 """
3
4 """
5 def workingWeeks(projC):
6     # write your code here
7
8     return
9
10 def main():
11     #input for projC
12     projC = []
13     projC_size = int(input())
14     projC = list(map(int,input().split()))
15
16
17     result = workingWeeks(projC)
18     print(result)
19
20 if __name__ == "__main__":
21     main()

```

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A mouse is placed in a maze. There is a huge chunk of cheese somewhere in the maze. The maze is represented as an $N \times M$ grid of integers where 0 represents a wall, 1 represents the path where the mouse can move and 9 represents the chunk of cheese. The mouse starts at the top left corner at (0,0). Write an algorithm to output 1 if the mouse can reach the chunk of cheese, else output 0.

Input

The first line of the input consists of two space-separated integers - *maze_row* and *maze_col* representing the number of rows (N) and the number of columns (M) in the maze, respectively.

The next N lines consist of M space-separated integers representing the maze.

Output

Print 1 if there is a path from the initial position of the mouse to the cheese, else print 0.

Note

The mouse is not allowed to leave the maze or climb the walls.

Example

Input:

```
8 8
1 0 1 1 1 0 0 1
1 0 0 0 1 1 1 1
1 0 0 0 0 0 0 0
1 0 1 0 9 0 1 1
1 1 1 0 1 0 0 1
1 0 1 0 1 1 0 1
1 0 0 0 0 1 0 1
1 1 1 1 1 1 1 1
```

Output:

```
1
```

Explanation:

The mouse can reach the chunk of cheese.

So, the output 1.