**Doors- open or closed?**

There is a 5-star hotel with *N* rooms. All rooms are currently occupied by one person each and their doors are closed initially. Note that one room has one door only. Each person has been given a key for their respective rooms.

But but but… there is an interesting situation about the keys. The key of room number ‘x’ can also open the door of another room if its room number is a multiple of ‘x’. For example, the key of room no. 3 can also open the doors of room numbers like 6, 9 and 12. Because 6, 9 and 12 are multiples of 3.

Now if each person has used their key exactly once in every eligible door, can you figure out what would be the ultimate status of all the doors?

**Problem Description**

Write a code that takes the number of rooms *N* as input and then returns the ultimate status of the doors of each room (as explained above) in the form of an array. Consider the status of closed and open rooms as 0 and 1 respectively.

**Input Format**

The number of rooms *N*.

**Output Format**

An array of integers, containing 0’s and 1’s, as mentioned above.

**Constraints**

1<= *N* <= 100

**Sample Input**

4

**Sample Output**

1 0 0 1

**Explanation**

No. of rooms/doors = 4

All the doors are closed initially, so status is: (0 0 0 0).

Every number is a multiple of 1, so the key of room-1 can open the doors of every other room which makes the status: (1 1 1 1).

4 is a multiple of 2, so the key of room-2 can open doors of both room-2 and room-4 which makes the status: (1 0 1 0).

Now there are no multiples of 3 and 4 among the room numbers. So the key of room-3 can open its own door only, making the status: (1 0 0 0).

Similarly the key of room-4 can open itself only, thus making the final status: (1 0 0 1), which is the output.