

Photobomber!

ZPRAC-16-17-Lab6

[20 points]

Bhuvash and Rohan are cyber-security interns at the FBI for the semester. They decide to hack into their fellow tutors' systems and see what they are upto, as they both know that their friends are not as innocent as they look while teaching :)

The first person on their list is Rachita. Rachita is a self-proclaimed selfie-queen and photo-bombing expert. She wants to take over the internet and wants to be in every picture on the world wide web. Bhuvash and Rohan hack into her computer and find out about her evil plan. She has written a computer program to photoshop herself into every picture on the internet, being not familiar with the security methods, Rachita's program is prone to attacks.

All the images on the internet are given by an ImageID which is a positive integer. Given n ImageIDs which Rachita wants to Photoshop, you need to set up counterattacks on the images where the ImageID is a prime number.

Given an integer n, followed by n ImageIDs in the next line, print n numbers in the output. Print 0 if the corresponding ImageID is not a prime, print 1 if the ImageID is a prime number.

Example:

Input

4

6 7 3 10

Output:

0 1 1 0

Explanation:

6 is not prime -- Print 0

7 is prime -- Print 1

3 is prime -- Print 1

10 is not prime -- Print 0

Constraints:

$1 \leq n \leq 1000$

$1 \leq \text{ImageIDs} \leq 1000$

