

## Week 13

1. A hospital supervisor needs to create a weekly schedule for four nurses, subject to the following condition
  - Each day is divided into three 8-hour shifts.
  - On each day, all nurses are assigned to different shifts and one nurse has the day off.
  - Each nurse works five or six days a week.
  - No shift is staffed by more than two different nurses in a week.
  - If a nurse works shifts 2 or 3 on a given day, he must also work the same shift either the previous day or the following day.

Two ways to formulate the problem

- Assign nurses to shifts
- Assign shifts to nurses

2. Write an algorithm for the given problem:

Dhoni and Holidays: Dhoni has  $n$  days of vacations! So he decided to go either driving or do his cricket practice. Dhoni knows the following information about each of these  $n$  days: whether he can drive his car or not (due to odd-even rule) and whether the cricket academy is open for practice on that day. For the  $i$ -th day there are four options:

1. He cannot drive his car and the academy is closed.
2. He cannot drive his car and the academy is open.
3. He can drive his car and the academy is closed.
4. He can drive his car and the academy is open.

On each of these days Dhoni can either have rest or drive his car (if it is possible on this day), or go to academy (if the academy is open on this day).

Find the minimum number of days on which Dhoni will have rest (it means, he will not go driving and academy at the same time). The only limitation that Dhoni has – he does not want to do the same activity on two consecutive days: it means, he will not go for driving on two consecutive days, and academy for practice on two consecutive days.

### **Input Format**

The first line contains a positive integer  $n$  ( $1 \leq n \leq 100$ ) – the number of days of Dhoni's holidays.

The second line contains the sequence of integers  $a_1, a_2, \dots, a_n$  ( $0 \leq a_i \leq 3$ ) separated by space, where:

$a_i$  equals 0, if on the  $i$ -th day of holiday he can not drive his car and the academy

is closed.

$a_i$  equals 1, if on the  $i$ -th day of holiday he can not drive his car and the academy is open.

$a_i$  equals 2, if on the  $i$ -th day of holiday he can drive his car and the academy is closed.

$a_i$  equals 3, if on the  $i$ -th day of holiday he can drive his car and the academy is open.

### **Output format**

Print the minimum possible number of days on which Dhoni will have rest.

## SAMPLE INPUT

4  
1 3 2 0

### Sample Input

4  
1 3 2 0

### Sample Output

2

Time Limit: 1

Memory Limit: 256

Source Limit:

### Explanation

In the first test case Dhoni can go to academy on the day number 1 and go for driving on the day number 3. Thus, he will have a rest for only 2 days