Question

Ashok is selling plates made up of both gold and copper. While intaking goods from market the gold and copper plates are mixed. Ashok wants to segregate the plates. All the plates are placed on one another. Each plate is given with a unique id in which ID of copper plates are odd and gold plates are even. After segregating also Ashok wants the same order as previous and the gold plates placed on copper plates.

Tags

Stack

Input Description

1st line - Number of plates (N)
2nd line - ID's of plates

Output Description

Segregated Plates

Solution

```
class Stack:
    def __init__(self):
        self.stack = []

    def push(self, data):
        self.stack.append(data)

    def pull(self):
        return self.stack[-1]

    def pop(self):
        return self.stack.pop()

    def isEmpty(self):
        if len(self.stack) == 0:
            return False
        return True

    def printStack(self):
        while self.isEmpty():
            print(self.stack.pop(), end = " ")
```

```
n = int(input())
plates_id = [int(x) for x in input().split()]

plates = Stack()
for i in plates_id:
    plates.push(i)

gold = Stack()
copper = Stack()

for i in range(n):
    if plates.pull() & 1:
        copper.push(plates.pop())
    else:
        gold.push(plates.pop())

copper.printStack()
gold.printStack()
```

Test Cases :

Test Case 1 :

Input

10

5 3 2 4 1 8 6 9 0 7

Output

5 3 1 9 7 2 4 8 6 0

Test Cases 2:

Input :

7

2 5 9 1 4 6 0

Output :

5 9 1 2 4 6 0

Test Cases 3:

Input :

12

7 389 5 8 23 234 2 3 6 8 43 1

Output :
7 389 5 23 3 43 1 8 234 2 6 8

Test Cases 4:
Input :
4
2 3 4 5
Output :
3 5 2 4

Test Cases :
Input :
20
4 3 5 7 3 15 22 35 57 19 8 14 33 25 67 43 45 29 31 56
Output :
3 5 7 3 15 35 57 19 33 25 67 43 45 29 31 4 22 8 14 56