

Scenario-Based Questions

1. The Exam Result Analyzer

In a class of n students, each student's marks are given in a list. A student **passes** if their marks are greater than or equal to 35.

Write a program to count the number of students who passed and failed.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (marks of students).

Output Format

Print two integers: the count of passed students and the count of failed students.

Sample Input

```
6
12 67 45 22 90 33
```

Sample Output

```
3 3
```

Explanation

Passed = 67, 45, 90 \rightarrow 3 students.

Failed = 12, 22, 33 \rightarrow 3 students.

2. The Employee ID Filter

A company stores n employee IDs in a list. The HR wants to print only those IDs that are **even numbers** (since odd IDs are temporary employees).

Input Format

- First line: integer n ($1 \leq n \leq 500$).
- Second line: n integers (employee IDs).

Output Format

Print all even employee IDs separated by a space. If none, print -1 .

Sample Input

```
7
101 202 303 404 111 222 333
```

Sample Output

```
202 404 222
```

Explanation

Only even IDs are selected.

3. The Product Sales Report

A store keeps a list of sales of n products. Each product has a sales count. The manager wants to print the **highest-selling product count** and the **lowest-selling product count**.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (sales count of each product).

Output Format

Print two integers: max sales and min sales.

Sample Input

```
5
12 45 23 89 34
```

Sample Output

```
89 12
```

Explanation

Maximum sales = 89, Minimum sales = 12.

4. The Scholarship Eligibility

In a university, n students applied for scholarships. The eligibility criteria are:

- The student's marks must be **greater than or equal to 75**.
- The student's attendance percentage must be **greater than or equal to 80**.

Write a program to count how many students are eligible for scholarships.

Input Format

- First line: integer n ($1 \leq n \leq 500$).
- Next n lines: each contains two integers \rightarrow marks and attendance percentage.

Output Format

Print the number of eligible students.

Sample Input

4

85 90

70 85

75 80

90 70

Sample Output

Copy code

2

Explanation

(85,90) eligible

(70,85) (marks < 75)

(75,80) eligible

(90,70) (attendance < 80)

5. The Perfect Pair Finder

A company maintains a list of project deadlines (in days). Two projects are called a **perfect pair** if the sum of their deadlines is **exactly equal to a given target k**.

Find how many such pairs exist in the list.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (project deadlines).
- Third line: integer k .

Output Format

Print the number of perfect pairs.

Sample Input

```
6
1 5 7 -1 5 3
6
```

Sample Output

```
3
```

Explanation

Pairs are: (1,5), (7,-1), (3,3). → Total 3 pairs.

6. The Attendance Tracker

A teacher records attendance for n students, where 1 means present and 0 means absent. Write a program to count the number of consecutive absences (0's) that lasted the longest.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (0 or 1).

Output Format

Print the length of the longest streak of absentees.

Sample Input

10

1 0 0 1 0 0 0 1 1 0

Sample Output

3

7. The Stock Price Fluctuation

A company records daily stock prices of **n** days. The manager wants to know how many days the stock price was **strictly higher than the previous day**.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (stock prices).

Output Format

Print the number of days where price increased compared to the previous day.

Sample Input

7

100 102 101 105 107 106 110

Sample Output

4

8. The Reverse Order Processing

A factory records n product IDs. The supervisor wants to print them in reverse order, but only those IDs that are divisible by 5. If none, print -1 .

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (product IDs).

Output Format

Print the IDs divisible by 5 in reverse order.

Sample Input

6

12 25 40 33 50 27

Sample Output

50 40 25

9. The Temperature Monitor

A weather station records the temperature of **n** days. The station wants to count how many days the temperature was **above the average temperature**.

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (temperature of each day).

Output Format

Print the count of days with temperature above average.

Sample Input

5

30 40 35 50 45

Sample Output

2

(Avg = 40, above average = 50, 45 → 2 days)

10. The Unique Gift Finder

A shop maintains a list of customer gift codes (n codes). The manager wants to find and print the **codes that appear exactly once** in the list. Print them in the same order as they appeared. If none, print -1 .

Input Format

- First line: integer n ($1 \leq n \leq 1000$).
- Second line: n integers (gift codes).

Output Format

Print unique gift codes separated by space.

Sample Input

8

10 20 30 10 40 20 50 60

Sample Output

30 40 50 60