

# COMP6047 - Algorithm and Programming

## Session 4 – Program Control: Repetition

### Case 2 – Balanced Team

#### **Problem Statement**

You are a coach at your local university. There are  $n$  students under your supervision, the programming skill of the  $i$ -th student is  $a_i$ .

You have to create a team for a new programming competition. As you know, the more students some team has the more probable its victory is! So you have to create a team with the maximum number of students. But you also know that a team should be balanced. It means that the programming skill of each pair of students in a created team should differ by no more than 5.

Your task is to report the maximum possible number of students in a balanced team.

#### **Format Input**

The first line of the input contains one integer  $n$  ( $1 \leq n \leq 2 \times 10^5$ ) — the number of students.

The second line of the input contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^9$ ), where  $a_i$  is a programming skill of the  $i$ -th student.

#### **Format Output**

Print one integer — the maximum possible number of students in a balanced team.

## Test Case

Sample Input	Sample Output
6 1 10 17 12 15 2	3
10 1337 1337 1337 1337 1337 1337 1337 1337 1337 1337	10
6 1 1000 10000 10 100 10000000000	1

## Format Output

In the first example you can create a team with skills [12,17,15].

In the second example you can take all students in a team because their programming skills are equal.

In the third example you can create a team consisting of a single student (and you cannot create a team consisting of at least two students).