Programming Refresher Workshop

Session 1 Exercises

Programming Refresher Workshop
Learning objectives:

- Problem solving life cycle
- Simple numerical technique
- Simple control structures

Exercise 1 (ex1): Mind Reading

You are to implement the program that will be able to perform mind reading. The user of the program would have done the following:

1. Think of a 4-digit number in which one digit must be different from the other three. For example, 3345.
2. Re-arrange the four digits to form the largest value. For example, 5433
3. Re-arrange the four digits to form the smallest value. For example, 3345
4. Subtract the smallest value from the largest value to obtain another 4-digit number. For example, 5433 – 3345 = 2088
5. The user needs to input any 3 of the 4 digits of the final number. User must input all the zeroes if they are found in the final number. For example, the user may enter 2, 0, 8.
6. Your program should use your mind reading algorithm to output the digit hidden by the user. For example, the hidden digit in this case is 8.

Input

There will be multiple lines of input each with 3 single digits separated by a space. Input is terminated with the negative integer -1.

Output

For each line of input, output a single digit which is the digit hidden by the user.

Sample input

1 3 5

2 0 4

5 1 1

-1

Sample output

9

3

2

Algorithm template

Input

How to accept all the input

Processing

What is the algorithm to find the hidden digit for each input?

Remember, Google is your good friend.

Output

How to output the result