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Coding Arena

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A B C D E F G H

Problem : Multiplication Practice

Having taught multiple digit multiplication and carryover rule etc., the Mathematics teacher Phil Smith wants his students to have some practice. Instead of writing down a series of multiplication problems on the board, which would make his super intelligent students bored, he poses the following problem: He will write an integer on the board and the students have to find the smallest multiple of that number that has the following properties:

1. The multiple must involve at most 2 digits, a, b
2. If two digits a and b occur, all occurrence of a must precede all occurrences of b in the product.

For example, if the number is 125, the multiple is 500.

That problem may be appropriate for his class of 5th standard students. Let us explore a bigger problem. You are given a number in decimal format. You need to find the smallest multiple of that number which, when expressed in hexadecimal representation, involves at most 2 hexadecimal digits X, Y and such that all occurrences of X precede all occurrences of Y.

Input Format:

One line in the input giving the number in decimal format

Output Format:

One line in the output which is the smallest number in hexadecimal format satisfying the conditions. Only capital letters may be used for hexadecimal digits A,B,C,D,E,F

If a number is found which is 7 hex digits or less which meets the criteria, then that is output. If no such number is found, the output is "NOTFOUND"

Constraints:

The input number <9999

If the output is a hex string, its length is 7 hex digits or less

Example 1

Input
175

Output
992

Explanation

The input in decimal format is 175. The multiples of these are 350, 525,... 2450. The hex representation of these are 15E, 20D, ...992. As 992 meets the specifications, the output is 992.

Example 2

Input
151

Output
BCC

Explanation

The first multiple of 151 that meets the criteria is 3020 (decimal) which is BCC (hex). Hence the output is BCC.

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

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Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

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