Department of Computer Science and Engineering

Bangladesh University of Engineering and Technology
CSE 105 : Structured Programming Language

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Assignment 3

1. Ugly numbers are numbers whose only prime factors are 2, 3 or 5. The sequence 1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, ... shows the first 11 ugly numbers. By convention, 1 is included. Write a program to find and print the 1500'th ugly number.

2. **Quirksome Squares :** The number 3025 has a remarkable quirk: if you split its decimal representation in two strings of equal length (30 and 25) and square the sum of the numbers so obtained, you obtain the original number:

$$(30 + 25)^2 = 3025$$

The problem is to determine all numbers with this property having a given even number of digits.

For example, 4-digit numbers run from 0000 to 9999. Note that leading zeroes should be taken into account. This means that 0001 which is equal to   is a quirksome number of 4 digits. The number of digits may be 2,4,6 or 8. Although maxint is only 32767 and numbers of eight digits are asked for, a well-versed programmer can keep his numbers in the range of the integers. However efficiency should be given a thought.

Input

The input of your program is a textflle containing numbers of digits (taken from 2,4,6,8), each number on a line of its own.

Output

The output is a textfile consisting of lines containing the quirksome numbers (ordered according to the input numbers and for each input number in increasing order).

Warning: Please note that the number of digits in the output is equal to the number in the corresponding input line : leading zeroes may not be suppressed.

Sample Input

2
2
Sample Output

00
01
81
00
01
81

3. Consider the following structure:

```
struct student
{
    char name[20];
    char semCode[10];
    int enrollNo;
    int assignSub;
    int marks;
    int attendence;
};
```

Please write functions to add, edit and delete record from a file database (Binary Read/Write). Write a program to illustrate your work.