16 Shortening URLs
10 points

Introduction

Shortening URLs on the web is a technique that makes addresses easier to manage, but still allows them to direct to the required page. This can be useful when sharing specific URLs in, for example, instant messaging technologies like tweets or SMS that have a limit on the number of characters allowed.

One of the most popular techniques for shortening URLs consists of having them stored in a database associated a unique integer key. This avoids having to manage long addresses by generating a new, short URL.

Considering that an URL character can be one of the following:

- A lower case alphabet from 'a' to 'z

- An upper case alphabet from 'A' to 'Z'

- A digit from '0' to '9'

So, it sums up to a total of 62 possible characters to represent the new short URL.

Can you code a program to convert a given positive integer number (up to 4294967295) to a base 62 number where digits of 62 base consists of the lower case letters a-z, the capital letters A-Z and the numbers 0–9?

Input

The input will be a positive integer.

Output

The output will be the shortened URL key expressed as base 62 number.

Example 1

Input

31

Output

F

Example 2

Input

4294967291

Output

eQPp19