
Problem A. Oldest of them all

Input file: standard input
Output file: standard output
Time limit: 2 seconds
Memory limit: 64 megabytes

Frogga, the eldest and the wisest among the frogs had acquired an ability to tell everything about a month given any date from that month provided it follows the Gregorian calendar. He only needed to know the day of the week (w), day of the month (d), number of the month (m) and the year (y). Zrog always wondered how Frogga could do such a thing as he himself faced difficulty remembering even the current date.

Now Zrog is in need of your help in figuring out how Frogga does so. Zrog will provide you with the above mentioned four information of any date and you have to show him the details of that month in the form of a calendar table for the given month. See the output format for details.

P.S. Monday is considered to be the first day in the week.

Input

The only line in the input contains four integers in the following order, day of the week w ($1 \leq w \leq 7$), day of the month d ($1 \leq d \leq 31$), number of the month m ($1 \leq m \leq 12$) and the year y ($1 \leq y \leq 9999$).

Output

The output consists of the table representation of the given month, any day of the month exceeding the value 9 must be replaced with uppercase English alphabet starting with 'A' for 10. Take a look at the sample output.

standard input	standard output
7 3 4 2016	M T W T F S S 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U