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The Virtual Learning Environment for Computer Programming

DNI (again)
Concurso On-line 3 (OIE08) (2008)

Now that we know to calculate the letter of the DNI, we are going to analyze the back side of the DNI. There, a series of numbers and letters appear, as in the following instance:

```
IDESP12345678Z3<<<<<<<< \\
7410150M0903226ESP<<<<<<44 \\
DOE<<JOHN<<<<<<< \\
\</pre>
```

It exists an urban legend that says that the last number of the second line corresponds to the number of people that has the same name and surname that the owner of the DNI. However, as it is explained in the web http://jpf.sdfl.org/dni/, it is not true.

This area of the DNI is composed by OCR characters, that are prepared to be read by machines. In particular, that number only is a control number to verify that it has been correctly read. We can define the following fields in this data area:

```
1.[ID] 2.[ESP] 3.[12345678Z] 4.[3] 5.[<<<<<<<<| \\
6.[741015] 7.[0] 8.[M] 9.[090322] 10.[6] 11.[ESP] 12.[<<<<<<|] 13.[4] \\
14.[DOE<<JOHN<<<<<<<|
```

- 1. Type document [ID]
- 2. Nation [ESP]
- 3. Number of DNI [12345678Z]
- 4. Control number of field 3
- 5. Filler
- 6. Date of birth (AAMMDD) [741015]
- 7. Control number of field 6
- 8. Sex (M/F)
- 9. Date of expiration[090322]
- 10. Control number of field 9
- 11. Nacionality [ESP]
- 12. Filler
- 13. Control number of field 3, 4, 6, 7, 9 and 10 concatenated
- 14. Name

To obtain the control number of a field, the field has to be separated by characters. If we have a letter, we must change it into a number according to the following table:

Table 1: Character to number conversion.

Remainder	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Letter	А	В	С	D	Ε	F	G	Н	I	J	K	L	М	N	0	Р	Q	R	S	Т	U	V	W	Х	Y	Z

Once that all the characters have been change into numbers, we have a sequence of numbers. Then, we add all the numbers up applying a weight 7-3-1. It means that the first digit is multiplied by 7, the second one by 3, the third one by 1, the fourth one by 7, etc. The last

number of the obtained result is the control digit. We can see this procress in the following instance. We have the field 12345678Z. We separe the characters (1 2 3 4 5 6 7 8 Z) and we change letter Z into a number (it corresponds to 25). Then, we do the sum of the numbers with weight 7-3-1:

$$1 \cdot 7 + 2 \cdot 3 + 3 \cdot 1 + 4 \cdot 7 + 5 \cdot 3 + 6 \cdot 1 + 7 \cdot 7 + 8 \cdot 3 + 9 \cdot 1 + 25 \cdot 7 = 163$$

So that the control number would be 3.

The target of this problem is to write a program that, given the data of a DNI, computes the control number that correspond to the field number 14. Warning: concatenating 2 fields means to put the second one after the first one.

Input

The input consists of a sequence of the data fields of different DNIs necessary to compute the control numbers (3, 6 and 9). The fields are given in a line, separated by a space and in the order previously explained. The field 3 is a eight-figure number with a character (NIF). The field 6 is a six-figure number and the field 9 is a six-figure number. The characters will always be uppercase letters between 'A' and 'Z' (there is not lowercase letters nor accents).

Output

For each given number, your program must print a line with the control number that corresponds to the field number 13.

Sample in	Sample output					
12345678Z	741015	090322	4			
47776371N	810412	120803	0			
39430551H	830105	120117	4			
07213148A	760407	080723	8			
12345678Z	123456	123456	0			

Problem information

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