

Problem 18 – PIN Validation

You're part of a very promising team of specialists, which is hired by the parliament to recreate the new electronic government in Bulgaria.

Your task is to write a program that reads data about the voters in an electronic poll: **first and last name, gender and PIN (EGN in Bulgarian) and then verifies the PIN**. The program should generate a **JSON string** for DB insert **if the data is correct**, or print **"Incorrect data"** in `<h2></h2>` heading tags.

The PIN is a 10-digit number, which consists of the following:

- **First 6 digits** are the date of birth of the citizen in format **yymmdd**; if the person is born **before 1900**, the **mm** digits are **+20**. If the person is born **after 2000**, the **mm** digits are **+40**
- **Next 3 digits** show the region, based on the **regional city of birth**;
- **The last of the above 3 digits** shows the gender – **even for male** and **odd for female**;
- **One digit for checksum**. In order to get the correct checksum you need to **multiply each of the first 9 digits with [2,4,8,5,10,9,7,3,6]** respectively, **sum all** and then **divide by 11**. The **remainder** is the **checksum**.
NOTE: if the remainder is 10, then the checksum is 0 (source: <http://www.grao.bg/esgraon.html>)

Example: **9912164756** as PIN we check the following:

- **991216** – translates to 16th December 1999 – **correct date**
 - **995216** – translates to 16th December 2099
 - **993216** – translates to 16th December 1899
- **475** – shows the regional city is Plovdiv
- **5** – shows the PIN is of a girl – **correct gender**
- $9*2 + 9*4 + 1*8 + 2*5 + 1*10 + 6*9 + 4*7 + 7*3 + 5*6 = 215$. $215 / 11 = 19$ (remainder **6**) – **correct checksum**

Input

The input will be read from the console. The **first and last name** will be received on the first line. The **gender** will be received on the second line. The **PIN** will be received on the third line.

Output

If the PIN is not correct or the data is not in the format described, **"Incorrect data"** should be printed. Otherwise, **print a JSON string** with all the data (follow the format provided below).

Constraints

- The name string will contain names. You should check if there are 2 words, each starting with an uppercase letter.
- Gender will always be 'male' or 'female'.
- PIN will be a number. You should check if it is a 10-digit number.

Examples

Input	Output
Ana Ivanova female 9912164756	<pre>{"name": "Ana Ivanova", "gender": "female", "pin": "9912164756"}</pre>
Input	Output
Ivan Petrov male 1234567890	<pre><h2>Incorrect data</h2></pre>