***The following additional problem should be solved by the groups having three members, other groups may ignore.***

**Additional Problem: Aadhar Card Verification**

Government of India is looking for a scheme through which an 'Aadhar Card' can be validated without accessing the Aadhar database. This is because accessing Internet, in many places in India, is almost impossible. One of the research scholars has proposed the following scheme to solve the issue.

The Aadhar number consists of 20 alphanumeric characters.

*Scheme for generating Aadhar number*:

<4 characters for state code (follow Table 1)> <first 4 characters of the name (and family name, if name is of less than 4 character) of the card holder> <12 decimal numbers>

Example: WB36 SUBR 6094 1643 6690

*Scheme for validation*:

1. Count total number of alphanumeric characters present in the Aadhar number. If the number is not 20, it is not required to see anything else but produce error message like "Invalid Aadhar". If the number of characters is 20, then check the scheme followed to generate the 20 digit Aadhar number. In case an error has been observed, report the exact reason for the error. E.g.,

    a. State code does not exist

    b. Special symbol should not be present in Aadhar number.

    c. The Aadhar number provided is not in correct format.

2. In case, where no error is found in the format,

    a. Covert the alphanumeric Aadhar number into digits by replacing character A or a=35, B or b=34, - - -, and Z or z=10

    b. Consider the string as a decimal integer number and compute the sum of all the digits

    c. Divide the sum of digits by 97.

        If the result is 0, then the Aadhar card is valid, otherwise the card is fake.

Table 1: State code details.

| Andaman and Nicobar Islands | AN01 | Goa | GA10 | Maharashtra | MH19 | Rajasthan | RJ28 |
|---|---|---|---|---|---|---|---|
| Andhra Pradesh | AP02 | Gujarat | GJ11 | Meghalaya | ML20 | Sikkim | SK29 |
| Arunachal Pradesh | AR03 | Haryana | HR12 | Manipur | MN21 | Tamil Nadu | TN30 |
| Assam | AS04 | Himachal Pradesh | HP13 | Madhya Pradesh | MP22 | Tripura | TR31 |
| Bihar | BR05 | Jharkhand | JH14 | Mizoram | MZ23 | Telangana | TS32 |
| Chhattisgarh | CG06 | Jammu and Kashmir | JK15 | Nagaland | NL24 | Rajasthan | RJ33 |

| Chandigarh | CH07 | Karnataka | KA16 | Odisha | OD25 | Uttarakhand | UK34 |
|---|---|---|---|---|---|---|---|
| Daman and Diu | DD08 | Kerala | KL17 | Punjab | PB26 | Uttar Pradesh | UP35 |
| Dadra and Nagar Haveli | DN09 | Lakshadweep | LD18 | Puducherry | PY27 | West Bengal | WB36 |

**Examples:**

```
> validateAadhar "WB36 SUBR 6094 1643 66900"
  Invalid input, Aadhar number consist of more than 20 characters.

> validateAadhar "WB36 AJAY 6-94 1643 6690"
  Invalid input, special symbol is not allowed.

> validateAadhar "WB36 UJJW 6091 1643 6690"
  The aadhar card "WB36 UJJW 6091 1643 6690" is valid.

> validateAadhar "WB36 UJJW 6094 1643 6699"
  The Aadhar card "WB36 UJJW 6094 1643 6699" is fake.
```