Validating Credit Card Numbers

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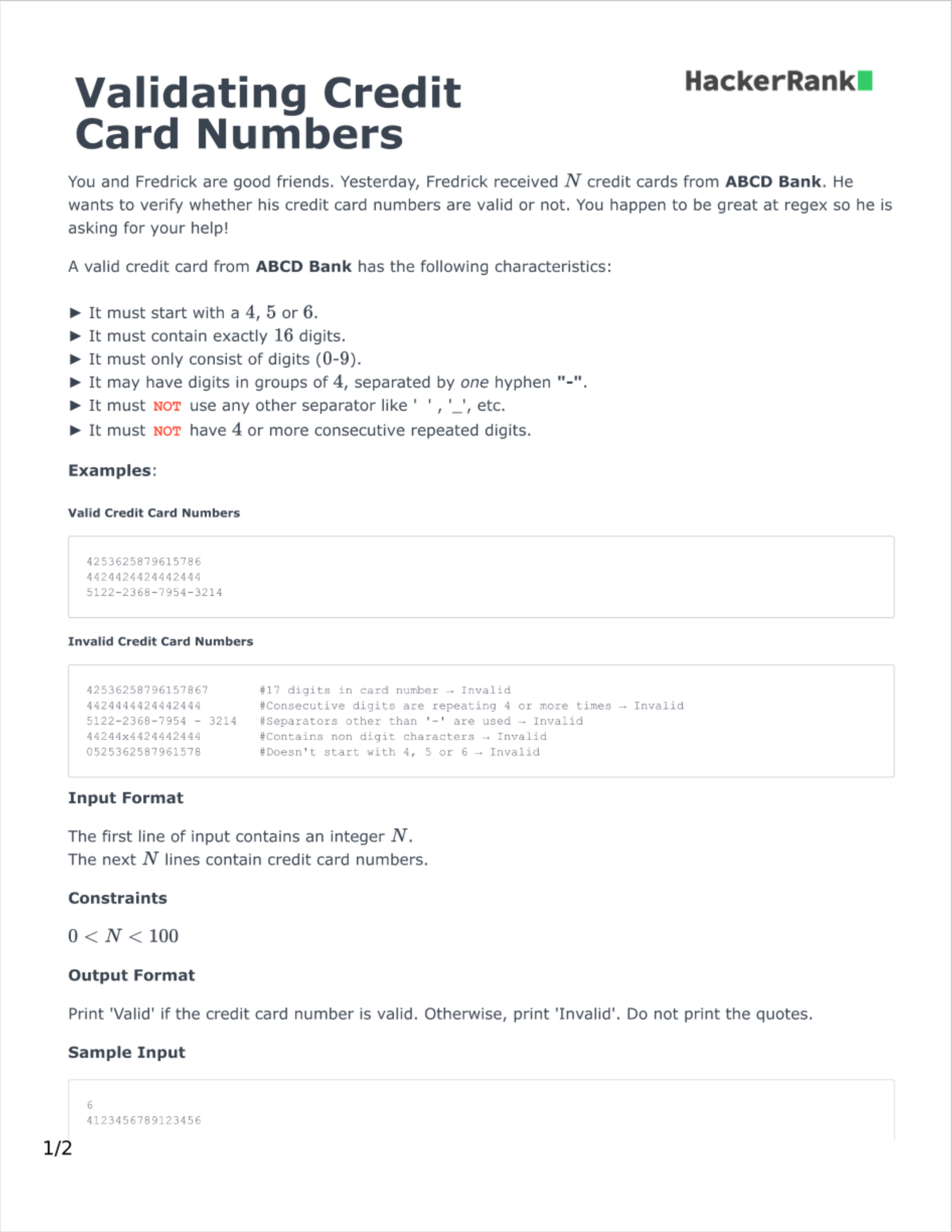


Validating Credit Card Numbers

You and Fredrick are good friends. Yesterday, Fredrick received N credit cards from **ABCD Bank**. He wants to verify whether his credit card numbers are valid or not. You happen to be great at regex so he is asking for your help!

A valid credit card from **ABCD Bank** has the following characteristics:

- It must start with a 4, 5 or 6.
- It must contain exactly 16 digits.
- It must only consist of digits (0-9).
- It may have digits in groups of 4, separated by *one* hyphen **"-"**.
- It must `NOT` use any other separator like ' ' , '_', etc.
- It must `NOT` have 4 or more consecutive repeated digits.

Examples:

Valid Credit Card Numbers

```
4253625879615786
4424424424442444
5122-2368-7954-3214
```

Invalid Credit Card Numbers

```
42536258796157867       #17 digits in card number → Invalid
4424444424442444        #Consecutive digits are repeating 4 or more times → Invalid
5122-2368-7954 - 3214   #Separators other than '-' are used → Invalid
44244x4424442444        #Contains non digit characters → Invalid
0525362587961578        #Doesn't start with 4, 5 or 6 → Invalid
```

Input Format

The first line of input contains an integer N.
The next N lines contain credit card numbers.

Constraints

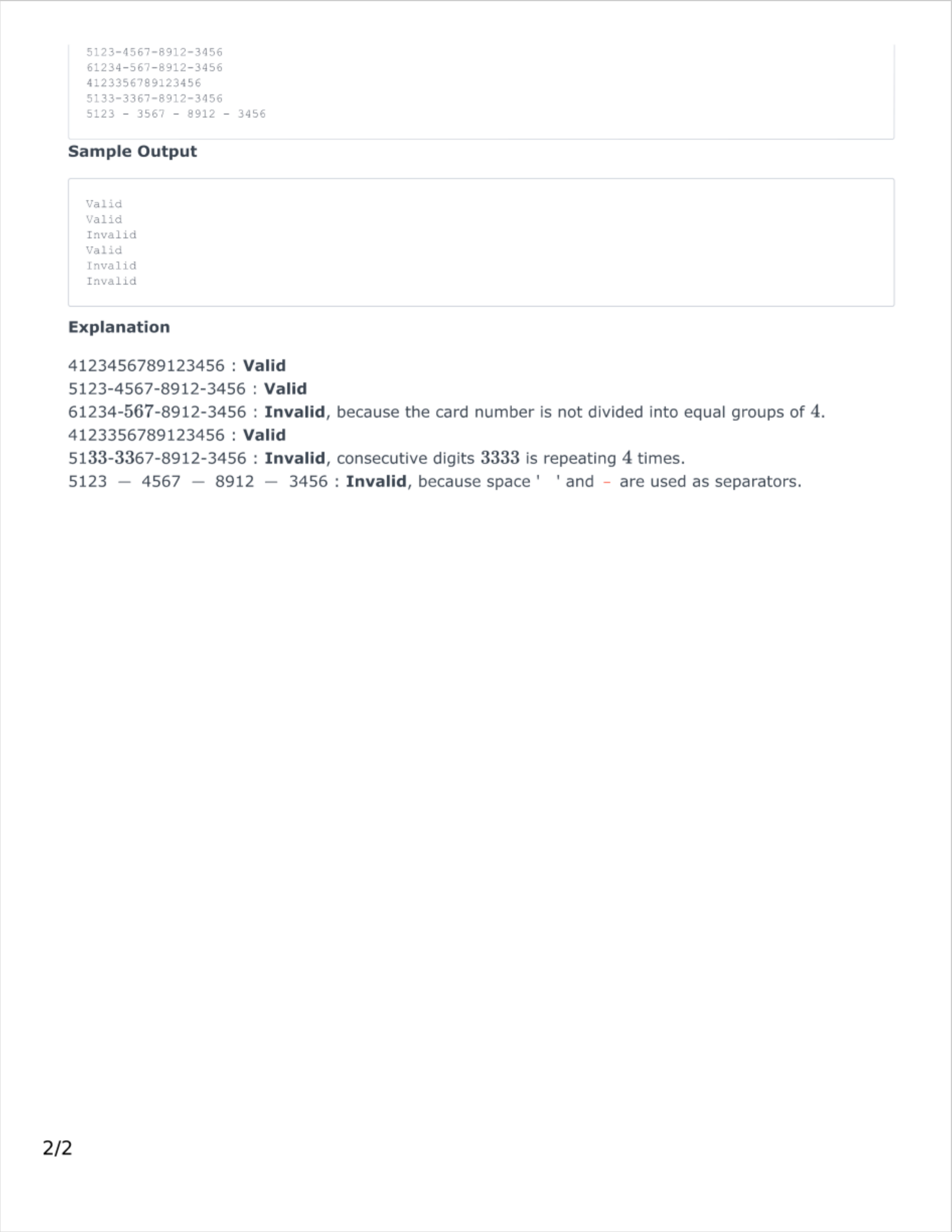
$0 < N < 100$

Output Format

Print 'Valid' if the credit card number is valid. Otherwise, print 'Invalid'. Do not print the quotes.

Sample Input

```
6
4123456789123456
```



```
5123-4567-8912-3456
61234-567-8912-3456
4123356789123456
5133-3367-8912-3456
5123 - 3567 - 8912 - 3456
```

Sample Output

```
Valid
Valid
Invalid
Valid
Invalid
Invalid
```

Explanation

4123456789123456 : **Valid**
5123-4567-8912-3456 : **Valid**
61234-567-8912-3456 : **Invalid**, because the card number is not divided into equal groups of 4.
4123356789123456 : **Valid**
5133-3367-8912-3456 : **Invalid**, consecutive digits 3333 is repeating 4 times.
5123 — 4567 — 8912 — 3456 : **Invalid**, because space '   ' and - are used as separators.

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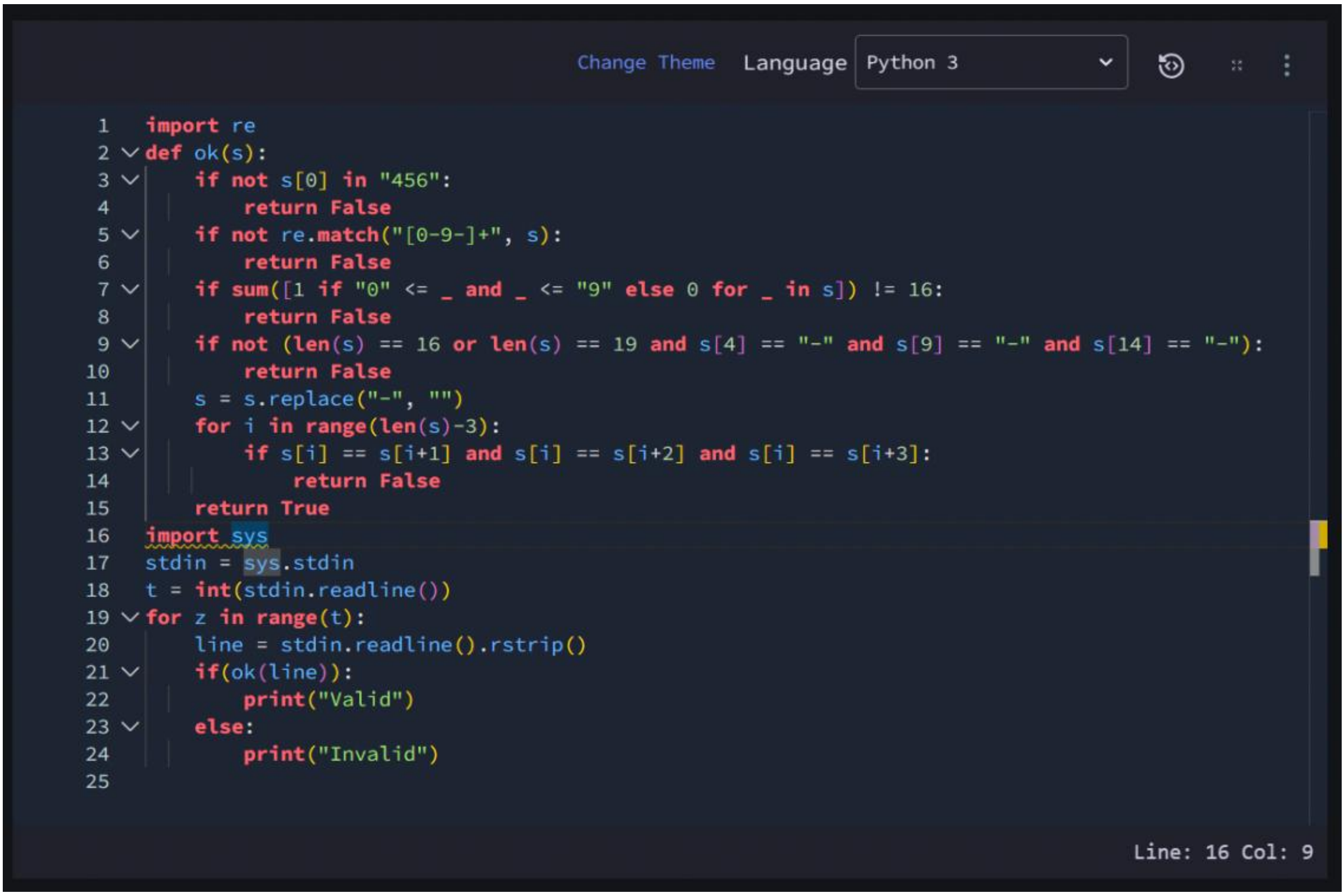

Language Python 3

```python
import re
def ok(s):
    if not s[0] in "456":
        return False
    if not re.match("[0-9-]+", s):
        return False
    if sum([1 if "0" <= _ and _ <= "9" else 0 for _ in s]) != 16:
        return False
    if not (len(s) == 16 or len(s) == 19 and s[4] == "-" and s[9] == "-" and s[14] == "-"):
        return False
    s = s.replace("-", "")
    for i in range(len(s)-3):
        if s[i] == s[i+1] and s[i] == s[i+2] and s[i] == s[i+3]:
            return False
    return True
import sys
stdin = sys.stdin
t = int(stdin.readline())
for z in range(t):
    line = stdin.readline().rstrip()
    if(ok(line)):
        print("Valid")
    else:
        print("Invalid")

```

Line: 16 Col: 9