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论坛导

航



07. However, odd things can happen! Credit card numbers can appear in 08. (like if someone puts it in the wrong field on a form). 09. In this exercise, we will be writing a filter to ensure that any card numbers that may have accidentally been put into a string 11. get redacted out before logging 13. 14. In this part, we will write a function named redact_card_numbers a string as input and returns a string with potential credit card numbers 16. redacted. * We can assume that the input string contains tokens separated 18. by a single whitespace. * Credit card numbers are represented by strings that contain anywhere from 13-16 digits (inclusive). * The function will analyze the input string and look for any 20. token that looks 21. like a credit card (i.e. it contains between 13-16 digits). The function will then replace all of the digits with an "x" 22. character 23. EXCEPT for the last 4 digits for that token. It will then return the full string with the data redacted.

```
25.
     Examples
27.
     // 16 digit number gets redacted, other tokens will not be
28.
29.
     redact_card_numbers("1234567890123456 is a number")
       returns "xxxxxxxxxxxx3456 is a number"
30.
31.
     // No credit card found, no transformation needed
33.
     redact_card_numbers("basic_string 12345 no redaction")
       returns "basic_string 12345 no redaction"
34.
35.
     // 16 digit number in the middle of the string is redacted, other
     tokens are left alone.
37.
     redact_card_numbers("an embedded number 1234567890123456 in the
       returns "an embedded number xxxxxxxxxxxx3456 in the string"
38.
39.
40.
41.
     PART 2
42.
43.
     Fortunately, credit card numbers have some additional structure
44.
     For example:
45.
46.
     * Cards issued by Visa will start with a 4 and will only have 13
     OR 16 digits in them.
48.
    * Cards issued by American Express will ALWAYS have the first two
     digits of 34 or 37
        and will always contain 15 digits.
49.
     ^{\star} Cards issued by Mastercard will ALWAYS be 16 digits and will
     ALWAYS have the
       first two digits between 51-55 (inclusive) OR will have the
51.
     first four digits
52.
        between 2221-2720 (inclusive)
53.
    Modify your redact_card_numbers function to only redact valid
     Mastercard, Visa, or
55. American Express credit card numbers. Like the previous part, the
     all of the digits with an "x" character EXCEPT for the last 4
56.
     digits.
57.
58.
     Examples
59.
60.
     \ensuremath{//} No credit card found, no transformation needed
61.
     redact_card_numbers("basic_string 12345 no redaction")
       returns "basic_string 12345 no redaction"
62.
63.
64. // 16 digit number does not get redacted as it does not match
```

	brand criteria
65.	redact_card_numbers("1234567899123456 is not a card")
66.	returns "1234567890123456 is not a card"
67.	13 not a card
68.	// 16 digit number Visa does get redacted as it matches brand criteria
69.	redact_card_numbers("4234567890123456 is a valid visa")
70.	returns "xxxxxxxxxxxx3456 is a valid visa"
	DELY VILLE IS CT VOLUMNIANANA
71.	
72.	
73.	PART THREE
74.	
75.	This second function works well but it is still too greedy! However, besides these brand
76.	specific rules, credit card numbers have another attribute we can leverage to improve our
77.	ability to identify them.
78.	
79.	All valid Visa, Mastercard, and American Express card numbers use a checksum algorithm to
80.	minimize the chance of incorrect data entry.
81.	
82.	The algorithm works as follows:
83.	
84.	* Start at the rightmost digit of the string and double the value of every second digit
85.	in the string (starting with the second rightmost digit)
86.	* If any value is greater than or equal to 10, we subtract 9
301	(e.g. if the original value
87.	was 7 and it got doubled to 14, we would replace it with a 5 since 14 - 9 = 5) $$
88.	* Sum up the values. If the sum modulo 10 is 0 (e.g. the number is evenly divisible by 10),
89.	then it is a valid card number
90.	
91.	As an example, consider the four digit number 7773
92.	
93.	The checksum algorithm, would operate in the following manner:
94.	
	Original Number: 7 7 7 2
95.	Original Number: 7 7 7 3
96.	Double 2nd digits: 14 7 14 3
97.	Minus 9 of values >= 10: 5 7 5 3
98.	Take the sum: 20
99.	Modulus the sum: 20 % 10 == 0
100.	
101.	Thus the number 7773 DOES pass the checksum!
102.	
103.	Modify your redact_card_numbers function to only redact card
250.	numbers that meet both the brand
104.	rules you coded in the previous part AND the pass the checksum

```
algorithm
105
      Like the previous parts, the redaction will replace all of the
      digits with an "x" character
      EXCEPT for the last 4 digits.
107.
108
110
111.
      \ensuremath{//} No credit card found, no transformation needed
112.
      redact_card_numbers("basic_string 12345 no redaction")
113.
        returns "basic_string 12345 no redaction"
114.
115.
      \ensuremath{//} 16 digit number does not get redacted as it does not match
116.
      redact_card_numbers("1234567890123456 is not valid")
117.
        returns "1234567890123456 is not valid"
118.
119.
      // 16 digit number Visa with bad checksum does not get redacted
      redact_card_numbers("42111111111111111 is not valid")
120.
121.
        returns "42111111111111111 is not valid"
122.
123.
      \ensuremath{//} 16 digit number Visa with good checksum does get redacted
124.
      redact_card_numbers("4234567890123456 is valid")
125.
        returns "xxxxxxxxxxxx3456 is valid"
126.
127.
```

补充内容 (2022-02-25 22:30 +8:00):

后续就是,挂了。他家硬性条件写完并且test完part 3.自己碰到了个新题运气不好没办法,读题都要时间。希望贡献了这道题能帮助以后面试的兄弟姐妹们。





〇 评分



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    Ditfans 2022-5-18 08:02:07 │ 只看该作者

                                                                   → 本楼: ይ 2
                                                                                                     0 🦃
                                                                         全局:
                   第一问:
                          public String redactCardNumbers1(String in) {
                                  return Pattern.compile("(^|\\s+)
                     02.
                          03.
                                      int length = matchResult.group(2).length();
                                     String replace = "x".repeat(length - 4) +
                     Θ4.
                          matchResult.group(2).substring(length - 4);
                     05.
                                     return
                           matchResult.group().replace(matchResult.group(2), replace);
                     06.
                                  }));
                     Θ7.
                           复制代码
                   第二问:
                          public String redactCardNumbers2(String in) {
                     01.
                     02.
                                  Pattern[] patterns = new Pattern[4];
                     03.
                     Θ4.
                                  patterns[0] = Pattern.compile("(^|\\s+)
                          (4\\d{15}|4\\d{12})\\s+");
                     05.
                                  // amex
                                  patterns[1] = Pattern.compile("(^|\\s+)
                     06.
                          (34\\d{13}|37\\d{13})\\s+");
                     Θ7.
                                  // master 1
                                  patterns[2] = Pattern.compile("(^|\)(5[1-
                          5]\\d{14})\\s+");
                     09.
                                  // generated by https://3widgets.com
                     10.
                                  // master 2
                                  patterns[3] = Pattern.compile("(^|\\s+)((222[1-9]|22[3-
                     11.
                          9]\\d|2[3-6]\\d{2}|27[01]\\d|2720)\\d{12})\\s+");
                     12.
                     13.
                                  for (Pattern p : patterns) {
                     14.
                                      Matcher matcher = p.matcher(in);
                     15
                                      if (matcher.groupCount() > 1) {
```

return matcher.replaceAll(matchResult -> {

int length = matchResult.group(2).length();

13 258 243

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16.

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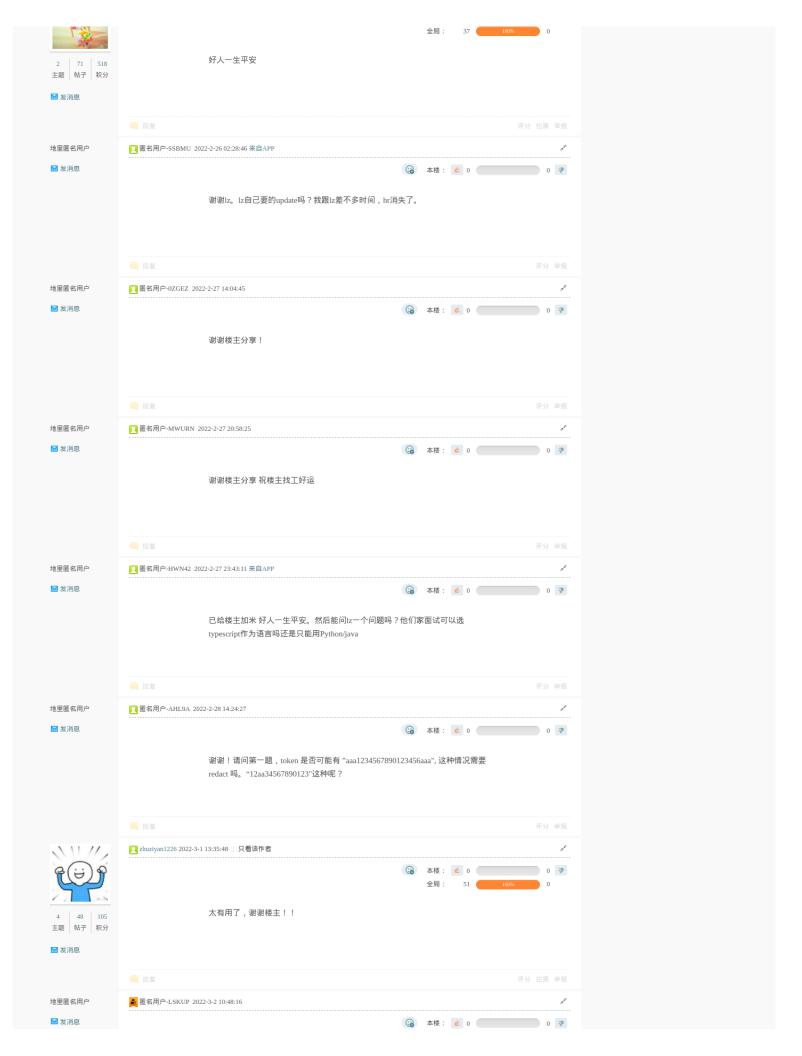
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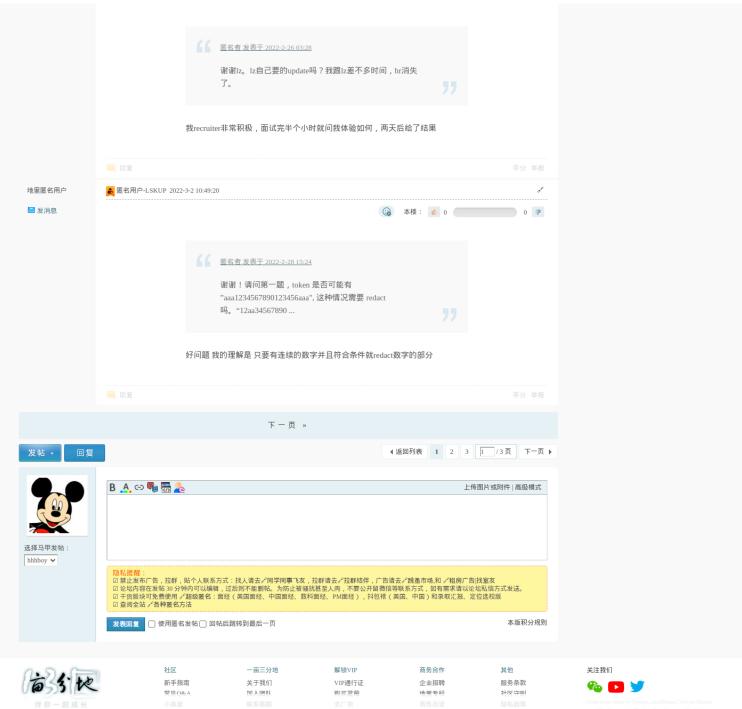
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