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## Java 8 String streams and finding the first non repeated character with functional programming

Posted on [December 10, 2014](#) by [Arulkumaran Kumaraswamipillai](#) — No

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**Q1.** Find the first non repeated character in a given string input using Java 8 or later?

**A1.** Extends [Find the first non repeated character in a given string input](#) with **Java 8 functional programming**.

```
1
2 import java.util.*;
3 import java.util.function.*;
4 import java.util.stream.Collectors;
```

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```

5
6 public class FirstNonRepeatedCharacter {
7
8     public static void main(String[] args) {
9
10         System.out.println(" Please enter the in
11         Scanner in = new Scanner(System.in); // read
12         String input = in.nextLine();
13         Character firstNonRepeatedChar = logic(input
14         System.out.println("The first non repeate
15         in.close();
16     }
17
18     private static Character logic(String input) {
19         Character result = input.chars() /
20         .mapToObj(i -> Character.toLowerCase
21         .collect(Collectors.groupingBy(Func
22         .entrySet().stream()
23         .filter(entry -> entry.getValue() =
24         .map(entry -> entry.getKey())
25         .findFirst().get();
26
27         return result;
28     }
29 }
30

```

Examples to understand string streams:

## Example 1

```

1 public class Java8StringStream {
2     public static void main(String[] args) {
3         "Cactus".chars().forEach(c -> System.out.prin
4     }
5 }

```

Output:

```

1 C
2 a
3 c
4 t
5 u
6 s

```

## Example 2

```

1 public class Java8StringStream {
2     public static void main(String[] args) {
3         "Cactus".chars()
4         .mapToObj(c -> Character.valueOf((char)c))
5         .findFirst()

```

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```

6     .ifPresent(System.out::println);
7   }
8 }
9

```

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**Output:**

```

1 C

```

## Example 3

```

1 import java.util.stream.Collectors;
2
3 public class Java8StringStream {
4     public static void main(String[] args) {
5         "stress".chars()
6         .mapToObj(c -> Character.valueOf((char)c)
7         .collect(Collectors.toSet()) //remove duplicate
8         .forEach(s -> System.out.println(s));
9     }
10 }
11
12

```

**Output:**

```

1 e
2 t
3 s
4 r

```

## Example 4

```

1 import java.util.function.Function;
2 import java.util.stream.Collectors;
3
4 public class Java8StringStream {
5     public static void main(String[] args) {
6         "stress".chars()
7         .mapToObj(c -> Character.valueOf((char)c)
8         .collect(Collectors.groupingBy(Function.identity(), Collectors.toList()))
9         .entrySet()
10        .stream()
11        .forEach(s -> System.out.println(s));
12    }
13 }

```

**Output:**

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```

1 e=[e]
2 t=[t]
3 s=[s, s, s]
4 r=[r]
5

```

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## Example 5

```

1
2 public class Java8StringStream {
3     public static void main(String[] args) {
4         "stress".chars()
5         .mapToObj(c -> Character.valueOf((char)c
6         .sorted((s1, s2) -> {
7             System.out.printf("sort: %s; %s\n", s1, s2);
8             return s1.compareTo(s2);
9         })
10        .forEach(s -> System.out.println(s));
11    }
12 }
13
14

```

### Output:

```

1
2 e
3 r
4 s
5 s
6 s
7 t
8

```

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