findNeedles() API Documentation

Overview

`findNeedles(String haystack, String[] needles);` is an API method that can search up to five words from an input string array and count the number of occurrences for each word within the input string.

Input Variable	Description	Example
`haystack`	Any string of text of any length.	"This is a test string."
`needles`	An array of word strings. These words are the search arguments.	{"Search", "test", "hello"}

The input `haystack` string will be split based on if the string contains the following characters:

- `\` Blank space character
- `\"` Double quotes character
- `\'` Single quote character
- `\t` Tab space character
- `\n` New line character
- `\b` Back space character
- `\f` Form feed character
- `\r` Carriage return character

Calling the Method

To call the method, you would need an input string `haystack` and an input string array `needles`.

Example:

```
String haystack = "This is an example string!";
String[] needles = {"example","here","string"};
findNeedles(haystack, needles);`
```

Limitations

- This method can only search up to five words. Anything more would surface the message "Too many words!"
- The method input arguments are case sensitive. If you search for the word `happy` and the string contains the text `"Happy to see you!"`, the method would output `happy: 0`.
- For inputs that contains punctuation, the method recognizes them as different words. For example, `Greetings` and `Greetings!` are considered two seperate words.
- The method does not recognize phrases, so the search words must be singular.
- The method does not recognize duplicate search strings. For example, if you have the array `{"cat", "dog", "cat"}` to search within the string `"John has a cat"`, the method would return a seperate count for each `cat` in the search array. The output: `cat: 1 dog: 0 cat: 1`

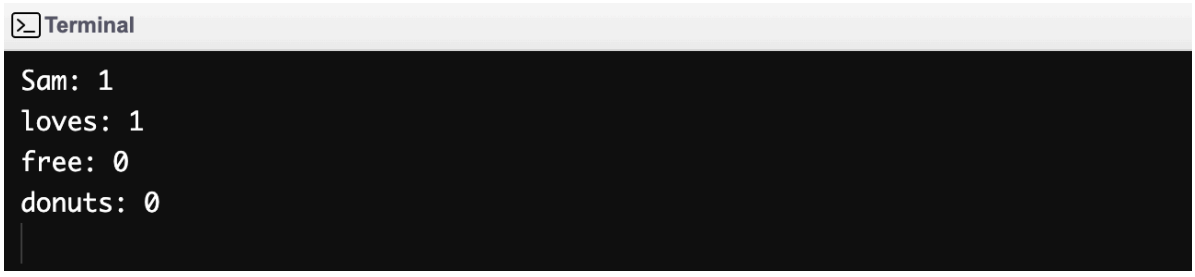
Test Cases

We have a variety of test cases to show some outputs and limitations.

Case #1 - We have needles in the haystack

```
String haystack = "Sam loves green eggs and ham";
String[] needles = {"Sam","loves","free","donuts"};
findNeedles(haystack, needles);
```

Console Output



Case #2 - Does not detect “shine” due to puncutation

```
String haystack = "Rise and shine, it's morning time";
String[] needles = {"xhbau","times","Rise","shine"};
findNeedles(haystack, needles);
```

Console Output

```
Terminal
xhbau: 0
times: 0
Rise: 1
shine: 0
```

Case #3 - Detects “I” because of the haystack split

```
String haystack = "I'm happy to be here";
String[] needles = {"I", "live", "here"};
findNeedles(haystack, needles);
```

Console Output

```
Terminal
I: 1
live: 0
here: 1
```

Case #4 - Array greater than five words

```
String haystack = "Happy to be in San Francisco";
String[] needles = {"22","live","8","in","xyz","8129"};
findNeedles(haystack, needles);
```

Console Output

Terminal

```
Too many words!
```

Case #5 - Duplicate search words in needles array

```
String haystack = "Test string saying hello!";
String[] needles = {"Test", "Test", "cheese"};
findNeedles(haystack, needles);
```

Console Output

Terminal

```
Test: 1
Test: 1
cheese: 0
```

Case #6 - Case sensitive

```
String haystack = "John Doe has a cat named Cat";
String[] needles = {"John", "cat", "Cat"};
findNeedles(haystack, needles);
```

Console Output

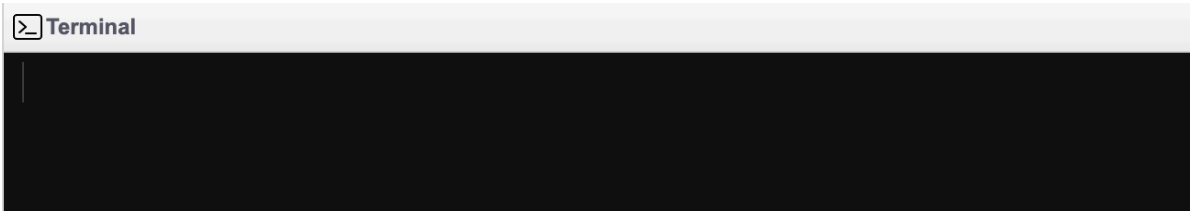
Terminal

```
John: 1
cat: 1
Cat: 1
```

Case #7 - Empty Parameters

```
String haystack = "";
String[] needles = {};
findNeedles(haystack, needles);
```

Console Output



Case #8 - Empty Array

```
String haystack = "Test string saying hello!";
String[] needles = {};
findNeedles(haystack, needles);
```

Console Output