

# Problem 1078: Occurrences After Bigram

## Problem Information

Difficulty: [Easy](#)

Acceptance Rate: 0.00%

Paid Only: No

## Problem Description

Given two strings

first

and

second

, consider occurrences in some text of the form

"first second third"

, where

second

comes immediately after

first

, and

third

comes immediately after

second

.

Return

an array of all the words

third

for each occurrence of

"first second third"

.

Example 1:

Input:

text = "alice is a good girl she is a good student", first = "a", second = "good"

Output:

["girl", "student"]

Example 2:

Input:

text = "we will we will rock you", first = "we", second = "will"

Output:

["we", "rock"]

Constraints:

$1 \leq \text{text.length} \leq 1000$

text

consists of lowercase English letters and spaces.

All the words in

text

are separated by

a single space

.

$1 \leq \text{first.length}, \text{second.length} \leq 10$

first

and

second

consist of lowercase English letters.

text

will not have any leading or trailing spaces.

## Code Snippets

**C++:**

```
class Solution {  
public:  
    vector<string> findOccurrences(string text, string first, string second) {  
  
    }  
};
```

## Java:

```
class Solution {  
    public String[] findOccurrences(String text, String first, String second) {  
  
    }  
}
```

## Python3:

```
class Solution:  
    def findOccurrences(self, text: str, first: str, second: str) -> List[str]:
```

## Python:

```
class Solution(object):  
    def findOccurrences(self, text, first, second):  
        """  
        :type text: str  
        :type first: str  
        :type second: str  
        :rtype: List[str]  
        """
```

## JavaScript:

```
/**  
 * @param {string} text  
 * @param {string} first  
 * @param {string} second  
 * @return {string[]}  
 */  
var findOccurrences = function(text, first, second) {  
  
};
```

## TypeScript:

```
function findOccurrences(text: string, first: string, second: string):  
    string[] {  
  
};
```

**C#:**

```
public class Solution {  
    public string[] FindOccurrences(string text, string first, string second) {  
  
    }  
}
```

**C:**

```
/**  
 * Note: The returned array must be malloced, assume caller calls free().  
 */  
char** findOccurrences(char* text, char* first, char* second, int* returnSize)  
{  
  
}
```

**Go:**

```
func findOccurrences(text string, first string, second string) []string {  
  
}
```

**Kotlin:**

```
class Solution {  
    fun findOccurrences(text: String, first: String, second: String):  
        Array<String> {  
  
    }  
}
```

**Swift:**

```
class Solution {  
    func findOccurrences(_ text: String, _ first: String, _ second: String) ->  
        [String] {  
  
    }  
}
```

## Rust:

```
impl Solution {  
    pub fn find_ocurrences(text: String, first: String, second: String) ->  
        Vec<String> {  
  
    }  
}
```

## Ruby:

```
# @param {String} text  
# @param {String} first  
# @param {String} second  
# @return {String[]}  
def find_ocurrences(text, first, second)  
  
end
```

## PHP:

```
class Solution {  
  
    /**  
     * @param String $text  
     * @param String $first  
     * @param String $second  
     * @return String[]  
     */  
    function findOcurrences($text, $first, $second) {  
  
    }  
}
```

## Dart:

```
class Solution {  
    List<String> findOcurrences(String text, String first, String second) {  
  
    }  
}
```

## Scala:

```

object Solution {
  def findOccurrences(text: String, first: String, second: String):
  Array[String] = {

  }
}

```

## Elixir:

```

defmodule Solution do
  @spec find_ocurrences(text :: String.t, first :: String.t, second ::
String.t) :: [String.t]
  def find_ocurrences(text, first, second) do

  end

end

```

## Erlang:

```

-spec find_ocurrences(Text :: unicode:unicode_binary(), First ::
unicode:unicode_binary(), Second :: unicode:unicode_binary()) ->
[unicode:unicode_binary()].
find_ocurrences(Text, First, Second) ->
.

```

## Racket:

```

(define/contract (find-ocurrences text first second)
  (-> string? string? string? (listof string?))
)

```

# Solutions

## C++ Solution:

```

/*
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique

```

```

* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public:
    vector<string> findOccurrences(string text, string first, string second) {

    }

};

```

### Java Solution:

```

/**
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

class Solution {
    public String[] findOccurrences(String text, String first, String second) {

    }

}

```

### Python3 Solution:

```

"""
Problem: Occurrences After Bigram
Difficulty: Easy
Tags: array, string

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
"""

```

```

class Solution:
    def findOccurrences(self, text: str, first: str, second: str) -> List[str]:
        # TODO: Implement optimized solution
        pass

```

### Python Solution:

```

class Solution(object):
    def findOccurrences(self, text, first, second):
        """
        :type text: str
        :type first: str
        :type second: str
        :rtype: List[str]
        """

```

### JavaScript Solution:

```

/**
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

/**
 * @param {string} text
 * @param {string} first
 * @param {string} second
 * @return {string[]}
 */
var findOccurrences = function(text, first, second) {

};

```

### TypeScript Solution:

```

/**
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

function findOccurrences(text: string, first: string, second: string):
string[] {

};

```

### C# Solution:

```

/*
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

public class Solution {
    public string[] FindOccurrences(string text, string first, string second) {

    }
}

```

### C Solution:

```

/*
 * Problem: Occurrences After Bigram
 * Difficulty: Easy
 * Tags: array, string
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)

```

```

* Space Complexity: O(1) to O(n) depending on approach
*/

/**
* Note: The returned array must be malloced, assume caller calls free().
*/
char** findOccurrences(char* text, char* first, char* second, int* returnSize)
{

}

```

### Go Solution:

```

// Problem: Occurrences After Bigram
// Difficulty: Easy
// Tags: array, string
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

func findOccurrences(text string, first string, second string) []string {

}

```

### Kotlin Solution:

```

class Solution {
    fun findOccurrences(text: String, first: String, second: String):
        Array<String> {

    }
}

```

### Swift Solution:

```

class Solution {
    func findOccurrences(_ text: String, _ first: String, _ second: String) ->
        [String] {

    }
}

```

```
}
```

### Rust Solution:

```
// Problem: Occurrences After Bigram
// Difficulty: Easy
// Tags: array, string
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

impl Solution {
    pub fn find_occurrences(text: String, first: String, second: String) ->
        Vec<String> {

    }
}
```

### Ruby Solution:

```
# @param {String} text
# @param {String} first
# @param {String} second
# @return {String[]}
def find_occurrences(text, first, second)

end
```

### PHP Solution:

```
class Solution {

    /**
     * @param String $text
     * @param String $first
     * @param String $second
     * @return String[]
     */
    function findOccurrences($text, $first, $second) {
```

```
}  
}
```

### Dart Solution:

```
class Solution {  
  List<String> findOccurrences(String text, String first, String second) {  
  
  }  
}
```

### Scala Solution:

```
object Solution {  
  def findOccurrences(text: String, first: String, second: String):  
    Array[String] = {  
  
  }  
}
```

### Elixir Solution:

```
defmodule Solution do  
  @spec find_occurrences(text :: String.t, first :: String.t, second ::  
    String.t) :: [String.t]  
  def find_occurrences(text, first, second) do  
  
  end  
end
```

### Erlang Solution:

```
-spec find_occurrences(Text :: unicode:unicode_binary(), First ::  
  unicode:unicode_binary(), Second :: unicode:unicode_binary()) ->  
  [unicode:unicode_binary()].  
find_occurrences(Text, First, Second) ->  
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```

### Racket Solution:

```
(define/contract (find-ocurrences text first second)
  (-> string? string? string? (listof string?))
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