

Algorithms and Data Structures

Lecture 2

September 13, 2019

Examples

Sort 2 words alphabetically and then check if they're identical

- Replace characters *Score out already read characters*

```
for each e11 in str1
    found = false
    i = 0
    while not found and i < len(str2)
        if e11 == str2[i]
            delete str2[i] = None
            found = true
        index++
    if not found
        return false
    return true
```

- This will take $O(n^2)$ (*Not efficient*) Better way:

- Use a dictionary count
- Create dictionary

```
for each e11 in str1
    if e11 is key in dict
        dict[e11] += 1
    else
        dict[e11] = 1
for e12 in str2
    if e12 not in dict
        return false
    else
        dict[e12] -= 1
```

```
for key in dict
    if dict[key] != 0
        return false
return true
```

Count method:

- Create list of chars in alphabet of size 10,000

- ```
for el1 in str1
 list[el1]++
for el2 in str2
 list[el2]--
for each el in list
 if el != 0
 return false
return true
```

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Sort method:

- ```
sort(str1)
sort(str2)
i = 0
while i < len(str1)
    if str1[i] != str2[i]
        return false
return true
```
