

COP3502

8/21/2023

✓ ~~0~~ Intro

✓ ① webpage - www.cs.ucf.edu/courses/cop3502/fall2023

mysite - www.cs.ucf.edu/~dmarino

✓ ② Course Success

~~③ Random Aside~~

③ How COP3502 is diff COP3223

④ M+MS

⑤ SLM

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In Intro to C \Rightarrow syntax important
efficiency didn't matter
how you solved a problem
didn't matter

CSI \Rightarrow care use of time/memory!!!
care about cleanliness of code.
learn how to analyze run times
learn about known data structures

Sorted List Matching

list 1: 2, 3, 6, 8, 15, 22, 27, 30, 31

list length n

list 2: 1, 3, 4, 5, 6, 11, 12, 22, 26, 29

list length m

Alg 1

for each element x in list 1:

n

for each element y in list 2:

m

if $x == y$:

 Add 1 to result

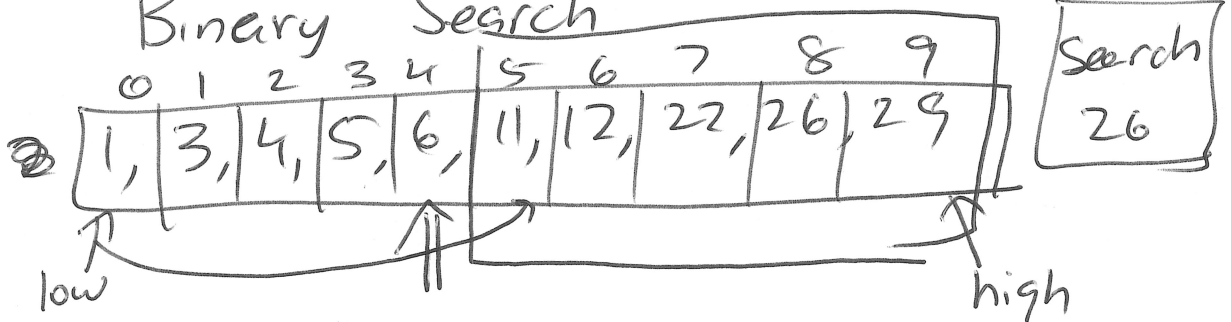
Steps = $n \times m$

Alg 2

Utilize

Binary Search

list:



$(0+9)/2 \rightarrow 4$

```
int bs(int* arr, int low, int high, int val) {
```

```
    int low = 0, high = len - 1;
```

```
    while (low <= high) {
```

```
        int mid = (low + high) / 2;
```

```
        if (val > arr[mid])
```

```
            low = mid + 1;
```

```
        else if (val < arr[mid])
```

```
            high = mid - 1;
```

```
else return 1;  
}  
return 0;
```

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