Project 1 Sequence

CS 211 – Fall 2017

Step 1 – read in data & store in array

- Data file contains multiple integers with two values of -999

```
7537      8410
3756  7667  5312  2062
4136   6846  9902  -999
4136  129
6846  902   -999
```

Step 1 – read in data & store in array

- Data file contains multiple integers with two values of -999

```
7537      8410
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4136  129
6846  902   -999
```
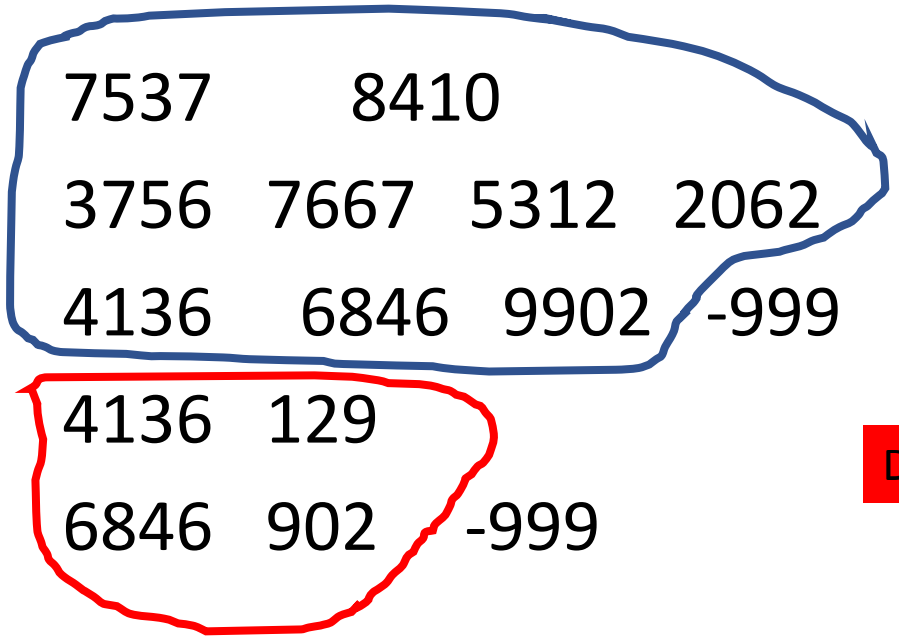

Data to be stored in the array

Step 1 – read in data & store in array

- Data file contains multiple integers with two values of -999



Data to be stored in the array

Data to use for searching

Step 1 – read in data & store in array

- First read in values until first -999 is encountered
- Store these values into an array

arr1:

7537	8410	3756	7667	5312	2062	4136	6846	9902

Dynamic Memory Allocation discussed a bit later

Step 2 – Make of copy of the array

- Allocated enough space for the copy
- Call makeArrayCopy() to transfer values

arr1:

7537	8410	3756	7667	5312	2062	4136	6846	9902

arr2:

7537	8410	3756	7667	5312	2062	4136	6846	9902

Step 3 – Sort one of the arrays

- Call myFavorateSort()
- “Write your own function….” i.e. you can’t call a library routine

arr1:

7537	8410	3756	7667	5312	2062	4136	6846	9902

arr2:

2062	3756	4136	5312	6846	7537	7667	8410	9902

Step 4 – read in the search data

- Loop until second value of -999 is encountered
- For each value, call both linearSearch() and binarySearch()
  - Print our results in main() or whichever function calls the searches

```
7537      8410
3756  7667  5312  2062
4136   6846  9902  -999
4136  129
6846  902  -999
```

Data to use for searching

Step 4 – Doing the Search

- First value is 4136
- Linear Search: Found at position: 6 Number of Comparisons: 7

	0	1	2	3	4	5	6	7	8
arr1:	7537	8410	3756	7667	5312	2062	4136	6846	9902
arr2:	2062	3756	4136	5312	6846	7537	7667	8410	9902

Step 4 – Doing the Search

- First value is 4136
- Binary Search: Found at position: 2 Number of Comparisons: 3

	0	1	2	3	4	5	6	7	8
arr1:	7537	8410	3756	7667	5312	2062	4136	6846	9902
arr2:	2062	3756	4136	5312	6846	7537	7667	8410	9902

Positions visited: 4 (l: 0, h: 8, m: 4), 1 (l: 0, h: 3, m: 1), 2 (l: 2, h: 3, m: 2)

Step 4 – Doing the Search

- Second value is 129
- Linear Search: Not Found at position: -1 Number of Comparisons: 9

	0	1	2	3	4	5	6	7	8
arr1:	7537	8410	3756	7667	5312	2062	4136	6846	9902
arr2:	2062	3756	4136	5312	6846	7537	7667	8410	9902

Step 4 – Doing the Search

- Second value is 129
- Binary Search: Not Found at position: -1 Number of Comp: 4

	0	1	2	3	4	5	6	7	8
arr1:	7537	8410	3756	7667	5312	2062	4136	6846	9902
arr2:	2062	3756	4136	5312	6846	7537	7667	8410	9902

Positions visited:

4 (l: 0, h: 8, m: 4), 1 (l: 0, h: 3, m: 1), 0 (l: 0, h: 0, m: 0) , NF (l: 0, h: -1, m: NF)