

ArrayBinarySearch.cpp

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4 * CLASS      : CS1B
5 * SECTION    : MW 7:30pm
6 * Lab #5     : Binary Search
7 * DUE DATE   : 24 September 2019
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9 * ArrayBinarySearch
10 *
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11 * This function will look for the user's given number in our array
    through
12 * binary search and checks to see if it exists, then it will return
    the
13 * location of that number as an index. if it does not exists it
    will return
14 * -1 as an sensitive value.
15
  *****
  *****/
16
17 #include "MyHeader.h"
18
19 int ArrayBinarySearch(int numAr[], const int AR_SIZE, int searchNum)
20 {
21     int index;          //Calc & Output - index to go through the
    loop
22     int low;            //Calc - to store the smaller number
23     int high;           //Calc - to store the bigger number
24     int mid;            //Calc - middle of the array address
25     bool searchStat;    //Calc - bool to check if find the value
    or no
26
27     //INITIALIZATION
28
29     low = 0;
30     high = AR_SIZE - 1;
31     searchStat = false;
32
```

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```
33  //BINARY SEARCH
34
35  while(!searchStat && low <= high)
36  {
37      mid = (low + high) / 2;
38
39      if(numAr[mid] == searchNum)
40      {
41          searchStat = true;
42          index = mid;
43      }
44
45      else if(numAr[mid] < searchNum)
46      {
47          low = mid + 1;
48      }
49
50      else
51      {
52          high = mid - 1;
53      }
54  } //END - WHILE
55
56  //IF NOT FOUND IN ARRAY
57
58  if(!searchStat)
59  {
60      index = -1;
61  }
62
63  return index;
64 }
65
```