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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » Problem Solving Through Programming In C (course)

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Course outline

- How does an NPTEL online course work? ()
- Week 0 : ()
- Week 1 ()
- Week 2 ()
- Week 3 ()
- Week 4 ()
- Week 5 ()
- Week 6 ()
- Week 7 ()

Week 9 : Programming Assignment 3

Due on 2023-09-28, 23:59 IST

Write a C program to search a given number from a sorted 1D array and display the position at which it is found using binary search algorithm. The index location starts from 1.

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	6 1 2 3 4 5 6 2	2 found at location 2.	2 found at location 2.	Passed
Test Case 2	7 40 50 60 70 80 90 100 100	100 found at location 7.	100 found at location 7.	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Week 8 ()

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

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Problem Solving Session - July 2023 ()

Assignment submitted on 2023-09-28, 22:05 IST

Your last recorded submission was :

```c
#include <stdio.h>
int main()
{
 int c, n, search,
 array[100];
 scanf("%d",&n); //number of elements in the array

 for (c = 0; c < n; c++)
 scanf("%d",&array[c]);

 scanf("%d", &search); //The element to search is read from test case.

/* Use the printf statements as below:
 printf("%d found at location %d.", search, variable_name);
 printf("Not found! %d isn't present in the list.", search);
*/
int flag=0;
for(c=0;c<n;c++)
{
  if(array[c]==search)
  {
      flag=1;
      printf("%d found at location %d.",search,c+1);
      break;
  }
}
if(flag==0)
{
  printf("Not found! %d isn't present in the list.",search);
}
    return 0;
         }

```

Sample solutions (Provided by instructor)

```c
#include <stdio.h>
int main()
{
 int c, n, search,
 array[100];
 scanf("%d",&n); //number of elements in the array

 for (c = 0; c < n; c++)
 scanf("%d",&array[c]);

 scanf("%d", &search); //The element to search is read from test case.

/* Use the printf statements as below:
 printf("%d found at location %d.", search, variable_name);
 printf("Not found! %d isn't present in the list.", search);
*/
int first, last, middle;
   first = 0;
   last = n - 1;
   middle = (first+last)/2;

   while (first <= last) {
      if (array[middle] < search)
         first = middle + 1;
      else if (array[middle] == search) {
         printf("%d found at location %d.", search, middle+1);
         break;
      }
      else
         last = middle - 1;

      middle = (first + last)/2;
      }
   if (first > last)
      printf("Not found! %d isn't present in the list.", search);

     return 0;
```

```
38          }
```