

```
1  #include <bits/stdc++.h>
2  using namespace std;
3
4
5  int binarySearch(int arr[], int l, int r, int x)
6  {
7      while (l <= r) {
8          int m = l + (r - l) / 2;
9
10         if (arr[m] == x)
11             return m;
12
13         if (arr[m] < x)
14             l = m + 1;
15
16         else
17             r = m - 1;
18     }
19
20
21     return -1;
22 }
23
24 int main(void)
25 {
26     int arr[] = { 2, 3, 4, 10, 40 };
27     int x = 4;
28     int n = sizeof(arr) / sizeof(arr[0]);
29     int result = binarySearch(arr, 0, n - 1, x);
30     (result == -1)
31         ? cout << "Element is not present in array"
32         : cout << "Element is present at index " << result;
33     return 0;
34 }
```

if-else.cpp if-else if-else.cpp comparing_floats.cpp conditions.cpp practice.cpp dsaassign1linearssearch.cpp dsaassign1b

dsaassign1binarysearch.cpp > binarySearch(int [], int, int, int)

```
11         return m;  
12  
13         if (arr[m] < x)  
14             l = m + 1;  
15  
16  
17         else  
18             r = m - 1;  
19     }  
20  
21  
22     return -1;  
23 }  
24 int main(void)  
25 {  
26     int arr[] = { 2, 3, 4, 10, 40 };  
27     int x = 4;  
28     int n = sizeof(arr) / sizeof(arr[0]);  
29     int result = binarySearch(arr, 0, n - 1, x);  
30     (result == -1)  
31         ? cout << "Element is not present in array"  
32         : cout << "Element is present at index " << result;  
33     return 0;  
34 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
S C:\Users\sanya\OneDrive\Desktop\CPP> & 'c:\Users\sanya\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bin\WindowsDebugLa  
stdin=Microsoft-MIEngine-In-z45k5ka3.qka' '--stdout=Microsoft-MIEngine-Out-wqzwyecz.lwy' '--stderr=Microsoft-MIEngine-Error-sw0nolz0.zh2' '--pid=  
ine-Pid-p30t10zg.w5t' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'  
Element is present at index 3  
S C:\Users\sanya\OneDrive\Desktop\CPP> & 'c:\Users\sanya\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bin\WindowsDebugLa  
stdin=Microsoft-MIEngine-In-r4z02ouy.gtw' '--stdout=Microsoft-MIEngine-Out-fubu2my1.eek' '--stderr=Microsoft-MIEngine-Error-f3gxnuib.jj0' '--pid=  
ine-Pid-zjzo0yb5.cpx' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'  
Element is present at index 2  
S C:\Users\sanya\OneDrive\Desktop\CPP> & 'c:\Users\sanya\.vscode\extensions\ms-vscode.cpptools-1.17.5-win32-x64\debugAdapters\bin\WindowsDebugLa  
stdin=Microsoft-MIEngine-In-ja2grn3k.nvh' '--stdout=Microsoft-MIEngine-Out-w2wwh5zw.yvd' '--stderr=Microsoft-MIEngine-Error-5efuagkw.zck' '--pid=  
ine-Pid-2vypqehp.ruf' '--dbgExe=C:\msys64\mingw64\bin\gdb.exe' '--interpreter=mi'  
Element is present at index 2  
S C:\Users\sanya\OneDrive\Desktop\CPP>
```