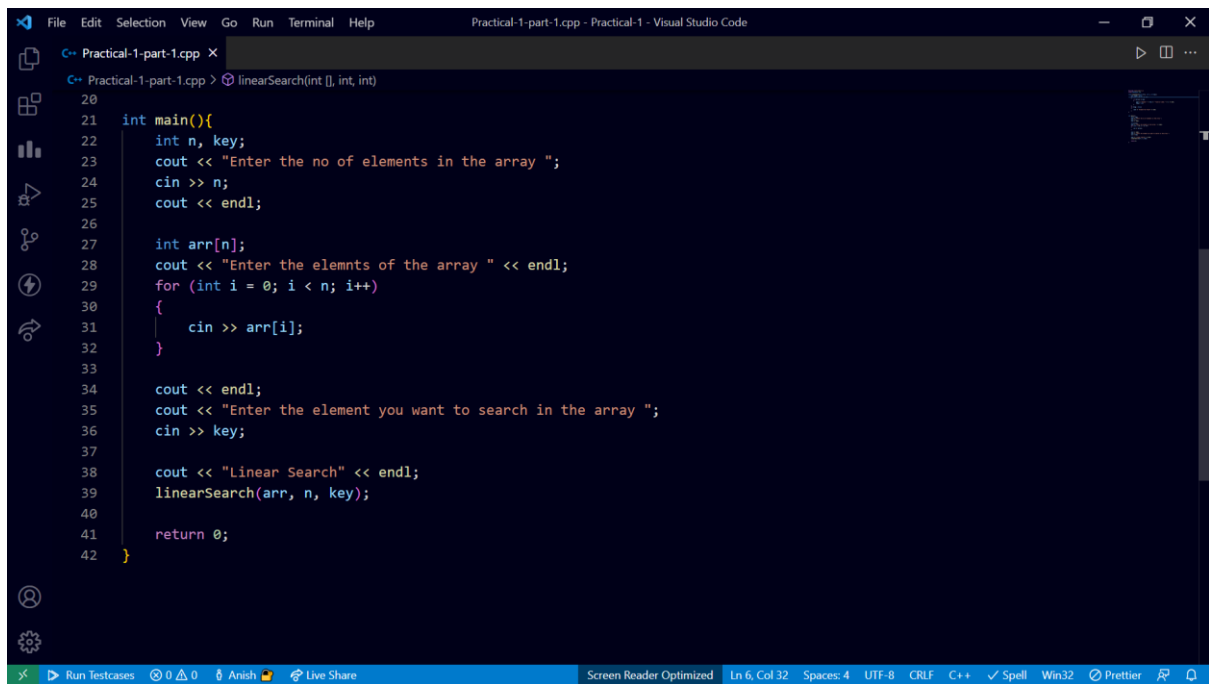


This screenshot shows the Visual Studio Code editor with a C++ file named 'Practical-1-part-1.cpp'. The code defines a 'linearSearch' function that takes an array 'arr', its size 'n', and a 'key' to search for. It uses a 'for' loop to iterate through the array, and if the key is found, it prints the index and sets a 'flag' to true. If the loop completes without finding the key, it prints 'Element Not Found'. The 'main' function starts by declaring 'n' and 'key', prompting the user to enter the number of elements, and then declaring the array 'arr'.

```
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 void linearSearch(int arr[], int n, int key){
5     bool flag = false;
6     for (int i = 0; i < n; i++)
7     {
8         if (arr[i] == key)
9         {
10             cout << "Element " << key << " found at index " << i << endl;
11             flag = true;
12         }
13     }
14     if (flag == false)
15     {
16         cout << "Element Not Found" << endl;
17     }
18 }
19
20
21 int main(){
22     int n, key;
23     cout << "Enter the no of elements in the array ";
24     cin >> n;
25     cout << endl;
26
27     int arr[n];
28     cout << "Enter the elemnts of the array " << endl;
```



This screenshot shows the continuation of the 'main' function in the same C++ file. It completes the array declaration by looping through 'n' elements and reading values from 'cin'. It then prompts the user for the 'key' to search for, calls the 'linearSearch' function, and finally returns 0.

```
29     for (int i = 0; i < n; i++)
30     {
31         cin >> arr[i];
32     }
33
34     cout << endl;
35     cout << "Enter the element you want to search in the array ";
36     cin >> key;
37
38     cout << "Linear Search" << endl;
39     linearSearch(arr, n, key);
40
41     return 0;
42 }
```

```
Element 2 found at index 1
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-1> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-1\" ; if ($?) { g++ Pract
ical-1-part-1.cpp -o Practical-1-part-1 } ; if ($?) { .\Practical-1-part-1 }
Enter the no of elements in the array 5

Enter the elemnts of the array
4 7 1 9 2

Enter the element you want to search in the array 9
Linear Search
Element 9 found at index 3
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-1> |
```

```
File Edit Selection View Go Run Terminal Help binary-search-recursive-way.cpp - Practical-1 - Visual Studio Code
binary-search-recursive-way.cpp x
C++ binary-search-recursive-way.cpp > main()
1 #include <bits/stdc++.h>
2 using namespace std;
3
4 int binarySearch(int arr[], int start, int end, int key){
5     if (start <= end) {
6         int mid = (start + end)/2;
7         if (arr[mid] == key){
8             return mid;
9         }
10        if (arr[mid] > key){
11            return binarySearch(arr, start, mid-1, key);
12        }
13        if (arr[mid] < key){
14            return binarySearch(arr, mid+1, end, key);
15        }
16    }
17    return -1;
18 }
19
20 int main(){
21     int n, key;
22     cout << "Enter the no of elements in the array ";
23     cin >> n;
24     cout << endl;
25
26     int arr[n];
27     cout << "Enter the elemnts of the array " << endl;
28     for (int i = 0; i < n; i++)
```

```
File Edit Selection View Go Run Terminal Help binary-search-recursive-way.cpp - Practical-1 - Visual Studio Code
binary-search-recursive-way.cpp x
C++ binary-search-recursive-way.cpp > main()
25     cout << endl;
26
27     int arr[n];
28     cout << "Enter the elemnts of the array " << endl;
29     for (int i = 0; i < n; i++)
30     {
31         cin >> arr[i];
32     }
33
34     cout << endl;
35     cout << "Enter the element you want to search in the array ";
36     cin >> key;
37
38     cout << "Binary Search" << endl;
39     int index = binarySearch (arr, 0, n-1, key);
40     if (index != -1)
41     {
42         cout << "Element " << key << " found at index " << index << endl;
43     }
44     else
45     {
46         cout << "Entered number not found in the array" << endl;
47     }
48     return 0;
}
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL

```
PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-1> cd "e:\College-Work\Sixth-Semester\DAA-practical\Practical-1\" ; if ($?) { g++ binary-search-recursive-way.cpp -o binary-search-recursive-way } ; if ($?) { .\binary-search-recursive-way }
```

Enter the no of elements in the array 4

Enter the elemnts of the array

1 2 3 4

Enter the element you want to search in the array 2

Binary Search

Element 2 found at index 1

PS E:\College-Work\Sixth-Semester\DAA-practical\Practical-1> |

