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Frequência F10

Busca Sequencial

```
#include <iostream>
using namespace std;

int main()
{
    int arr[5], n, i, pos;
    i=0;
    while(i<=4)
    {
        cout<<" enter value in element "<<i<<" :";
        cin>>arr[i];
        i++;
    }
    pos = 0;
    cout<<" enter any value :";
    cin>>n;
    i=0;
    while(i<=5)
    {

        if(n==arr[i])
        {

            pos=i+1;
            break;

        }
        i++;
    }
    if(pos==0)
        cout<<" value not found"<<endl;
    else
        cout<<" Value found at position = "<<pos<<endl;
}
```

Busca Binária

```
#include <iostream>
using namespace std;

int main()
{
    int abc[10]={1,3,9,15,78,87,95,103,124,352};
    int loc, num, i, m, s=0,e=9;
    loc=0;
    cout<<" Enter any value: ";
    cin>>num;
    while(s<e)
    {
        m=(s+e)/2;
        if(num==abc[m])
        {
            loc= m+1;
            break;

        }
        else if(num<abc[m])
            e=m-1;
        else
            s=m+1;
    }
    if(loc==0)
        cout<<" Value not found"<<endl;
        cout<<" Value found at position = "<<loc<<endl;
}
```

Prints da execução

Busca sequencial:

```
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     int arr[5], n, i, pos;
7     i = 0;
8     while(i <= 4)
9     {
10         cout << " enter value in element "<< i << " : ";
11         cin >> arr[i];
12         i++;
13     }
14     pos = 0;
15     cout << " enter any value : ";
16     cin >> n;
17     i = 0;
18     while(i <= 5)
19     {
20         if(n == arr[i])
21         {
22             pos = i + 1;
23             break;
24         }
25         i++;
26     }
27     if(pos == 0)
28         cout << " value not found" << endl;
29     else
30         cout << " Value found at position = " << pos << endl;
31 }
```

Compilation results...

- Errors: 0
- Warnings: 0
- Output Filename: C:\Users\Administrator\Desktop\work\AED1\F10\Project1.exe
- Output Size: 1.83260917663574 MiB
- Compilation Time: 1.41s

enter value in element 0 : 15
enter value in element 1 : 78
enter value in element 2 : 62
enter value in element 3 : 46
enter value in element 4 : 35
enter any value : 42
Value found at position = 3

Process exited after 10.43 seconds with return value 0
Press any key to continue . . .

Busca binária:

The image shows a C++ IDE with a project named 'Project1'. The main.cpp file contains a binary search algorithm. The code is as follows:

```
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     int abc[10]={1,3,9,15,78,87,95,103,124,352};
7     int loc, num, i, m, s=0, e=9;
8     loc=0;
9     cout<<" Enter any value: ";
10    cin>>num;
11    while(s<e)
12    {
13        m=(s+e)/2;
14        if(num==abc[m])
15        {
16            loc= m+1;
17            break;
18        }
19        else if (num<abc[m])
20            e=m-1;
21        else
22            s=m+1;
23    }
24    if(loc==0)
25        cout<<" Value not found"<<endl;
26    else
27        cout<<" Value found at position = "<<loc<<endl;
28 }
29
30
```

The IDE shows the compilation results in the bottom panel:

```
Compilation results...
-----
Errors: 0
Warnings: 0
Output Filename: C:\Users\Administrator\Desktop\work\AED1\F10\Project1.exe
Output Size: 1.83309745788574 MiB
Compilation Times: 0.79s
```

The execution window shows the following output:

```
C:\Users\Administrator\Desktop\work\AED1\F10\Project1.exe
Enter any value: 87
Value found at position = 6
.....
Process exited after 7.356 seconds with return value 0
Press any key to continue . . .
```