

Arrays

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Array is collection of data of similar type.

Code:

```
#include<iostream>
using namespace std;
int main() {
    int number[5] = {1,2,3,4,4};
    char character[5] = {'A','B','C','D','E'};
    float f[2] = {1.0, 2.0};
    return 0;
}
```

For Each loop on Arrays :

```
#include<iostream>
using namespace std;
int main() {
    int arr[5] = {1,2,3,4,5};
    for (int i : arr)
        cout<<i<<endl;

    return 0;
}
```

Linear Search on Arrays

```
#include<iostream>
using namespace std;
int main() {
    int arr[20] = {35, 98, 98, 100, 117, 202, 215, 278, 281, 415, 420,
532, 685, 707, 868, 896, 905, 926, 936, 947};
    int target;
    cout<<"Enter the number : ";
    cin>>target;
    for (int x : arr){
        if (x == target){
            cout<<"Found"<<endl;
            return 0;
        }
    }
    cout<<"not Found"<<endl;
    return 1;
}
```

Binary Search on Arrays

```
#include<iostream>
using namespace std;
int main() {
    int arr[100] = {1, 35, 53, 54, 60, 63, 82, 83, 101, 107, 114, 115,
121, 124, 133, 137, 139, 154, 169, 172, 177, 192, 202, 228, 232, 232,
258, 258, 260, 261, 266, 267, 267, 274, 292, 353, 364, 389, 395, 419,
435, 436, 475, 479, 497, 500, 503, 504, 517, 518, 537, 558, 561, 566,
572, 578, 580, 581, 602, 603, 604, 616, 639, 643, 650, 652, 656, 669,
```

```

673, 686, 698, 702, 703, 748, 749, 777, 784, 801, 814, 817, 820, 838,
861, 867, 871, 872, 892, 904, 913, 915, 919, 920, 925, 932, 947, 955,
957, 959, 990, 991};
int start = 0, end = 99;
int target;
cout<<"Enter the number : ";
cin>>target;
while (start <= end){
    int mid = (start + end) / 2;
    if (arr[mid] == target){
        cout<<"Found at "<<mid<<endl;
        return 0;
    } else if (arr[mid] > target){
        end = mid - 1;
    } else {
        start = mid + 1;
    }
}
cout<<"not found"<<endl;
return 1;
}

```