

# Arrays

```
#include <bits/stdc++.h>
using namespace std;
int main() {
    int a[10];
    a[1] = 10;
    cout << a[1];
}
```

```
int main() {
    int n;
    cin >> n;
    int a[n];
    for (int i = 0; i < n; ++i) {
        cin >> a[i];
    }

    int sum = 0;
    for (int i = 0; i < n; ++i) {
        (sum = sum + a[i]);
    }

    sum = 2;

    cout << sum << endl;

    2-d-array; n-dimensional
    int a[4][3]
```

0,0	0,1	0,2
1,0	1,1	1,2
2,0	2,1	2,2
3,0	3,1	3,2

```
int main() {
    int n, m;
    cin >> n >> m;
    int a[n][m];
    for (int i = 0; i < n; ++i) {
        for (int j = 0; j < m; ++j) {
            cin >> a[i][j];
        }
    }

    cout << a[i][j] << endl;
}
```

Input:

3	4		
1	2	3	4
6	6	7	8
9	10	11	12

```

int main() {
    int n = 10;
    int a[n];
    a[n-1] = 7;
    cout << a[n-1];
}

```

segmentation fault

```

#include <bits/stdc++.h>
using namespace std;

const int n = 10;
int a[n];

int main() {
    a[n-1] = 7;
    cout << a[n-1];
}

```

1) max till i :

Given an array  $a[]$  of size  $n$ .  
 For every  $i$  from  $0$  to  $n-1$   
 output  $\max(a[0], a[1], \dots, a[i])$

$mx = 0$   
 $max\ till\ i = 1$

1	0	5	4	6	8
0	1	2	3	4	5

$mx = 1$   
 $mx = 5$

$(5, 4)$   
 $mx = a[i]$   
 $mx = 1$   
 $mx = 5$   
 $mx = 6$   
 $mx = 8$

```

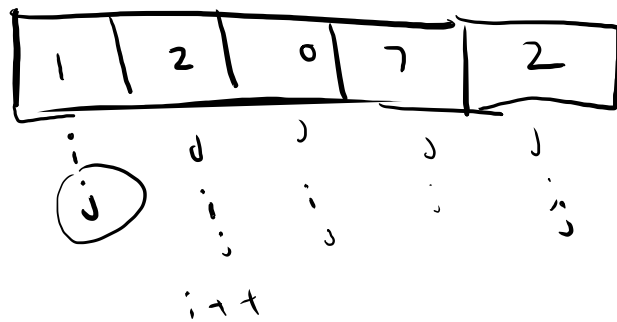
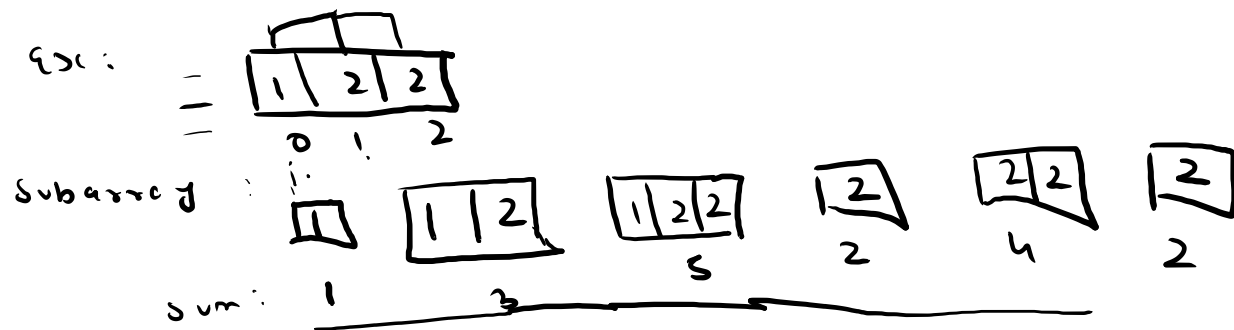
int main() {
    int n;
    cin >> n;
    int a[n];
    for (int i = 0; i < n; i++) {
        cin >> a[i];
    }
    int mx = -1;
    for (int i = 0; i < n; i++) {
        mx = max(mx, a[i]);
    }
    cout << mx << endl;
    return 0;
}

```

2) sum of all sub arrays :

Given an array  $a[]$  of size  $n$ .

Output sum of each subarray  
of the given array



```
void sumOfAllSubarrays() {
    int n;
    cin >> n;
    int a[n];
    for (int i=0; i<n; i++) {
        cin >> a[i];
    }

    int curr=0;
    for (int i=0; i<n; i++) {
        curr=0;
        for (int j=i; j<n; j++) {
            curr = curr + a[j];
            cout << curr << endl;
        }
    }
}
```

5) Smallest Positive missing number;  
(Amazon, Samsung, Snapdeal, Acolite)

Problem:

Find the Smallest Positive missing number in the given array

Example:  $\{0, -10, 1, 3, -20\}$



```
int main() {
    int n;
    cin >> n;
    int a[n];
    for(int i=0; i<n; i++) {
        cin >> a[i];
    }
    const int N = 1e6 + 2;
    bool check[N];
    for(int i=0; i<n; i++) {
        check[a[i]] = 1;
    }
    for(int i=1; i<N; i++) {
        if (check[i] == 0) {
            ans = i;
            break;
        }
    }
    cout << ans << endl;
}
```

1) Sort (a, a+n) ;

2)

```
if (a[i]
    a[i+1]
    a[i] + 1
    return a[i] + 1;
return a[i] + 1;
ans = 2
```