

for(i = 1; i ≤ n; i++)

Initiation → 1
 Condition check → N+1
 Update → N times

→ N+1

N=4

i	N	i ≤ N
1	4	1 ≤ 4 ✓
2	4	2 ≤ 4 ✓
3	4	3 ≤ 4 ✓
4	4	4 ≤ 4 ✓
5	4	5 ≤ 4 (X)

Initiation → 1
 Condition check → 2
 Update → 3
 Condition check → 4
 Update → 5

Sum(arr, n)

```

{
    int ans = 0;
    for(int i = 0; i < n; i++) {
        ans += arr[i];
    }
    return ans;
}
    
```

1 time
 1 → N+1
 n
 n
 1

$$Add = 1 + (n+1) + n + 1 = 2n + 3$$

Condition check = n+1

$$Total = n$$

$$Time = 1$$

N=4

i	N	i < N
0	4	0 < 4 ✓
1	4	1 < 4 ✓
2	4	2 < 4 ✓
3	4	3 < 4 ✓
4	4	4 < 4 X

Initiation → 0
 Condition check → 1
 Update → 2
 Condition check → 3
 Update → 4
 Condition check → 5

int n=4;

for(int i=1; i ≤ n; i++) {

for(int j=1; j ≤ n; j++) {

System.out.println(i + " " + j);

}

}

1
 1
 n+1
 n
 (n+1)
 n
 n*(n+1)
 n*n

i	N	i ≤ N
1	4	1 ≤ 4 ✓
2	4	2 ≤ 4 ✓
3	4	3 ≤ 4 ✓
4	4	4 ≤ 4 ✓
5	4	5 ≤ 4 X

$$Add = 1 + (n+1) + n^2 + n + n^2 = 2n^2 + 2n + 2 \approx n^2$$

$$TC = F(n) = 2n^2 + 2$$

