1. Online Round
   → DSA
     → Aptitude

2. DSA interview → Binary Search

3. Tech → Project

4. HR

Linear Search

[23, 46, 55, 92, 108, 123]

"sorted"

target = 92

```
for(i=0; i<n; i++){
    if(arr[i]==target){
        return true;
    }
}
return false;
```

1000

Binary Search

[2, 8, 11, 15, 22, 32, 47, 49, 51, 66, 72]
  0 1   2   3   4   5   6   7   8   9 10

target = 48

```
while( l <= r ){
  ① mid = (l+r)/2
  ② if( arr(mid) == target ) return true
     else if( arr(mid) < target ) l = mid+1
     else if( arr(mid) > target ) r = mid-1
}
```

return false

1024 → 10
512
256
128
64
32
16
8
4
2
1

32
16
8   5
4
2
1

[1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 3, 4, 4, 5, 6, 6, 6, 6, 6, 6, 6, 7, 7, 7, 8, 8]
 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

target = 6

ans = 15

arr[mid] == target
    ans = mid
    r = mid-1

arr[mid] < target
    l = mid+1

arr[mid] > target
    r = mid-1

1
26
40

40/2 = 70

```
function getCeil(arr, target): number {
    let l = 0;
    let r = arr.length-1;
    let ceil = -1;

    while(l<=r){
        let mid = Math.floor((l+r)/2);
        if(arr[mid] == target){
            return arr[mid];
        }else if(arr[mid] < target){
            l = mid+1;
        }else if(arr[mid] > target){
            ceil = arr[mid];
            r = mid-1;
        }
    }
    return ceil;
}
```

l = 6
r = 5

target = 33

[2, 8, 11, 15, 22, 32, 47, 49, 51, 66, 72]
  0 1   2   3   4   5   6   7   8   9 10

ceil = 47
mid = 6

6+7 / 2 = 13/2 = 12.5 = 12/2 = 6