PW SKILLS

	0	1	2	3	4	5
arr →	2	7	7	8	8	10

target = 7

Output = 1

Lower Bound / first Occurrence of a target element

Binary search

low = 0
high = 1

```
while(low <= high){
    mid = (0+5)/2 = 2
```

7 7

```
if (arr(mid) == target)
```

low = 0
high = 0

Important logic

```
{ result = mid ;   ← 1
  high = mid - 1 ; ← 0
```

```
else if (arr(mid) > target)
    high = mid - 1;

else
    low = mid + 1;

}
```

Binary Search

Time complexity - O(log n)

Space complexity - O(1)