

Two pointers

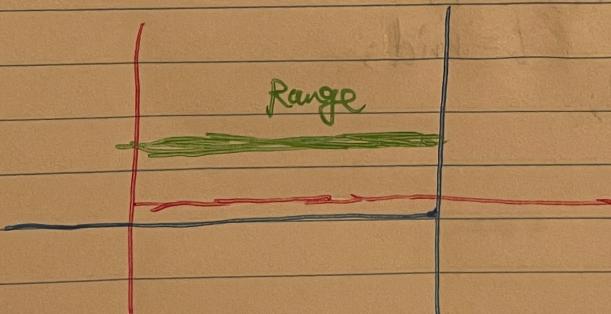
AcWing 789 range of the numbers

Template 1  $[l, \text{mid}]$   $[\text{mid}+1, r]$

```
int bsearch_1 (int l, int r)
{
    while (l < r)
    {
        int mid = l + r >> 1;
        if (check(mid)) r = mid  $\Rightarrow f[\text{mid}] \geq x$ 
        else l = mid + 1;
    }
    return l;
}
```

Template 2  $[l, \text{mid}-1]$   $[\text{mid}, r]$

```
{ while (l < r)
    {
        int mid = l + r + 1 >> 1;
        if (check(mid)) l = mid;
        else r = mid - 1;
    }
    return l;
}
```



find left point

Template 1

find right point

Template 2