Search Insert Position

```
class Solution:
    def searchInsert(self, nums: List[int], target: int) -> int

        start_p = 0
        end_p = len(nums) - 1


        while start_p <= end_p:
            mid_p = start_p + end_p // 2
            if nums[mid_p] == target:
                return mid_p

            elif nums[mid_p] < target:
                start_p = mid_p + 1

            else:
                end_p = mid_p - 1
        return start_p
```

very basic code, has 3 pointers, start end and middle

mid_p is used to search for the targer

the loop invariant is if start_p ≤ end_p in which it will just return start_p as the number doesnt exist or mid_p finds the target

The middle pointer adjusts if it doesnt find the target, it does this by moving the other points and simply just goes between them every time