Set 1

Q.1) Segregate positive and negative integers in linear time

Given an array of positive and negative integers,

. The output should print all negative numbers, followed

by all positive numbers.

For example,

Input: [19, -13, 15, -12, -18, -16, 1, 3]

Output: [-13, -12, -18, -16, 15, 19, 1, 3

After showing above output copy this data into another array and sort it.

```
l1 = [19, -13, 15, -12, -18, -16, 1, 3]
l2 = []
for i in range(len(l1)):
    j=0
    if l1[i]<0:
        l2.insert(j, l1[i])
        j+=1
    else:
        l2.insert(len(l1)-j, l1[i])
print("processed: ",l2)
print("sorted: ",sorted(l2))
```

```
"D:\cdac\4 Python\Practice\venv\Scripts\python.exe" "D:\cdac\4 Python\Practice\.ipynb_checkpoints\Demo.py"
processed:  [-16, -18, -12, -13, 19, 15, 1, 3]
sorted:  [-18, -16, -13, -12, 1, 3, 15, 19]
```

Q.2) Accept 5 number in an array, accept a number from user and check if given number is there in an array or not

```
l1 = [int(i) for i in input("Enter numbers: ").split(" ")]
print("present" if int(input("Enter number to search: ")) in l1 else "absent")
```

```
"D:\cdac\4 Python\Practice\venv\Scripts\python.exe" "D:\cdac\4 Python\Practice\.ipynb_checkpoints\Demo.py"
Enter numbers: 1 2 3 4 5
Enter number to search: 3
present
```

Set 2

Q.1) Accept 10 number in an array. Display all even number at the beginning and all Odd at the end. Use only one loop

```
l1 = [int(i) for i in input("Enter numbers: ").split(" ")]
l2 = []
for i in range(len(l1)):
    j = 0
    if l1[i] % 2 == 0:
        l2.insert(j, l1[i])
        j +=1
    else:
        l2.insert(len(l1) - j, l1[i])

print(l2)
```

```
"D:\cdac\4 Python\Practice\venv\Scripts\python.exe" "D:\cdac\4 Python\Practice\.ipynb_checkpoints\Demo.py"
Enter numbers: 1 3 5 7 9 2 4 6 8
[8, 6, 4, 2, 1, 3, 5, 7, 9]
```

Q.2) Accept 5 number in an array and sort it. Accept a number from user and check if it is there in an array or not use binary search.

```
l1 = [int(i) for i in input("Enter 5 numbers: ").split(" ")]
target = int(input("Enter target: "))
l1.sort()

print("sorted: ", l1)

n = len(l1)
start = 0
mid = n // 2
end = n - 1

if target == l1[mid] : print(f"Found at position {mid+1}")

while(l1[mid] != target):
    if l1[mid] > target:
        mid = start + (end-start) // 2
        end = mid

    if l1[mid] < target:
        start = mid + 1
        mid = start + (end-start) // 2

    if l1[mid] == target: print(f"Found at position {mid+1}")
```

```
"D:\cdac\4 Python\Practice\venv\Scripts\python.exe" "D:\cdac\4 Python\Practice\.ipynb_checkpoints\Demo.py"
Enter 5 numbers: 10 20 30 40 50
Enter target: 40
sorted:  [10, 20, 30, 40, 50]
Found at position 4
```