**DAY-03**

**Q18.**

lst1 = []

lst2 = [1]

lst3 = [7, 7, 7, 7]

lst4 = [-5, -1, -3, -2, -4]

print(lst1)

print(lst2)

print(lst3)

print(sorted(lst4)) # Sorting the list with negative numbers

**output:**

[]

[1]

[7, 7, 7, 7]

[-5, -4, -3, -2, -1]

**Q19.**

arr = [5, 2, 9, 1, 5, 6]

for i in range(len(arr)):

min\_idx = i

for j in range(i+1, len(arr)):

if arr[j] < arr[min\_idx]:

min\_idx = j

arr[i], arr[min\_idx] = arr[min\_idx], arr[i]

print(arr)

**ouput:**

[1, 2, 5, 5, 6, 9]

**Q20.**

arr = [5, 2, 9, 1, 5, 6]

n = len(arr)

for i in range(n):

swapped = False

for j in range(0, n-i-1):

if arr[j] > arr[j+1]:

arr[j], arr[j+1] = arr[j+1], arr[j]

swapped = True

if not swapped:

break

print(arr)

**output:**

[1, 2, 5, 5, 6, 9]

**Q21.**

arr = [3, 1, 4, 1, 5, 9, 2, 6, 5, 3]

for i in range(1, len(arr)):

key = arr[i]

j = i - 1

while j >= 0 and arr[j] > key:

arr[j + 1] = arr[j]

j -= 1

arr[j + 1] = key

print(arr)

**output:**

[1, 1, 2, 3, 3, 4, 5, 5, 6, 9]

**Q22.**

arr = [2, 3, 4, 7, 11]

k = 5

missing\_count = 0

current = 1

for num in arr:

while current < num:

missing\_count += 1

if missing\_count == k:

print(current)

break

current += 1

current += 1

**output:**

9

**Q23.**

nums = [1, 2, 3, 1]

left, right = 0, len(nums) - 1

while left <= right:

mid = (left + right) // 2

if (mid == 0 or nums[mid] > nums[mid - 1]) and (mid == len(nums) - 1 or nums[mid] > nums[mid + 1]):

print(mid)

break

elif mid < len(nums) - 1 and nums[mid] < nums[mid + 1]:

left = mid + 1

else:

right = mid – 1

**output:**

2

**Q24.**

haystack = "sadbutsad"

needle = "sad"

for i in range(len(haystack) - len(needle) + 1):

if haystack[i:i + len(needle)] == needle:

print(i)

break

else:

print(-1)

**output:**

0

**Q25.**

words = ["mass", "as", "hero", "superhero"]

result = set()

for i in range(len(words)):

for j in range(len(words)):

if i != j and words[i] in words[j]:

result.add(words[i])

print(list(result))

**output:**

['as', 'hero']