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SECTION: ECE – A1

LAB EXAM- 2

(10) Take in numbers as input until “stop” is entered. As you take in each number, insert it into a list so that the list is sorted in ascending order. That is, look through the list until you find the place where the new element belongs, then use `insert()` to place it there. If the number is already in the list, do not add it again. After “stop” is entered, print out the list.

Do not use any of Python’s built-in sorting functions. You cannot use `sort()` for this exercise.

ALGORITHM:

1. First take an empty list assign it to a variable named ‘arr’
2. Using iteration or for loop function we need to take inputs from the user.
3. According to the question if we the user enters ‘stop’ as an input the array should stop taking the inputs from the user for this we should be using conditional if statements like if a is stop break the loop, to break the loop we can use break function.
4. Now the elements in the arr we have are strings therefore, we need to change them to float so it even accept decimals and negative numbers. We can do this by using `float(i)`.
5. Assign the float elements to a variable ‘s’.
6. Take an empty list again assign it to a variable ‘new_list’
7. While s: let, `minimum = s[0]`
8. For x in s elements, we need to check each elements if it is greater than the other or not we can do this by selecting an

random element and comparing it with other elements by using iteration and conditional statements.

9. Then we will append all the values to new_list which is empty.

10. Now coming to deleting repeating numbers we can do it by using for loop and conditional if statements.

11. Create an empty list assign it to a variable named 'l1'.

12. For i in new_list we will check if i is there in l1, if it is there it will delete that number if not there it will that number.

PROGRAM:

```
###(10)
arr=[]
for i in range(0,100):
    a = input("enter number in an array: ")
    if a != 'stop':
        arr.append(a)
    else:
        break
print((arr))
s = [float(i) for i in arr]

new_list = []

while s:
    minimum = s[0] # arbitrary number in list
    for x in s:
        if x < minimum:
            minimum = x
    new_list.append(minimum)
    s.remove(minimum)

print("the list in sorted way is :",new_list)

l1=[]
for i in new_list:
    if i in l1:
        del i
    else:
        l1.append(i)
```

```
print(l1)
```

```
#####OR ANOTHER METHOD
```

```
NumList = []
```

```
Num = int(input("Please enter the Total Number of List Elements: "))
```

```
for i in range(1, Num + 1):
```

```
    value = int(input("Please enter the Value of %d Element : " %i))
```

```
    NumList.append(value)
```

```
for i in range (Num):
```

```
    for j in range(i + 1, Num):
```

```
        if(NumList[i] > NumList[j]):
```

```
            temp = NumList[i]
```

```
            NumList[i] = NumList[j]
```

```
            NumList[j] = temp
```

```
print("Element After Sorting List in Ascending Order is : ", NumList)
```

```
for i in range (Num):
```

```
    for j in range(i + 1, Num):
```

```
        if(NumList[i] < NumList[j]):
```

```
            temp = NumList[i]
```

```
            NumList[i] = NumList[j]
```

```
            NumList[j] = temp
```

```
print("Element After Sorting List in Descending Order is : ",  
NumList)
```