

Design & Analysis of Algorithms

(LAB-2)

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In-Lab:

Sort the given array of elements in order such as even indexed elements in ascending fashion and odd indexed elements in descending manner.

Input: 10 5 20 35 2 8

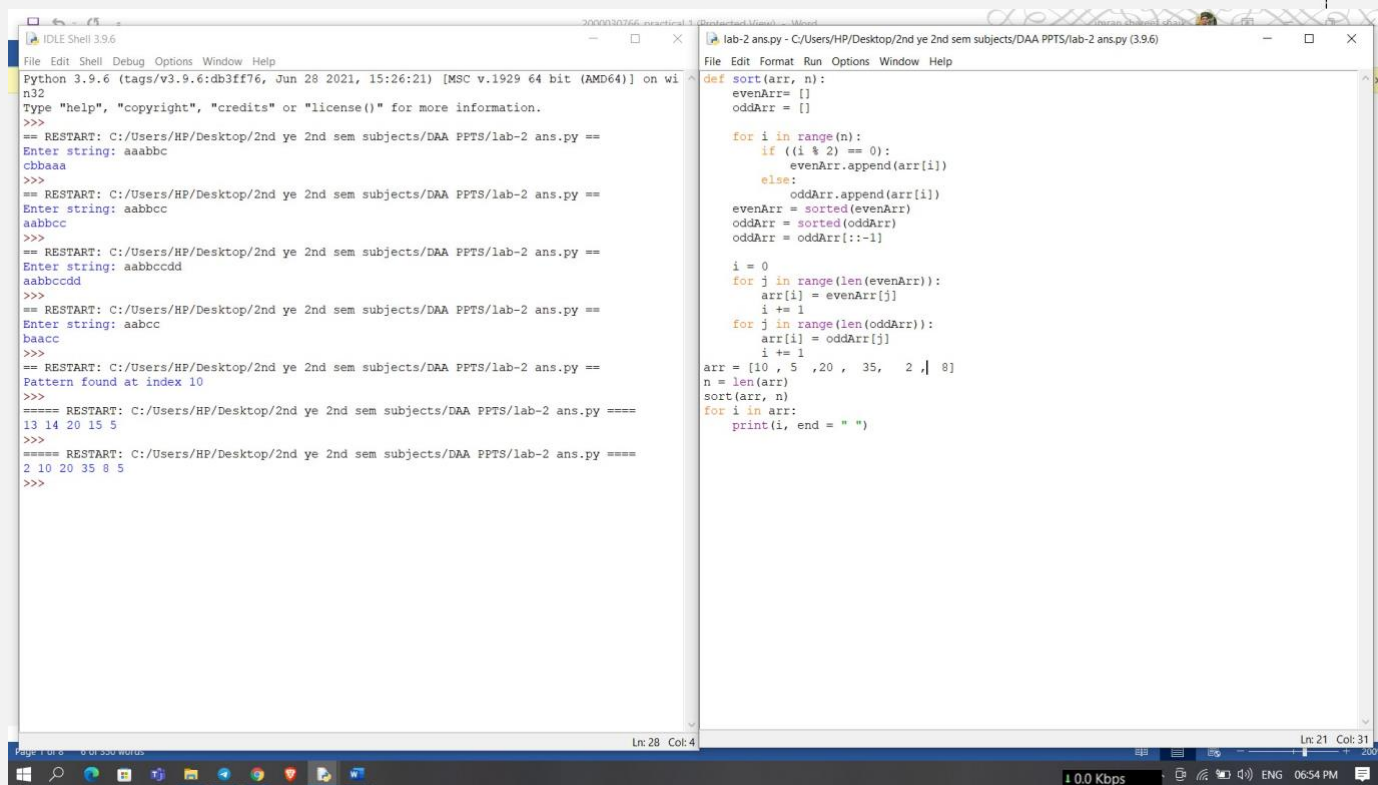
Output: 2 10 20 35 8 2

Code:-

```
def sort(arr, n):  
    evenArr= []  
    oddArr = []  
  
    for i in range(n):  
        if ((i % 2) == 0):
```

```
        evenArr.append(arr[i])
    else:
        oddArr.append(arr[i])
evenArr = sorted(evenArr)
oddArr = sorted(oddArr)
oddArr = oddArr[::-1]
    i =
0
    for j in range(len(evenArr)):
arr[i] = evenArr[j]    i += 1
    for j in range(len(oddArr)):
arr[i] = oddArr[j]    i += 1
arr = [1, 5, 8, 9, 6, 7, 3, 4, 2,
0] n = len(arr) sort(arr, n) for i
in arr:
    print(i, end = " ")
```

Output:-



The image shows two side-by-side windows from a Python IDE (IDLE 3.9.6). The left window displays the output of a Python script, and the right window displays the source code of the script.

Left Window (Output):

```
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aaabbc
cbbaaa
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabbbc
aabbbc
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabccdd
aabccdd
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabcc
baacc
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Pattern found at index 10
>>>
===== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py =====
13 14 20 15 5
>>>
===== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py =====
2 10 20 35 8 5
>>>
```

Right Window (Code):

```
def sort(arr, n):
    evenArr = []
    oddArr = []

    for i in range(n):
        if ((i % 2) == 0):
            evenArr.append(arr[i])
        else:
            oddArr.append(arr[i])
    evenArr = sorted(evenArr)
    oddArr = sorted(oddArr)
    oddArr = oddArr[::-1]

    i = 0
    for j in range(len(evenArr)):
        arr[i] = evenArr[j]
        i += 1
    for j in range(len(oddArr)):
        arr[i] = oddArr[j]
        i += 1

arr = [10, 5, 20, 35, 2, 8]
n = len(arr)
sort(arr, n)
for i in arr:
    print(i, end = " ")
```

2) Uday decided to send emails to his N friends he have some mails of his friends he should check whether mails of his friends are klu mails or

not and then after finding it arrange the names of his friends given with mail id's in alphabetical order help him by writing a program. Klu mail end with @kluniversity.in. First total number of friends N next N lines as name and mail id's. Constraints $2 \leq N \leq 30$ Each of the first names consists of lower case letters[a-z]only. Each of the email IDs consists of lower case letters[a-z],@ and . only. The length of the first name is no longer than 20. The length of the email ID is no longer than 50. Print an alphabetical order of Uday friends who have valid klu mails

Sample Input:

Uday Uday@kluniversity.in ram

ram@julia.me

harry harry@kluniversity.in

dhp dhp@kluniversity.in

karthik karthik@gmail.com hari

hari@kluniversity.in

Sample Output:

dhp

hari harry

Uday

Code:- str1="uday

uday@kluniversity.in" str2="ram

ram@julia.me" str3="harry

harry@kluniversity.in" str4="dhp

dhp@kluniversity.in"

str5="karthik karthik@gmail.com"

str6="hari hari@kluniversity.in"

list=[]

Elist=[]

if "@kluniversity.in" in str1:

list.append(str1) else:

Elist.append(str1)

```
if "@kluniversity.in" in str2:
```

```
list.append(str2) else:
```

```
    Elist.append(str2)
```

```
if "@kluniversity.in" in str3:
```

```
list.append(str3) else:
```

```
    Elist.append(str3)
```

```
if "@kluniversity.in" in str4:
```

```
list.append(str4) else:
```

```
    Elist.append(str4)
```

```
if "@kluniversity.in" in str5: list.append(str5) else:
```

```
    Elist.append(str5)
```

```
if "@kluniversity.in" in str6:
```

```
list.append(str6) else:
```

```
Elist.append(str6)
```

```
newlist={x.replace('@kluniversity.in','')for x in list} print(sorted(newlist))
```

Output:-

```
Python 3.9.6 (tags/v3.9.6:db3ff76, Jun 28 2021, 15:26:21) [MSC v.1929 64 bit (AMD64)] on w
in32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aaabbc
cbbaaa
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabbcc
aabbcc
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabbccdd
aabbccdd
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Enter string: aabcc
baabcc
>>>
== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py ==
Pattern found at index 10
>>>
===== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py =====
13 14 20 15 5
>>>
===== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py =====
2 10 29 35 8 5
>>>
===== RESTART: C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py =====
['dhp dhp', 'hari hari', 'harry harry', 'uday uday']
>>>

lab-2 ans.py - C:/Users/HP/Desktop/2nd ye 2nd sem subjects/DAA PPTS/lab-2 ans.py (3.9.6)
File Edit Format Run Options Window Help
str5="university.in"
str6="hari hari@university.in"
list=[]
Elist=[]
if "@university.in" in str1:
    list.append(str1)
else:
    Elist.append(str1)
if "@university.in" in str2:
    list.append(str2)
else:
    Elist.append(str2)
if "@university.in" in str3:
    list.append(str3)
else:
    Elist.append(str3)
if "@university.in" in str4:
    list.append(str4)
else:
    Elist.append(str4)
if "@university.in" in str5:
    list.append(str5)
else:
    Elist.append(str5)
if "@university.in" in str6:
    list.append(str6)
else:
    Elist.append(str6)
newlist=[x.replace('@university.in','') for x in list]
print(sorted(newlist))
```