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Laboratory 8

Title of the Laboratory Exercise: File handling

1. Introduction and Purpose of Experiment

   A text file is a sequence of characters stored on a permanent medium such as hard drive, flash memory, and CD-ROM. In Python, instead of printing results to screen using print, results can be written to a file. A file object is used to open a connection to a text file for input or output. By solving these problems, students will be able to perform file handling functions.

2. Aim and Objectives

   Aim

   - To develop programs using file handling functions

   Objectives

   At the end of this lab, the student will be able to

   - Apply file handling functions for solving problems

3. Experimental Procedure

   i. Analyse the problem statement
   ii. Design an algorithm for the given problem statement and develop a flowchart/pseudo-code
   iii. Implement the algorithm in Python language
   iv. Execute the Python program
   v. Test the implemented program
   vi. Document the Results
   vii. Analyse and discuss the outcomes of the experiment

4. Questions

   a. Write a python program to compute the number of characters, words and lines in a text file
   b. Write a program to print each line of a file in reverse order
   c. Write a program to enter a list of integers from the user and store it in a file. Sort the elements in the file and display on the screen

5. Calculations/Computations/Algorithms

Python program to compute the number of characters, words and lines in a text file

1. **START**
2. run a loop to read the contents of file- 'for i in f: ", the iteration of loop will give lines of paragraph or use split function to separate lines using ". ", as a separator.
3. To separate the words use " "- space in split function as a separator to find all the words in a paragraph.
4. Store all the words separated, in a list in form of nested list and print the letters of each word using 2 for loops.
5. Store the data extracted in a file and display it.
6. **STOP**

Python program to print each line of a file in reverse order

1.START

2.Open the file in read mode and using a for loop to read the contents stored in file.

3.Store the read contents in a string variable and reverse the string using slicing.

4.Print the reversed string.

5.STOP

Python program to enter a list of integers from the user and store it in a file. Sort the elements in the file and display on the screen-

1. START

2.Open a file "file.txt", a text file. Input a list of integers and write the list in file.

3.Open the file in read mode and sort the list stored in file, using any of the sorting technique, here we have used in-built sort.

4.Re-write the sorted list in the file and display the sorted list.

5.STOP

6. Presentation of Results

1. program to compute the number of characters, words and lines in a text file

8.py 81.py 82.py

```
1  lin=0
2  word=0
3  cha=0
4  with open('file.txt','r') as f:
5      print('contents in file:\n')
6      k=f.read()
7      print(k)
8  with open('file.txt','r') as f:
9      for line in f:
10         lin+=1
11         words=line.split()
12         for line in words:
13             word+=1
14             for char in line:
15                 cha+=1
16
17 print('\nline=',lin)
18 print('words=',word)
19 print('character=',cha)
```

Messages Python Shell Debug I/O

```
Debug I/O (stdin, stdout, stderr) appears below

contents in file:

this is first line
this is second line
this is third line

line= 3
words= 12
character= 46
```

Figure 1compute no of lines, words, and character in a text file

file.txt - Notepad

File Edit Format View Help

```
this is first line
this is second line
this is third line
```

Figure 2 screenshot of file contents

2. program to print each line of a file in reverse order

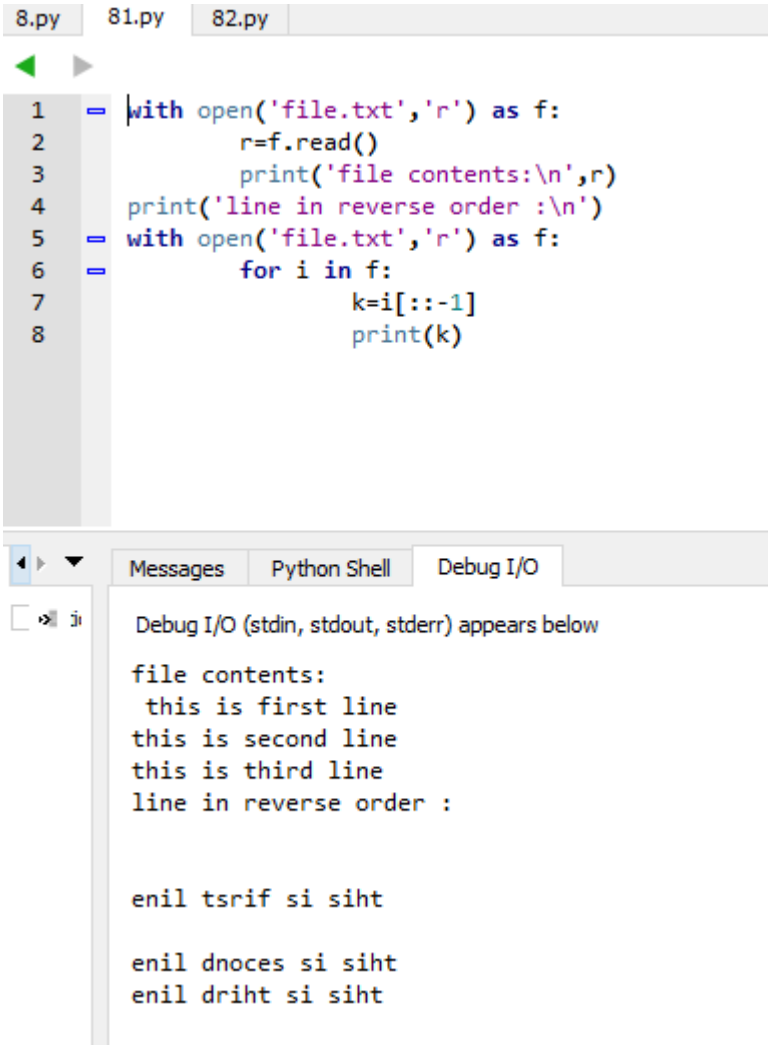

Figure 3 shows program to print each line of a file in reverse order

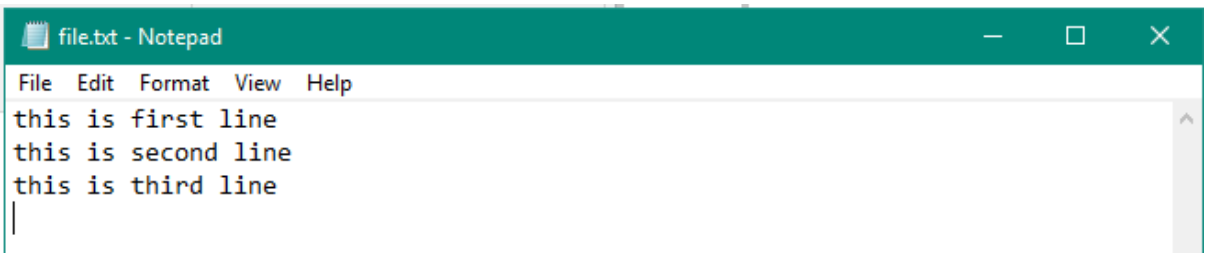

Figure 4 screenshot of the file contents

3. Program to enter a list of integers from the user and store it in a file. Sort the elements in the file and display on the screen

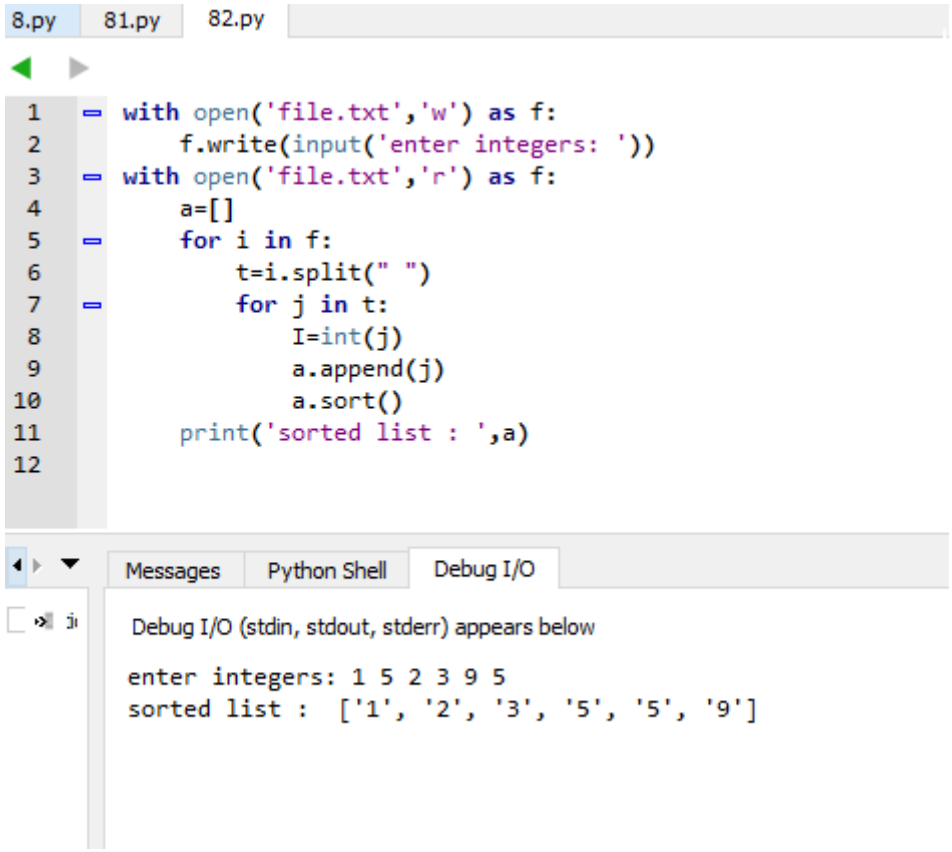

Figure 5 shows program to enter a list of integers from the user and store it in a file

7. Analysis and Discussions

In this we are going to develop programs using file handling functions.

8. Conclusions

I have analysed that reading the values for our programs from the user i.e. inputting the values is a better way of programming because it generalises our program which can return output for whatever value entered by the user rather than simply returning outputs for a fixed set of values.

9. Comments

I have learnt to execute python programs in script mode of WING IDE and got familiar with script mode and learnt to execute basic logical programs in python.

1. Limitations of Results

The messages in the ***print()*** statement are fixed and will be the same every time we execute the program. Therefore, the user will not get the desired message other than the messages we have typed in the print statements. The outputs are not stored in the file in all the questions.