

## Week 7 – Files and Lists

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1. Write code to read words from a file consisting of a word on each line and prints the number of words in that file.

Algorithm:

*Open connection to the file*  
*Read all the lines using readlines into a list*  
*Determine the length of the list*  
*Print the length of the list*

A sample file is

apple  
orange  
banana  
mango  
grape  
blueberry  
gooseberry  
fig  
melon  
grapefruit

2. Write a program that reads from a file which contains a word on each line. The application should sort the words in alphabetical order and write them to a file called sorted.txt.

Algorithm:

*Open connection to the file*  
*Read all the lines using readlines into a list*  
*Sort the list*  
*Open a writing connection to the file*  
*Write the list back to the file using writelines*

3. Add code to the application to sort the words, convert the words to uppercase and write them to a file called upper.txt. Why not try using list comprehension?
4. Write a program that reads from a file which contains a word on each line. The program should write to a file called "g\_words.txt" only those words that start with 'g' or 'G'. Why not try using list comprehension?
5. Write an application that removes all duplicate words from the file.

Algorithm:

*Open connection to the file*  
*Read all the lines using readlines into a list*

Create an empty list which will hold all the unique words  
For each line of the list  
    If the line is not already in the unique list  
        Append it to the new list  
Open a writing connection to the file  
Print each word to the file

6. A file contains the name of a fruit and the number of units of that fruit in stock on separate lines.

```
Apple 56
Orange 39
Banana 45
Mango 12
Grape 94
Blueberry 85
Gooseberry 32
Fig 47
Melon 22
Grapefruit 12
```

Write a program that reads the data from this file into 2 lists, one holding the fruit and the other holding the stock levels. The program should display the data on the screen.

Algorithm to read the data into 2 lists:

Open connection to the file  
Read all the lines using readlines into a list  
Create an empty lists for fruit and stock  
For each line of the list  
    Split the line so it becomes a list  
    Append the fruit part of the list to the fruit list  
    Append the integer stock part of the list to the stock list

7. A file contains usernames and passwords as follows:

```
fred123 letmein
mike43 waterf0rd
oscar23 1LovePython
```

Write a program that asks the user for a username and password.  
The program should display "Welcome" if the username and password combination are in the file and a suitable message if not.

