TECHelium

Lets Face it, now

Project Oriented Python

File operation & Programs

File I/O

- Using input() or raw_input() and print() we can read and write on a standard input and output.
- Most program need to read config files/data files or write log files.
- Python provides basic functions and methods necessary to manipulate files.

File Objects

- Before we read or write a file , we have to open it.
- file = open(*filename*[, *mode*[, *buffersize*]])
- Buffersize: 0 –no buffering, 1 – line buffering,
  -1 – default, N – any integer value greater than 1.

Mode	Description
‘r’	Read only . Pointer at start of file.
‘r+’	Read and write. Pointer at start of file
‘w’	Write only. New file,Overwrite if exist
‘w+’	Write and read. New file, Overwrite if exist
‘a’	Append. Pointer at end. Create new if do not exist.

File Objects

- methods:
  - read([*nbytes*]), readline(), readlines()
  - write(*string*), writelines(*list*)
  - seek(*pos*[, *how*]), tell()
  - flush(), close()
  - fileno()

Example

```
>>> fl=open('PB0006-biggest and smallest.py','r+')
>>> fl.read()
'\n\n# program to take three number and find the biggest number\n\n\nnum1 =
    input("Enter first number  : ")\nnum2 = input("Enter Second number :
    ")\nnum3 = input("Enter Third  number : ")\n\nnum = [num1, num2,
    num3]\n\nbiggest = num[0]\nsmallest = num[0]\n\nfor x in range (1,3):\n  if
    biggest < num[x] :\n     biggest = num[x]\n  elif smallest > num[x]:\n
    smallest = num[x]\n\n\nprint "Biggest number is ", biggest\nprint "Smallest
    number is ", smallest\n‘
>>> fl.read()
''

>>> fl.seek(0,0)
>>> for lines in fl.readlines(): print lines
```

Line-by-line processing

- Reading a file line-by-line:

```
for line in open("filename").readlines():
    statements
```

Example:

```
count = 0
for line in open("bankaccount.txt").readlines():
    count = count + 1
print "The file contains", count, "lines."
```

Files: Input

inflobj = open(‘data’, ‘r’)	Open the file ‘data’ for input
S = inflobj.read()	Read whole file into one String
S = inflobj.read(N)	Reads N bytes (N >= 1)
L = inflobj.readlines()	Returns a list of line strings

Files: Output

outflobj = open(‘data’, ‘w’)	Open the file ‘data’ for writing
outflobj.write(S)	Writes the string S to file
outflobj.writelines(L)	Writes each of the strings in list L to file
outflobj.close()	Closes the file

Python OS module

- import os
- os.rename(current_file_name, new_file_name)
- os.remove(file_name)
- os.getcwd()

```
>>> for i in os.listdir(os.getcwd()) : print i
```

Exercise

- Write a program to
  - Take name as input,
  - Search a student-database.data file with following data in each line

<NAME> - <AGE> - <Grade>

  - If the name is found, it print the AGE and Grade ,
  - Else take age and grade as input and append the database.data file

Exercise

- Write a program
  - To print a menu

    1. Add records
    2. Search records
    3. Print records
    4. Exit

    Please Input your Choice (1-4):
  - Write a function for each choices and call the when input appropriately.
  - Record could be anything like example

<Device> <IP Address> <user name> <password> <prompt>

  - Search should be on first field.
  - Print records should well formatted example like

```
 ###########Printing Records ################
S.No.         Device       IP Address    User Name    Prompt
 1.          Router         192.168.1.1      admin         cisco>
2.            http-server    192.168.1.2      superuser    N/A
```

Thanks