File Handing in Python

Python allows to operate on ***flat files*** like create, read, update and delete by using a set of functions

- open(*filename*, *mode_purpose*) function
  - Used to open a file and return reference of that file
  - Purpose can be
    - r open a file for reading (default)
    - w create a file or overwrite a file
    - x create a file, returns an error if the file exist
    - a create a file for append mode
  - Mode Can be
    - t For text mode (default)
    - b For binary mode
- write(*str*) method
  - Write contents into a file using file object
- read() method
  - Returns all the contents from a file using file object
- read(n) method
  - Returns *n* number of character from a file using file object
- readline() method
  - Returns one line of text at a time using file object
- close() method
  - Closes a file using file object

Other functions from os module

- os.path.exists(*filename*)
  - Returns true if given file exists
- os.remove(*filename*)
  - Used to remove a file
- os.mkdir(*dirname*)
  - Used to make a directory
- os.rmdir(*directoryname*)
  - Used to remove an empty directory
- os.chdir(*directoryname*)
  - Used to change the directory
- os.rename(*oldname*,*newname*)
  - Used to rename a file or folder
- os.system(applicationname)
  - Used to start an application like notepad, calculate

Using with..as statement in Python

The **with** statement helps avoiding bugs and leaks by ensuring that a resource is properly released when the code using the resource is completely executed. The ***with*** statement is popularly used with file streams.

Example 1

```
# Create a file using simple file operation
file = open('demo.txt', 'w')
file.write('Welcome to World of Python\nIts fast and efficient\nWe love Python')
file.close()
```

Example 2

```
# Create a file with try-except-finally
file = open('demo.txt', 'w')
try:
    file.write('Welcome to World of Python\nIts fast and efficient\nWe love Python')
finally:
    file.close()
```

Example 3

```
# Create a file using with statement
with open('demo.txt', 'w') as file:
    file.write('Welcome to World of Python\nIts fast and efficient\nWe love Python')
```

Example 4

```
# Write a program to read all the contents of a file demo.txt
f = open("demo.txt", "r")
print(f.read())
f.close()
```

```
Welcome to World of Python
Its fast and efficient
We love Python
```

Example 5

```
# Write a program to read all the contents of a file demo.txt line by line
f = open("demo.txt", "r")
for x in f:
     print(x,end='')
f.close()
```

```
Welcome to World of Python
Its fast and efficient
We love Python
```

Example 6

```
# Write a program to read all the contents of a file demo.txt character by character
f = open("demo.txt", "r")
for x in f.read():
     print(x)
f.close()
```