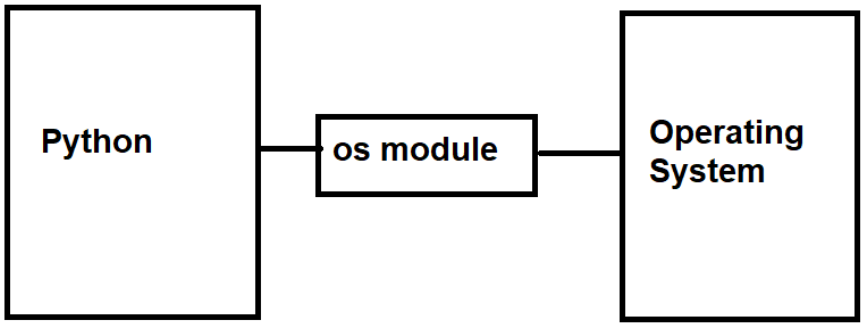
OS Module

OS Module is a predefined program or library provided by python.
OS Module is a default module which comes with python software.
OS Module provides the functions used to communicate with operating system.



Real Time OS module is used,

1. Automation (Performing Operations of Operating System)
2. Managing Files and Folders (Directories)
3. Managing Paths or Environments
4. Providing Security for files and folders
5. Examine files and folders

OS module functionality is operating system dependent. The functions of windows are not executed on unix and functions of unix are not executed in windows. Common functionality is executed in all operating systems.

os.name
The name of the operating system dependent module imported. The following names have currently been registered: 'posix', 'nt', 'java'.

posix → Unix
nt → windows
java → solaries

“name” is a variable, which hold name of the operating system.

Example:

```
>>> import os
>>> os.name
```

'nt'

os.getcwd()
This returns current working directory.

Example:
```
# Write a program to find current working directory

import os

name=os.getcwd()
print(f'{name} is current working directory')
```

Output:
E:\student drive\FSP9amAug is current working directory

chdir(path)
Change directory or change current working directory.

 # Write a program to gert current working directory and change current working directory

```
import os

cd=os.getcwd()
print(f'{cd} is current working directory')
os.chdir("e:\\")
print("Current working directory is changed...")
cd=os.getcwd()
print(f'{cd} is current working directory')
```

Output:
E:\student drive\FSP9amAug is current working directory
Current working directory is changed...
e:\ is current working directory

mkdir(path)
This function is used to create folder or directory.

Example:

```
# Write a program to create folder or directory

import os

fname=input("Enter Folder or Directory Name ")
os.mkdir(fname)
print("Folder is Created...")
```

Output:

```
Enter Folder or Directory Name e:\\folder1
Folder is Created...

Enter Folder or Directory Name folder1
Folder is Created...

Enter Folder or Directory Name folder1
Traceback (most recent call last):
  File "E:/student drive/FSP9amAug/ostest3.py", line 7, in <module>
    os.mkdir(fname)
FileExistsError: [WinError 183] Cannot create a file when that file already
exists: 'folder1'
```

Example:

```
# Write a program to create folder or directory


import os

fname=input("Enter Folder or Directory Name ")
os.mkdir(fname)
print("Folder is Created...")
os.chdir(fname)
open("file1","w")
print("File is created...")
```

Output:

```
Enter Folder or Directory Name e:\\folder2
Folder is Created...
```

rmdir(path)
remove directory or folder. This remove folder, if folder/directory is empty.

Example:
```
# Write a program to remove folder or directory

import os
fname=input("Enter Folder Name ")
os.rmdir(fname)
print("Folder or Directory is removed...")
```

Output:
```
Enter Folder Name e:\\folder1
Folder or Directory is removed...

Enter Folder Name e:\\folder1
Traceback (most recent call last):
  File "E:/student drive/FSP9amAug/ostest4.py", line 5, in <module>
    os.rmdir(fname)
FileNotFoundError: [WinError 2] The system cannot find the file specified:
'e:\\\\folder1'

Enter Folder Name e:\\folder2
Traceback (most recent call last):
  File "E:/student drive/FSP9amAug/ostest4.py", line 5, in <module>
    os.rmdir(fname)
OSError: [WinError 145] The directory is not empty: 'e:\\\\folder2'
```

shutil.rmtree(path)
This function is used to directory or entire tree structure.

```
# Write a program to remove or delete folder or directory
import shutil

fname=input("Enter Folder Name ")
ans=input("R u Sure ? (yes/no)")
if ans=="yes" or ans=="YES":
    shutil.rmtree(fname)
    print("folder or directory deleted")
```

Output:

```
 Enter Folder Name e:\\python
R u Sure ? (yes/no)yes
folder or directory deleted
```

File examine functions

os.path.exists(path)

This function returns True, if given file path exists else return False.

Example:

```
# Write a program to search given filename

import os.path

fname=input("Enter filename with path")
if os.path.exists(fname):
    print(f'{fname} exists')
else:
    print(f'{fname} not exists')
```

Output:

```
Enter filename with pathfolder1
folder1 exists

Enter filename with pathe:\\folder1
e:\\folder1 not exists
```

os.path.isfile(path)

This function returns True, if given filename is file else return False.

os.path.isdir(path)

This function returns True, if given filename is folder else return False.

Example:

```
# Write a program to find input file name is exists or not, if exists find is
given file name
```

```
# is file or folder

import os.path


fname=input("Enter FileName ")

if os.path.exists(fname):
    if os.path.isfile(fname):
        print("Ord File")
    else:
        print("Folder or Directory")
else:
    print("Given path is not exists...")
```

Output:

```
Enter FileName folder1
Folder or Directory

Enter FileName file1
Ord File

Enter FileName folder2
Given path is not exists...

Enter FileName file2
Given path is not exists...
```

Example:

```
# Write a program to create folder or directory

import os
import os.path
fname=input("Enter Folder Name ")
if os.path.exists(fname):
    print(f'{fname} exists')
else:
    os.mkdir(fname)
    print("Directory is Created...")
```

Output:

```
Enter Folder Name folder2
Directory is Created...

Enter Folder Name folder2
folder2 exists
```

Example:

```
# Write a program to remove folder

import os
import os.path

fname=input("Enter Folder Name ")
if os.path.exists(fname):
    if os.path.isdir(fname):
        os.rmdir(fname)
        print(f'{fname} Deleted...')
    else:
        print("It is not a folder")
else:
    print("folder not exists")
```

Output:

```
Enter Folder Name folder2
folder2 Deleted...

Enter Folder Name folder2
folder not exists

Enter Folder Name ostest8.py
It is not a folder
```

os.listdir(path)

This function return list with filename exists in given path.

Example:

```
# Write a program to list all file names exists in given folder or path
```

```
import os
import os.path

fname=input("Enter Folder Name ")
if os.path.exists(fname):
    if os.path.isdir(fname):
        list1=os.listdir(fname)
        for name in list1:
            print(name)
    else:
        print("not folder")
else:
    print("folder name not exists")
```

Output:

```
Enter Folder Name e:\\
$RECYCLE.BIN
app.log
bootTel.dat
D Drive Data
Desktop
desktop data
found.000
jdk-17.0.5_windows-x64_bin.exe
```

Example:

```
# Write a program to count files and folders exists in given pathname

import os
import os.path

fcount,dcount=0,0
fname=input("Enter Folder Name ")
if os.path.exists(fname):
    if os.path.isdir(fname):
        list1=os.listdir(fname)
        os.chdir(fname)
        for name in list1:
            if os.path.isfile(name):
```

```
            fcount+=1
        else:
            dcount+=1
    print(f'File(s) Count {fcount}')
    print(f'Dir Count {dcount}')
else:
    print("Not a folder")
else:
    print("not exists")
```

Output:

```
Enter Folder Name c:\\
File(s) Count 8
Dir Count 16

Enter Folder Name c:\\windows
File(s) Count 26
Dir Count 81
```

Example:

```
# Write a program to display content of folder with given extension

import os
import os.path

fname=input("Enter Folder Name ")
if os.path.exists(fname):
    if os.path.isdir(fname):
        ext=input("Enter Extension ")
        list1=os.listdir(fname)
        for name in list1:
            l=name.split(".")
            if len(l)==2:
                e=l[1]
                if e==ext:
                    print(name)
    else:
        print("not a folder")
else:
    print("not exists")
```

Output:

```
Enter Folder Name E:\\student drive\\HTMLCSSJavascript11am\\webapp1
Enter Extension html
about.html
contact.html
courses.html
csshome.html
htmlhome.html
```

os.remove(path)

Remove (delete) the file path. If path is a directory, an OSError is raised.

Example:

```
# Write a program to remove file

import os
import os.path

name=input("Enter File Name ")
if os.path.exists(name):
    if os.path.isfile(name):
        os.remove(name)
        print("File Deleted....")
    else:
        print("Not File")
else:
    print("File Name Not Exists")
```

Output:

```
Enter File Name file1
File Deleted....

Enter File Name file1
File Name Not Exists
```

os.rename(src,dst)

Rename the file or directory src to dst. If dst exists, the operation will fail with an OSError

Example:

```
# Write a program to rename a file

import os
import os.path
src=input("Enter Old File Name ")
dst=input("Enter New File Name ")
if os.path.exists(src):
    if os.path.exists(dst):
        print("Cannot rename")
    else:
        os.rename(src,dst)
        print("File renamed...")
else:
    print("src file name is not found")
```

Output:

```
Enter Old File Name ostest1.py
Enter New File Name otest1.py
File renamed...

Enter Old File Name otest1.py
Enter New File Name ostest2.py
Cannot rename
```

shutil.copyfile(src,dst)

This create copy of file

```
# write a program to create copy of the file

import shutil

file1=input("Enter Source File Name ")
file2=input("Enter Dest File Name ")
shutil.copyfile(file1,file2)
print("File Copied...")
```

Output:

```
Enter Source File Name otest1.py
```

Enter Dest File Name ostest1.py

Enter Source File Name otest1.py
Enter Dest File Name e:\\otest1.py
File Copied...

os.system() function with the code “shutdown /s /t 1” .

Write a program to shutdown PC or terminate IDLE

```
import os

cmd=input("Enter Command (shutdown or exit) ?")
if cmd=="exit":
    exit()
else:
    os.system("shutdown /s")
```

Example:

```
import os
os.system("notepad.exe")
0
os.system("paint.exe")
1
os.system("calc.exe")
0
```