Packages

a package is a folder or directory,it contains one or more python modules.

(or)

a python package is a collection of python modules

we can treat any package as a python package,that package should contain __init__.py file.

some time a package contains sub package's also,we can treat that sub package as a python sub-package,that sub package also should contains __init__.py file.

ex:

C:\Python310\example\main_pack\addition.py

```
a=10
b=20
def add(x,y):
    z=x+y
    print(z)
```

C:\Python310\example\main_pack\subtraction.py

```
c=30
d=40
def sub(x,y):
    z=x-y
    print(z)
```

C:\Python310\example\main_pack__init__.py

empty file is created

C:\Python310\example\main_pack\sub_pack\multiplication.py

```
e=50
f=60
def mul(x,y):
    z=x*y
    print(z)
```

C:\Python310\example\main_pack\sub_pack__init__.py

empty file is created

how to access the data from package from outside that package?

we can access the data from package from outside of that package by using following ways,they are

1).normal importing package

2).from importing a package

3).from importing a package with *

normal importing package:

```
import main_packagename

import main_packageaname.sub_packagename
```

ex:

C:\Python310\example\test.py

```
import main_pack.addition
import main_pack.subtraction
import main_pack.sub_pack.multiplication
print(main_pack.addition.a)
print(main_pack.addition.b)
main_pack.addition.add(4,5)
print(main_pack.subtraction.c)
print(main_pack.subtraction.d)
main_pack.subtraction.sub(2,3)
print(main_pack.sub_pack.multiplication.e)
print(main_pack.sub_pack.multiplication.f)
main_pack.sub_pack.multiplication.mul(3,2)
```

output:

```
10
20
9
30
40
-1
50
60
6
```

renameing a package

C:\Python310\example\test.py

```
import main_pack.addition as ma
import main_pack.subtraction as ms
```

```
import main_pack.sub_pack.multiplication as msm
print(ma.a)
print(ma.b)
ma.add(4,5)
print(ms.c)
print(ms.d)
ms.sub(2,3)
print(msm.e)
print(msm.f)
msm.mul(3,2)

output:
-------
10
20
9
30
40
-1
50
60
6

from importing a package
------------------------
        C:\Python310\example\test.py
        ---------------------------
from main_pack.addition import a,b,add
from main_pack.subtraction import c,d,sub
from main_pack.sub_pack.multiplication import e,f,mul
print(a)
print(b)
add(4,5)
print(c)
print(d)
sub(2,3)
print(e)
print(f)
mul(3,2)

output:
------
10
20
9
30
40
-1
50
60
```

6

from import with '*' option

C:\Python310\example\test.py

```
from main_pack.addition import *
from main_pack.subtraction import *
from main_pack.sub_pack.multiplication import *
print(a)
print(b)
add(4,5)
print(c)
print(d)
sub(2,3)
print(e)
print(f)
mul(3,2)
```

output

```
10
20
9
30
40
-1
50
60
6
```