

15. Python Package

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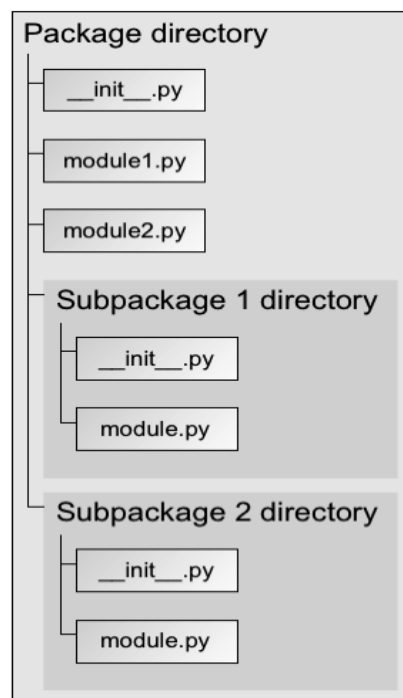
16. PYTHON PACKAGE

1. What is a package?

- ✓ A package is nothing but folder or directory which represents collection of python modules(programs)

2. `__init__.py` file

- ✓ Any folder or directory contains `__init__.py` file, is considered as a Python package.
- ✓ `__init__.py` can be empty file.
- ✓ A package can contain sub packages also.



3. Advantage

- ✓ We can resolve naming conflicts.
- ✓ We can identify our components uniquely.
- ✓ It improves the modularity of the application.

Example1

```
|  
|---demo1.py  
|  
|---demo2.py  
|  
|----- __init__.py  
|  
|---pack1  
|  
|----- test1.py  
|  
|----- __init__.py
```

Program Creating __init__.py file
Name __init__.py

Empty file

Program executing a package
Name test1.py

```
def m1():  
    print("Hello this is test1 present in pack1")
```

Program Name executing a package
demo1.py

```
import pack1.test1  
pack1.test1.m1()
```

output

Hello this is test1 present in pack1

Program Name executing a package
demo2.py

```
from pack1.test1 import m1  
m1()
```

output

Hello this is test1 present in pack1

Example2

```
|  
|---demo3.py  
|  
|-----__init__.py  
|  
|---maindir  
|  
|-----test2.py  
|  
|-----__init__.py  
|  
|-----subdir  
|  
|-----test3.py  
|  
|-----__init__.py
```

Program package
Name __init__.py

Empty file

Program executing a package
Name test2.py

```
def m2():  
    print("This is test2 present in maindir")
```

Program Name	executing a package test3.py
	<pre>def m3(): print("This is test3 present in maindir.subdir")</pre>

Program Name	executing a package demo3.py
	<pre>from maindir.test2 import m2 from maindir.subdir.test3 import m3 m2() m3()</pre>

output	<pre>This is test2 present in maindir This is test3 present in maindir.subdir</pre>
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Make a note

- ✓ Summary diagram of library, packages, modules which contains functions, classes and variables.
 - Library - A group of packages
 - Package - A group of modules
 - Modules - A group of variables functions and classes.