14. Python Package

Contents

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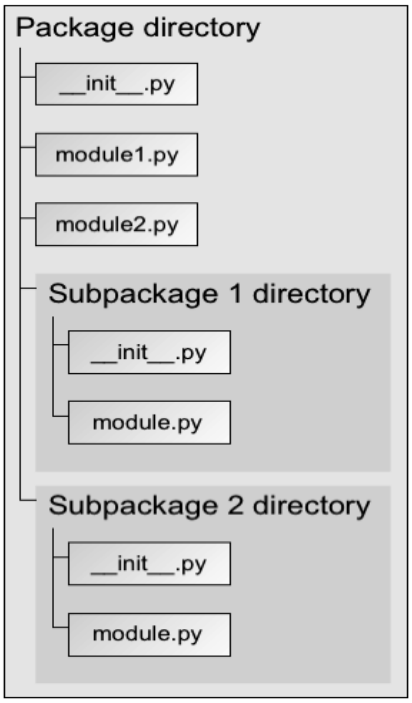
1. What is a package?

- ✓ 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 Name: Creating __init__.py file

__init__.py

Empty file

Program Name: executing a package

test1.py

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

Program executing a package
Name demo1.py

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

output

```
Hello this is test1 present in pack1
```

Program executing a package
Name 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 Name: package
__init__.py

Empty file

Program Name: executing a package
test2.py

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

Program Name: executing a package
test3.py

```
def m3():
        print("This is test3 present in maindir.subdir")
```

Program Name: executing a package
demo3.py

```
from maindir.test2 import m2
from maindir.subdir.test3 import m3

m2()
m3()
```

output

```
This is test2 present in maindir
This is test3 present in maindir.subdir
```

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.