MODULES AND PACKAGES

CU10 : WEEK 13

OBJECTIVES:

- Discuss python modules and packages.

- Organize IPO Chart and Flowchart using python modules and packages.

- Develop modules / packages based on IPO chart and Flowchart.

Python Packages

PYTHON PACKAGES

- namespaces containing multiple packages and modules. They're just directories, but with certain requirements.

- a directory which MUST contain a special file called __init__.py. This file, which can be empty, indicates that the directory it's in is a Python package. That way it can be imported the same way as a module.

PYTHON PACKAGES

- allow for a hierarchical structuring of the module namespace using dot notation.
- In the same way that modules help avoid collisions between global variable names, packages help avoid collisions between module names.

PYTHON PACKAGES

mod1.py

```python
Python

def foo():
    print('[mod1] foo()')

class Foo:
    pass
```

mod2.py

```python
Python

def bar():
    print('[mod2] bar()')

class Bar:
    pass
```

📁 **pkg**

🐍 **mod1.py**

🐍 **mod2.py**

PYTHON PACKAGES

```python
Python

import <module_name>[, <module_name> ...]
```

```python
Python

>>> import pkg.mod1, pkg.mod2
>>> pkg.mod1.foo()
[mod1] foo()
>>> x = pkg.mod2.Bar()
>>> x
<pkg.mod2.Bar object at 0x033F7290>
```

```python
Python

from <module_name> import <name(s)>
```

```python
Python

>>> from pkg.mod1 import foo
>>> foo()
[mod1] foo()
```

PYTHON PACKAGES

```
Python

from <module_name> import <name> as <alt_name>
```

```
Python

>>> from pkg.mod2 import Bar as Qux
>>> x = Qux()
>>> x
<pkg.mod2.Bar object at 0x036DFFD0>
```

PYTHON PACKAGES

You can import modules with these statements as well:

Python

```python
from <package_name> import <modules_name>[, <module_name> ...]
from <package_name> import <module_name> as <alt_name>
```

Python

```python
>>> from pkg import mod1
>>> mod1.foo()
[mod1] foo()

>>> from pkg import mod2 as quux
>>> quux.bar()
[mod2] bar()
```

Any Questions?

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