Modules and Packages

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Python Overview

- Programs are composed of modules

- Modules contain statements

- Statements contain expressions

- Expressions create and process objects

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What are Modules?

- Modules are files containing Python definitions and statements (ex. *name*.py)

- A module allows you to organize your python code by grouping related code which makes the code easier to understand and use.

- A module's definitions can be imported into other modules by using "import *name*".

More on Modules

- You can use any Python source file as a module by executing an import statement.

  import module1[, module2[,... moduleN]

- Set the search path of the module(**sys.path**).

- **For example,** to import the module CSE.py, you need to put the following command at the top of the script –

  #!/usr/bin/python

  import CSE

More on Modules

- Python's *from* statement is used to import specific attributes from a module.

  from modname import name1[, name2[, ... nameN]]

- **For example**, to import the function addition from the module calculator, use the following statement

  from calculator import addition

  from calculator import * (import whole module)

- Local and global namespace

Packages

- A Package is simply a collection of similar modules, sub-packages etc.

- Python has packages for directories and modules for files.

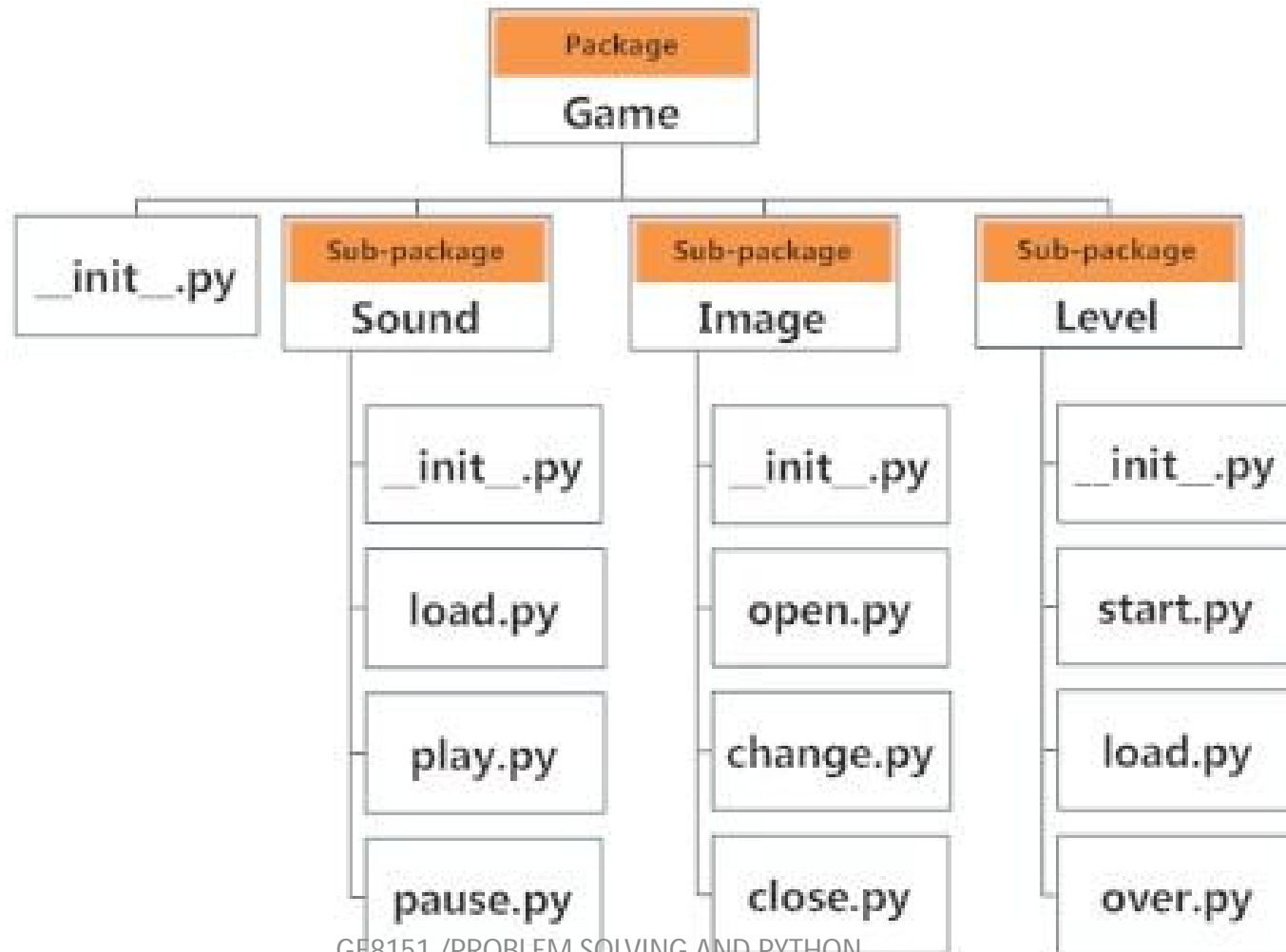- A directory must contain a file named **__init__.py** in order for Python to consider it as a package.

Steps to create and import Package:

- Create a directory

- Place different modules inside the directory

- Create a __init__.py file.

- Import the package and use the attributes

Example: Developing a game

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Importing module from a package

➢ We can import modules from packages using the dot (.) operator.

➢ **For example,** if want to import the **start** module in the above example, it is done as follows.

import Game.Level.start

➢ Now if this module contains a function named **select_difficulty()**, we must use the full name to reference it.

Game.Level.start.select_difficulty(2)

Thank You