CHAPTER 11 – PYTHON LIBRARIES

11.1

Modules are script files identified by a name (extension .py) that contain blocks of code performing specific actions or calculations.

Modules must be organized for purpose and homogeneous contents

The types of code blocks are:

* Functions
* Special data types (=classes of objects)
* Methods (to work with attributes of data)
* Docstrings
* Comments
* Sample data

Modules can be classified in three categories:

1. Standard library 🡪 modules installed on the computer together with the language
2. Created by the user 🡪 saved on the computer and loaded on command
3. Developed by other programmers 🡪 downloaded from the internet

A library is made up of modules, sub-libraries can also be contained in libraries

The dot notation specifies what function to use:

library.sublibrary.module.function(arguments)

The reserved word import is used to load the contents of a module or library in the RAM managed by python, which can also create an alias for a module/library:

import oldnameofmodule as aliasnameofmodule

To load only specific functions we can use from:

from nameofmodule import nameoffunction

To import a whole module without having to use nameofmodule.namoffunction every time:

From nameofmodule import \*

To know what modules are preinstalled type:

help(‘modules’)

To show which modules are currently active, type:

dir()

Using the module name as an argument for dir, it lists the elements in the module, when using an object as an argument we get its attributes

To find help online use:

PyPI

GitHub

11.2

The standard python library contains more than 180 modules

Math module’s functions:

.ceil(number)

.floor(number)

.sqrt(number)

.pi

.exp(number)

.factorial(number)

.gcd(a,b)

.hypot(x,y)

.isfinite(x)

.pow(x,y)

Random module’s functions:

.random()

.choice(sequence)

.randrange([start,]stop[,step])

.randint(min,max)

Os functions:

.listdir([path])

.getcwd()

.chdir(path)

.mkdir(path)

.rename(oldname,newname)

.remove(file)

.rmdir(path)

OS.path functions:

.join (path, filename)

.isfile (path)

.isdir (path)

The copy module only provides two functions to perform generic object copying operations.

11.4

A library/package/project is an application written by a third party, generally it contains other libraries called dependencies.

There are two ways to install a library:

* Using the download files feature on the web
* Using the pip install feature from the os interface

The pyperclip library allows interaction with the windows clipboard, to import it:

Import pyperclip as pc

The requests library allows to interact with web objects, to import it:

Import requests as R