# Worksheet #3

***Modules***

***recursion***

1. create a *package* classesEscola and inside adapt exercise 1 of the worksheet on “Classes, objects and methods” to use the organization by modules. In the end, the *package* must have the following files:

* **person.py** : contains all the code needed to define the Person class
* **collaborator.py** : contains all the necessary code for defining the Collaborator class , which inherits from Pessoa ( *import* from the person module )
* **professor.py** : contains all the code necessary for defining the Professor class , which inherits from Collaborator ( *import* from collaborator)
* **employee.py** : contains all the code necessary for defining the Employee class , which inherits from Collaborator ( *import from the* Collaborator module )
* **student.py** : contains all the code needed to define the Student class , which inherits from Pessoa ( *import* from module person )
* **main.py** : contains the *imports* and code needed to show the same output as at the end of the exercise in the previous sheet:

Text

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1. create a *package* classesBanco and inside adapt exercise 2 of the same form to use the organization by modules. In the end, when running the main.py file , you should get the same output:

Graphical user interface, application

Description automatically generated

1. Create recursive functions that implement the following features:
   1. Print values from n to 0. To call the function, the code must ask the user for the value n and ensure that it is not less than 0.

Example:

|  |  |
| --- | --- |
| Input | Output |
| 3 | 3  2  1  0 |

* 1. Consecutively sums values from 1 to n. To call the function, the code must ask the user for the value n and ensure that it is not less than 0.

Example:

|  |  |
| --- | --- |
| Input | Output |
| 3 | 6 # (3+2+1) |

* 1. Performs a multiplication by making successive sums. To call the function, the values must be asked from the user and it must be guaranteed that none of them is less than 1.

|  |  |
| --- | --- |
| Input | Output |
| 3  4 | 12 # (4+4+4) |

* 1. Place the developed recursive functions in a file (module) recursivas.py . Create a file main.py , which contains code to show the user a menu that allows him to choose which recursive function he wants to use from that module.
  2. Create a *package* called funcoes and place the recursivas.py module inside that *package* . The main.py file must stay outside the package, but keep the functionality.