Introduction to Python for Economists

Homework: Dictionary and Functions

1. We want to write functions for creating and changing a 'programming language database' (PLDB), as given on slide 25 of Section 2.
   - write a function **create_PLDB** that takes as parameters a user name and a list of programming languages, and returns a PLDB with one (key, value)-pair taken from the parameters; the user name has as user default value 'bill' , the list of programming languages has as default value the list ['python']
   - write a function **extend_PLDB** that takes as parameters a dictionary, a user name, and a list of programming languages, and adds user name and programming languages to the dictionary
   - write a function **python_up_PLDB** that runs through all language lists of a PLDB and checks if it contains 'python'; if not it adds 'python' to the list
   - save the file as **PLDB_module.py**
2. Now we want to write functions that create names and lists of items
   - Start a new file: Import the function 'randint' from the standard library by writing in the first line of your code: **from random import randint**
   - write a function **create_double_name_from_list** that takes as input parameter a list of String objects. It randomly chooses two items string1 and string2, creates a new String item as combination of both (string1+" "+string2) and returns it
   - write a function **get_sublist** that takes as input parameter a list of String objects. It randomly chooses 2 to 4 different items from it and returns them as a new list
   - save the file as **Lists_module.py**
3. Now we want to use all our functions in a main file
   - start a new file and import all the functions from **PLDB_module.py** and **Lists_module.py**
   - create a list with 10 user names (first names)
   - create a list with 8 names of programming languages
   - call the function **create_PLDB** without arguments
   - write a loop that runs 20 rounds, whereby in each round
     - call **create_double_name_from_list** to create a double name from the list of user names
     - call **get_sublist** to create a sublist from the list of programming languages
     - call **extend_PLDB** to add the double name and the list of programming languages to the PLDB
   - call the function **python_up_PLDB** to make the PLDB more realistic ;)