Progress Academy Homework 14.01.2018

1. Help your future career! You know bubble sort already. Find information for Insertion Sort, Merge Sort and Quicksort. Wikipedia has a pseudocode example for each of them. Try to implement it in Python and once you have understood them try to make a simple document so you have explanation in your own words for reference.

2. Write a Python function to find the Max of three numbers.

3. Write a function to compute 5/0 and use try/except to catch the exceptions.

4. Write a Python program to copy the contents of a file to another file. You can be really clever here and learn something.

5. Write a Python program to read a random line from a file.

6. Write a Python program to print yesterday, today, tomorrow.

7. Write a Python program to subtract a user defined number of days from current date.

8. Define a class named Bulgarian which has a static method called printNationality.

9. Define a class named Shape and its subclass Square. The Square class has an init function which takes a length as argument. Both classes have a area function which can print the area of the shape where Shape's area is 0 by default. Hint: To override a method in super class, we can define a method with the same name in the super class.

10. Write a Python program to execute a string containing Python code. So you learn something about exec and eval and know not to use it.

11. We just went over the database basics. But if you want dabble more. Learn about database normalisation and some SQLAlchemy topics like constructing mappers and relationships. Not required but would be useful for you.

12. Create a csv file temperatures.csv with the following content. How to create a csv file properly is left up to you. You can even use python for it.
city,temp
Sofia,25
Burgas,32
Varna,30
Plovdiv,32
Sliven,29
Now read it and plot it with matplotlib.

Do not limit your revision only to these simple tasks. They just illustrate the topics we have covered. Send me your codeacademy,codefights,hackerrank profile! Solving challenges there would immensely help your revision.