Assignment no. 1

Scenario: Very simple calculator

In this assignment you will implement a very simple calculator in Python. This calculator will receive input from the console, compute a result, and output it to the console.
The goal of this assignment is for you to become familiar with the command-line, run a Python script, look at and debug code in PyCharm, and do some very basic Python programming.

Hint: Don't cheat yourself by skipping some of the exercises or copying code from others. Ask for help if you need help by using the moodle forum. Stick to the instructions for submitting homework stated on the Moodle page.

Exercise 1 [2.5 points]

Read the *forum rules* and the *instructions for submitting homework* in moodle. Install Python 64 bit version 3.6.x or 3.7.x and install PyCharm.

Create a new PyCharm project and a file `ex1.py` with the following content (replace `<yourname>` with your name as it is shown in KUSSS, `<yourID>` with the student ID that you use to log into KUSSS, and `<ExerciseNumber>` with the exercise number):

```
"""
Author: <yourname>
Matr.Nr.: <yourID>
Exercise <ExerciseNumber>
"""

a = 1 + 2
print(a)
print("I read the forum rules and instructions for submitting homework.")
print("I completed exercise 1!")
```

Run the file in PyCharm. You should see the following output in the console after running the file:

```
3
I read the forum rules and instructions for submitting homework.
I completed exercise 1!
```

Debug the file in PyCharm. Set a debugging breakpoint to the line `print(a)` and check the variable explorer, you should see the variable `a` and its value. Step to the next line and check the debugging console: you should see the value `3` printed to the console. Run the file to the end: you should see the output as shown above.

Submit the file `ex1.py` in moodle for exercise 1.

Hint: Stick to the specified Python version.
Hint: Don't cheat yourself and really use the PyCharm debugger to inspect and run the code, this will be important to find and locate errors in your code later.

Exercise 2 [2.5 points]

Run unit-testing script `ex2_unittest.py` via the command line on file `ex2.py`. The file `ex2.py` should have the following content (replace `<yourname>` with your name as it is shown in KUSSS, `<yourID>` with the student ID that you use to log into KUSSS, and `<ExerciseNumber>` with the exercise number):

```
"""
Author: <yourname>
Matr.Nr.: <yourID>
Exercise <ExerciseNumber>
"""

a = 2 + 2
print(a)
print("I also completed exercise 2!")
```

To do this, place the file `ex2_unittest.py` in the same directory as `ex2.py`. Then run the unit test by running the file `ex2_unittest.py` with Python. You can do this via the command line (replace `<filedirectory>` with the name of the directory you placed your files in):

```
cd <filedirectory>
python3 ex2_unittest.py
```

Note that you may have to use `python` instead of `python3` depending on your Pyhon installation and OS.

Hint: The unit-testing script will tell you how many points you will probably get for the tested solution. There will be unit-testing scripts for every exercise that test your solution with some example inputs (for grading other user inputs may be used, so cheating will get you 0 points). IMPORTANT: The scripts will be run on a Ubuntu machine compatible with Python 3.6 and 3.7. Getting the points on the unit-testing scrips you run at home does not guarantee the same points upon submission, common mistakes are listed in *instructions for submitting homework* in moodle.

Exercise 3 [5 points]

tba

Exercise 4 [5 points]

tba

Submission: electronically via Moodle:

`https://moodle.jku.at/`

Deadline: For deadlines see individual Moodle exercises.
Follow the **instructions for submitting homework** stated on the Moodle page!