Problem Set 1 - Getting Started

Hello, student!

The goal of this first problem-set is to make sure you all set-up for the upcoming assignments required for this course, and to familiarize with some basic Python-code.

Assignment 1.1 - Running your first Python programs

Before working on your PC let's start running some Python code.

As you will learn during the lecture, Python is run using the **Python interpreter**.
Before using your own, you can try to run some code on Google's servers.

For this purpose we prepared some exercise on Google Colab[1], a platform made to take and share notes containing runnable Python-code.

Follow this url https://colab.research.google.com/drive/1kRGe1DWe3S21u7I_W_XD_x47KdIy97mx to access the document.

Assignment 1.2 - Set up the Python interpreter locally

Follow the instructions in the slides available on your course page in order to setup Python and Visual Studio Code for the upcoming Labs.

Be sure to have everything working correctly since this will be required for you to solve the assignments. Please contact your lecturer or assistant if you exerience problems in the setup.

[1] More about Google Colab: https://research.google.com/colaboratory/faq.html

Assignment 1.3 - Run the programs of Assignment 1.1 locally

Using the following programs, try to:

1. Create a base-directory in your "*Home*" folder that will contain all the programs (e.g. "`/home/fancy_unicorn/programs/introduction_to_computer_programming/problem_set_1`");
2. Create a file for each program, using the same name as the program's (e.g. `hello_student` will be `hello_student.py`);
3. Copy the code in the respective file using a text-editor;
4. Run the code using the command "`python <path-to-the-file>/<file-name.py>`" (e.g. `python ~/programs/hello_student.py`);
5. Interact with the program via the console.

Part a - Program `hello_student`

```
"""
Program "hello_student"
"""

# executes program in the "__main__" context
if __name__ == "__main__":
    # read the input from command-line and stores it in an object
    name = input("What's your name? ")
    # print a message for the user containing the value previously inserted
    print(f"Hello {name}, welcome to \"Introduction to Computer Programming
        \"!")
```

Part b - Program `mathematical_operators`

```
"""
Program "mathematical_operators"
"""

# executes program in the "__main__" context
if __name__ == "__main__":
    print("Example of the usage of several mathematical operators:")

    # execute operations
    i = 50 + 20
    j = i - 10
    k = j * 2
    l = k / 6

    # print results
    print(f"i = 50 + 20 = {i}")
    print(f"j = i - 10 = {j}")
    print(f"k = j * 2 = {k}")
    print(f"l = k / 6 = {l}")
```

Part c - Program `simple_calculator`

Assignment 1.4 - Program `simple_calculator`

```
"""
Program "simple_calculator"
"""


# executes program in the "__main__" context
if __name__ == "__main__":
    print("Simple calculator")
    print("-----------------")

    choice = 5

    while True:
        print("1 - Addition")
        print("2 - Subtraction")
        print("3 - Multiplication")
        print("4 - Division")
        print("5 - Exit")

        # get choice
        choice = int(input("Choose the operation: "))

        if choice == 1:
            print("Insert the two numbers to add: ")
            num1 = int(input())
            num2 = int(input())
            print(f"{num1} + {num2} = {num1 + num2}")

        elif choice == 2:
            print("Insert the two numbers to subtract: ")
            num1 = int(input())
            num2 = int(input())
            print(f"{num1} - {num2} = {num1 - num2}")

        elif choice == 3:
            print("Insert the two numbers to multiply: ")
            num1 = int(input())
            num2 = int(input())
            print(f"{num1} * {num2} = {num1 * num2}")

        elif choice == 4:
            print("Insert the two numbers to divide: ")
            num1 = int(input())
            num2 = int(input())
            print(f"{num1} / {num2} = {num1 / num2}")

        elif choice == 5:
```

```
            print("Program terminated.")
            break
        # default
        else:
            print("---")
            print(f"Invalid choice: {choice}")
        print("---")
```