PYTHON L00:

We will learn more about the python language when we meet tomorrow, but we want you to get started with the basics of the Python language.

If you are still having trouble and you didn't finish the morning part of the lab, raise your hand and we'll come to help you.

Exercise 0.1) Installing Python and Idle

If you are using Ubuntu:

Python is probably already installed. Check if you have Python by typing this command at the terminal.

```
~$ python –V
```

If you get something like “Python 2.7.1”, you have python installed already.

If you do not get a version number you can type this command to download and install Python:

```
~$ sudo apt-get install python
```

Check if your idle is working by typing:

```
~$ idle
```

New window should pop up. If you get an error, you need to install Idle using this command:

```
~$ sudo apt-get install idle
```

If you are using Mac:

Python is probably already installed but it might not be the right version. Check if you have Python by typing this command at the terminal.

```
~$ python –V
```

If you get a version that starts with “Python 2.7”, you have a proper version of Python installed already.
If not, then you need to install it. Raise your hand, and we’ll come to help again.

Once you have python, check if your idle is working by typing:

```
~$ idle
```

If you get an error, you need to install Idle. Ask Louis or Jovana to help you with the installation of both idle and python if you have trouble.

NOTE: Save all your work into the local git repository Lab_Python_00.

Exercise 1.2) Getting started with Idle

IDLE is the standard integrated development environment for Python. Its name is an acronym of "Integrated DeveLopment Environment". IDLE has a Python shell window that provides access to the Python interactive mode. It also has a file editor for creating and editing source files and a basic debugger for debugging your programs.

Type this command at the terminal to start idle:

```
~$ idle
```

You can type Python code directly into the interactive Python shell, at the '>>>' prompt. Whenever you enter a complete code fragment, it will be executed. For instance, typing:

```
>>> print 'Hello, AITI!'
```

and pressing ENTER, will cause the following to be displayed:

Hello, AITI!

Congratulations!!!
You have just written your first program in Python.

Exercise 1.3) Using the IDLE file editor

Open a new window by choosing New Window from the File menu.

Save the file as Day1.py. Do NOT skip the '.py' portion of the file name -otherwise, you will lose out on syntax highlighting!

Before you begin any exercise, please put the following line in your code:

```
print "Your Name"
```

You may now write your Hello, world!!! Program - **it should be only one line!** When you are done, save your work and run it. To run your program, choose Run Module from the Run menu (or just hit F5 on Linux or fn-F5 on a Mac)

Your code should look like this:

```
print "Hello World!!!"
```

Ex 1.4) Errors in Python:

Type this into a new file::

```
a = 95
print c
```

Save it and run your program. **Always save your last change before you run your program.**

What do you see? When an error occurs in the course of running your program, the interpreter prints an error message. Try to identify why an error occurred. If you have difficulties with this ask a partner or the lab instructors.

Now, type: print a, save it and Run the code. It should work fine.

Ex 1.5) The Python Console: Using Python as a Calculator

The Python interactive shell can be used as a calculator. In this exercise, you will practice using the python shell as a calculator.

1. What does the Python shell output if you try to compute 11/2?

   What about 11.0/2?

   Interesting? You will find out why tomorrow. If you are too curious ask a partner.

2. Calculate 3 to the power of 27.

3. Calculate (134533 + 6889980 -84849) to the power of 3.

4. The distance from the lab to the market is 7.9km and it takes you 45 minutes to walk there. What is your average time per meter? Use the python shell to calculate it. Remember to practice printing your answer out in a very readable manner. E.g. print "The average time per meter is ", your answer

5. A friend of yours travels a distance of 4.7km north and you travel a distance of 9.4km East. What is the shortest distance between you and your friend in miles?
   Hint: 1 kilometre = 0.621371miles

Write your answers to these five questions in a text file named answers00.txt and save it into your git repository Lab_Python_00.

Once you are finished with the lab don't forget to git add the new file, git commit and git push (following similar instructions from our morning lab). If you have trouble, raise your hand! You want to commit so we can later look into your repository and check your answers!