Teens Coding - Python

Session 1

Goals

- Introduction to Python
- Installing Python
- String data type

Python

Python is a general programming language which follows a very simple code structure and syntaxes.

Python can be used for many purposes, such as backend, GUI (graphical user interface), services, games development.

Python Installation

Mac

1. If you are using Mac, it has Python by default. But the default version is 2.7

2. For the latest version download from python.org. Run the installation as instructed on https://www.python.org/downloads/

3. Once you have installed it you can run Python with either python or python3 command

Windows

For Windows please follow this installation instruction https://www.python.org/downloads/windows/

Python Editor

You can write Python code in almost any code editor. But pick an editor that will help you in being more productive with your development. Editor should:

1. Give a code completion

2. Tell you if there is typo

3. Give error messages

For this course we will be using Visual Studio Code. You can install it for free http://code.visualstudio.com

Python Data Type

In programming language, it is important to know that every object has it own type. In this case, an object is like a person. The object person is a type of human. Another example is a Toyota car, it is an object of type Car.

Some of primitive data types in Python:

- String - a regular text
- Integer - a number
- Float - a number with comma value
- Boolean - type with only True or False

Built in Function - type(), print()

Function is the ability to do something. Just like a human can walk, talk. If human is an object in Python, we can do human.walk(), human.say(‘hello’), human.calculate(2+3).

Built-in functions are function that already made available when you installed Python.

Type function is a built-in function to find out the type of an object. If you do type(1) it will tell us that 1 is a <class ‘int'> which means it is an integer.

The function print() is to print to the console. You need to give this function something to print on console. Type print(2+3)

Variable

Variable is a storage to store a single data. We store data by giving it a name / label and assign a value.

x = 2

x is the name of the variable
= assignment operation
2 is the value

Variable in Python can be assigned with any kind of data like string, integer, boolean, etc.

String

String is a regular text. To create a string you can enclose the text with single or double quotes, like: ‘hello’ or “world”.

If you use a single quotes or double quotes you can not use them inside the string, like this: ‘I’m a string but causing an error’. To avoid this error, we can escape the quotes: ‘i\’m a string’. Using \ before a single or double quotes make them ignored by Python.

Comments in Python

To add comments to your code, you can use:

for a single line

Or

‘”
for multiple lines
of comments like this one
‘”

String Concatenation

This is how we put together strings into one string.

example:
name = “John”
salutation = “Mr”

- Use +: print(“Hello ” + salutation + “. ” + name)
  You can use this only with strings

- Use %s: print(“Hello %s. %s” % (salutation, name))
  %s is a placeholder for a string. After the string we put “%” and the data that will fill up the place holders.

- Use string method format() : “Hello {0} {1}”.format(salutation, name)
  format() fills the place holder inside a string. In our case we have two place holders {0} and {1}. This place holders are indexed which start at 0

Home Work

Create a new file in your Visual Studio, name the file homework_1.py.

- Create a variable first_name
- Store any name inside that variable
- Print out the name in the console
- Print “Your name has x characters” where x is the total characters of the name