Introduction to Python

DeltaWomen - UNOV
2019-06-21

Class details

- Class time: **Fridays 5pm - 7pm (GMT+1)**
  - Lecture: 5pm - 6:15pm
  - Q&A: 6:15pm - 7:00pm
- Instructor details:
  - Name: Aslamah
  - Contact: **arahman.vol@gmail.com**
- All course material will be available on GitHub
  - **https://github.com/aslamahrahman/Python-UNOV-2019**
- Weekly assignments:
  - Due every **Wednesday 11pm (GMT+1)**
  - Email to arahman.vol@gmail.com

Last week’s assignment discussion

Topics for today

- Variables
- Datatypes
- Assignment
- Type casting
- Strings
- Operators
- Comments
- How to run a program on IDE & Command prompt (Calculator demo)
- Lists
- Tuples
- Dictionaries
- Error handling

Variables

- Holds a value
- Can be named using:
  - Any alphabet / number / underscore (_) / hyphen (-)
  - Must begin with an alphabet
  - Example:
    - X
    - var_1
    - X_old
- Case sensitive: age, Age, AGE, aGe are all different
- Demo

Datatypes

- Type of the data a variable is holding
- Examples:
  - int : Integer (1,2,3….)
  - float : Floating point (1.1, 1.234, 45.33..)
  - char : Character (‘a’, ‘W’, ‘/’, ‘#’)
  - str : String (“hello”, “how are you?” …)
- In Python, a variable can hold any datatype

Variable assignment

- Demo
- Rewriting variable values
- Printing values
- Printing text + number

Type casting

- Convert a variable from datatype to another datatype
- Example:
  - int -> float
    - x = float(1)
  - float -> int
    - x = int(1.456)
  - char -> int (ASCII conversation)
    - x = int(‘a’)
  - int -> string
    - x = str(1)
- Demo

Strings

- Example: “hello”, “Hello!”, “hellooo ?!”
- Strings as arrays
  - Array - list of characters
  - str_eg = “hello world”
  - str_eg[0], str_eg[4], str_eq[20]
- Length of strings:
  - len(str_eg)
- Substring: Section of a string
  - str[5:7]
- String concatenation: Joining two strings
  - str_1 + str_2
- More operations: https://www.w3schools.com/python/python_ref_string.asp

Operators & demo

- Arithmetic (+,-,*,/,%,**,^)
- Assignment (=)
  - More: +=, -=, *=, /= etc.
- Comparison (==, !==, >, >=, <, <=)
- Logical (and, or, not)
  - Truth tables
- Bitwise (&, |, ^, ~, <<, >>)
  - Binary representation
  - Bitwise manipulation

Questions?