Python Workshop

DUCSS, Trinity College Dublin

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Introduction

* Brief introduction about yourself
* Introduction about what is going to be covered in the workshop

Setting up Workspace

* Check installation of **Py3.x**
* Check Python in PATH
* Distribute installers in USB key
* IDE : Vim, Emacs, Atom, Sublime, PyCharm, Anaconda, Eclipse, IntellijIDEA

Hello World!

* Create a python file
* Add print command
* Modify the file to run using __name__ == ‘__main__’

Variables

····►Indentation

Comments

* Variables
* White spacing
* Comments
    * Single line
    * Multi-line

Types

* String - concatenation, multiplication, accessing elements, splicing, split
* Integer
* Boolean
* Float
* Decimal - from decimal import Decimal
* None

Operators

* Arithmetic => - +, -, /, *, **, +=, -=, /=, *=
* Logical operators => not, and, or
* Identity => is
* Comparison : >, <, >=, <=, ==, !=

Error Handling

* try - except
* try - except - finally
* try - except - else
* try - except - else - finally

Control Flow

* if
* if - else
* if - elif - else
* while
* for

Functions

* Single return value
* Multiple return values
* Anonymous functions : Lambda
* Default value arguments
* Arbitrary arguments

Generators

(Advanced)

* Simple function generator

Decorators

(Advanced)

* Simple decorator
* Decorator with arguments

Data Structures

* List - len, append, pop, insert, extend, splicing, reverse, sorted
* Tuple - len
* Dict - update, del, keys, values, get
* Set - intersection, union, addition, subtraction
* Factory functions - list, tuple, dict, set

List Comprehension

(Advanced)

* Using for loop
* Using for and if
* Using generators

Classes

* Definition
* Constructor
* Attributes
* Methods
* Functions
* Scope - public & private

Magic Methods

(Advanced)

* Operator methods

Files

* Use open() directly
* Use context manager *(with)*

Packages

* File organization
* __init__.py
* “import” statement

math, sys & os

3rd Party Library

* Try pip install
* Import the package - shell & program
* Do something!