Python Course with Catalyst Programmers

Installation

- On Windows
- On GNU/Linux

The Beginning

- Using the Python interpreter
- Using a source file
- Whitespaces and indentation
- Comments
- Modules
- Evaluation your code from a Python file in the interpreter

Variables and Datatypes

- Keywords and Identifiers
- Reading input from the Keyboard
- Some Examples
- Multiple assignments in a single line
- Formatting strings

Operators and expressions

- Operators
- Example of integer arithmetic
- Relational Operators
- Logical Operators
- Shorthand Operator
- Expressions
- Type Conversions

If-else , the control flow

CATALYST PROGRAMMERS
"Be The Catalyst Of Your Own Code"

If statement
Else statement
Truth value testing
match statements

Looping

While loop
Fibonacci Series
Power Series
Multiplication Table
Some printing * examples
Lists
For loop
range() function
Continue statement
Else statement in a loop
Game of sticks

Data Structures

Lists
Using lists as stack and queue
List Comprehensions
A few special functions related to lists
Tuples
Sets
Dictionaries
students.py
Assignment problems
Create a calculator

CATALYST PROGRAMMERS "Be The Catalyst Of Your Own Code"

Strings

- Different methods available for Strings
- Strip the strings
- Justifying text
- Finding text
- Palindrome checking
- Number of words
- Iterating over all characters of a string

Functions

- Defining a function
- Local and global variables
- Default argument value
- Keyword arguments
- Keyword only argument
- Positional only argument
- Docstrings
- Higher-order function
- map
- Parameters and arguments
- *args and **kwargs in function definition
- HOWTO Write a function

File handling

- File opening
- Closing a file
- Reading a file

CATALYST PROGRAMMERS
"Be The Catalyst Of Your Own Code"

Using the with statement
Writing in a file
Count spaces, tabs and new lines in a file
Let us write some real code

Exceptions

NameError
TypeError
How to handle exceptions?
Raising exceptions
Using finally for cleanup

Class

Your first class
__init__ method
Unique class level variables
__repr__ method
Inheritance
Multiple Inheritance
Encapsulation in Python
Deleting an object

Getters and setters in Python
Properties
Special dunder methods in classes
Creating a new context manager
Deep down inside

Modules

Introduction
Importing modules

CATALYST PROGRAMMERS
"Be The Catalyst Of Your Own Code"

Packages and submodules
__all__ in __init__.py
Default modules
Module os
Requests Module
Command line arguments
TAB completion in your Python interpreter

Collections module

Counter
defaultdict
namedtuple

PEP8 Guidelines

Introduction
A Foolish Consistency is the Hobgoblin of Little Minds
Code lay-out
Whitespace in Expressions and Statements
Comments
Version Bookkeeping
Naming Conventions
References
Copyright

Iterators, generators and decorators

Iterators
Generators
Generator expressions
Closures
Decorators

CATALYST PROGRAMMERS "Be The Catalyst Of Your Own Code"

Virtualenv

Installation

Usage
Pipenv

Building command line applications with Click

Installation, and development tips
Using echo for printing text
Boolean flags
Standard options in the command line
Same option multiple times
Help text for the script
Super fast way to accept password with confirmation
Must have arguments

Introduction to Fast API

What is Fast API?
A “Hello world” application in Fast API
Using arguments in Fast API
Additional work

CATALYST PROGRAMMERS
“Be The Catalyst Of Your Own Code”