Introduction

 Understanding the Open source

 Installation of python in Linux/windows.  Understanding Interpreters

ipython

bpython

 Getting started with Python.  Getting to understand Help.

Exploring the objects.

 Setting up the IDE and various

IDEs(Integrated development environment).

Setting up using the PEP-8 .

Indentation.

Tabs or spaces.

Maximum line length.

Blank lines.

Source file Encoding.

creating the first python program.

understanding sha-bang.

understanding the .py extension. How to run the python programs

TYPES AND OPERATORS

Introduction to data types. Type casting in python. Various ways of printing. Boolean operators.

Playing with numbers. Playing with strings.

String quotes.

Raw strings.

 Docstring & comments.  Accepting inputs.

CONTROL STATEMENTS

 Conditional statements

 Looping statements

for

while

range

break

continue

LISTS

 What are lists?

Mutable lists.

In operator.

Traversing a list.

List operations.

Indexing.

Slicing.

converting a list to string.

converting a string to list.

Aliasing in lists.

Functions in lists.

TUPLES

What is tuples.

Indexing in tuples.

slicing in tuples.

Immutable tuples.

Packing and unpacking.

Lists and tuples.

Functions in tuples.

DICTIONARIES

What are dictionaries?

Keys and values.

In operator.

Looping in dictionaries.

Lookups in dictionaries.

Dictionaries and tuples.

Functions in dictionaries.

 Dictionaries vs sets.

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| --- | --- | --- |
|  | Introduction | **FUNCTIONS** |
|  | Boolean expressions |
|  | Logical Operators | Function basics |
|  | Using If condition | Scope rules in functions |
|  | Pass | Global scope. |
|  | Applying PEP-8 standards. | Local scope. |
|  |  | Locals. |

PYTHON COURSE CONTENT

 Understanding the return keyword.  Argument passing

Default argument list.

Keyword arguments.

 Understanding the docstrings.  List comprehensions.

 Lambda, map, filters.

 Understanding the closures.  Decorators.

MODULES

What are modules? Understanding the namespaces Various ways of importing. "reload" operation. understanding about sys.path dir () function.

understand the main and name

operation.

Installation of a module. Understanding the virtualenv.

Packaging a module.

Packages.

FILES

Fancier Output Formatting Reading and writing files Methods of File Objects

Reading

Writing

Modify

 Buffering in files.  Parsing a xml files.  Parsing a xls files.  Pickles

 Output using Pickle

 Introduction to subprocess, os

EXCEPTIONS

 What are exceptions?  Simulating errors.

 Various types of exceptions.

 Exception handling - try, except, else, finally

 trapping errors.

 raising exceptions.

 Customized exceptions.

REGULAR EXPRESSIONS

 Understanding the regular expressions.  Getting started.

 Compiling a pattern.

 Flags - ignorecase, dotall

 Working with multiple flags.

Search vs match.

Raw string notations. Special characters

Globbling characters

Anchors

character sets

Grouping

DEBUGGING

Introduction to debugging. Debugging using IDE. Various modes to get to pdb.

Script mode, Enhanced script mode.

Post mortem mode.

run mode.

Trace mode.

Playing with the trace mode.

listing

step, next

continue, break

printing variables

assigning values

Restart and return.

Where, stacks, breakpoints

repeat.

LOGGING

 nderstanding logging.  When to use logging.

 Understanding the log levels

 Understanding stream handling using

Basic

 ConfigPYTHON COURSE CONTENT

 Understanding logger.

 Understanding handlers.

 Understanding Formatters.  Understanding filters.

 Demo: Playing with the syslog handlers.  Demo: Playing with the Stream handlers.  Demo: Playing with the File handlers

CLASSES

 OOP: what is object oriented programming.

 Understanding the classes in python.

Lets create a bank account. Using the class statement

Methods in classes.

Constructor.

Magic methods. Understanding Inheritance.

Understanding Polymorphism. Understanding Encapsulation. Operator overloading.

SOCKET PROGRAMMING

Introduction. Understanding basics

routing.

Protocols - udp & tcp. Working with sockets

\* How to connect to server.

\* Connect on port.

\* sending data.

\* receiving data.

\* How to close the socket.

 Programming a socket server

\* Bind a socket.

\* Listen to incoming connections.

\* Accept connections.

\* Live server

\* Handing connections.

\* Thread class

\* Thread library

\* Thread pool

\* Task thread

\* Multiprocessing

 Demo: common chat application.  Demo: FAQ chat application.

 Demo - Port scanning software

DATABASE CONNECTIVITY

 Introduction

 Working with mysql databases.

How to install mysql-server

How to know what modules to install

Creating a database

Creation of the user and giving grants

Granting access to the users

Connecting mysql and python

 Python and Mysql:

Creating and populating a table

Retrieving data

Dictionary cursors

Column headers

Integration with various databases. ( Mariadb, oracle)

Introduction to ORM and sqlalchemy

CGI PROGRAMMING

Introduction

Getting started with CGI Configuring apache Configuring CGI

MULTITHREADING

DATA ANALYSIS BASICS Pandas

Nampy

Matplotlib

INTRODUCTION TO PYTHON FRAMEWORKS

 DJANGO  FLASK