PYTHON
PROGRAMMING

BASIC – ADVANCE

Python Basics

1 INSTALLATIONS & LAB SETUP

- Installing python 3.x
- Environment setup
- Getting started with IDLE
- Using Jupyter notebook

2 INTRODUCTION TO PYTHON

- Python key features
- Python syntax
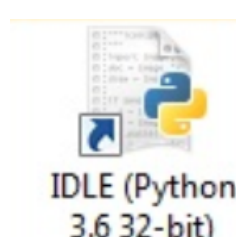- Getting started with python programming

3 VARIABLES, OPERATORS AND BASIC INPUT/OUTPUT

- Use of variables in programming
- Arithmetic operators in python
- Relational operators in python
- *input()* and *print()* functions
- Type casting and *eval()* function

4 LEARNING CHECKPOINT 1

- Python syntax quiz
- Commonly found errors in python
- Python programming on mathematical formulas

IDLE (Python 3.6 32-bit)

jupyter

5 NUMBERS AND STRINGS

- Python primitive types
- *int*, *float* and *complex*
- Random numbers
- String attributes
- String formatting
- Indexing and slicing

6 CONTROL FLOW STATEMENTS

- *if-elif-else* conditions
- *for* loop
- *while* loop
- *break*, *continue* and *for-else*

7 LIST AND TUPLES

- Mutable and immutable sequences
- List attributes
- Tuple attributes
- List comprehension

8 DICTIONARY AND SETS

- Information mapping
- Dictionary attributes
- Set attributes
- Dictionary comprehension

9 LEARNING CHECKPOINT 3

- Control flow quiz
- Python program template
- Python data structures

Advance Python

10 FUNCTIONS AND MODULES

- User defined functions
- *lambda* functions
- *map()* and *filter()* functions
- Recursive functions
- Modules and packages
- *dir()* and *help()* functions

11 FILE HANDLING

- File Input/Output
- Working with text files
- Working with CSV files
- Working with directories

12 EXCEPTION HANDLING

- Exception handling
- *try*, *except*, *else* and *finally*
- *raise* and *assert*
- Exception hierarchy

13 OBJECT-ORIENTED PYTHON

- Classes and objects
- Making of a class
- Static and instance variables
- Understanding self and __init__()
- Inheritance and Overriding
- Overloading functions
- Operator overloading
- Encapsulation: Hiding attributes
- Introduction to Threads
- Creating and starting multi-threads

14   REGULAR EXPRESSIONS

- Pattern matching
- Special characters in patterns
- re functions
- re flags

15   DATABASE CONNECTION

- Working with sqlite3 database
- Connection and cursor objects
- CRUD operations
- Commit and rollback operations

16   EMAIL SENDING AUTOMATION

- Working with SMTP library
- sendmail() function
- Email sending script with CSV
- MIME objects as email attachments

17   PROJECT WORK

- Banking System Application by using Dictionary
- Student Database management by using CSV files.
- SQL Database project

END-TERM TEST

LEARN
Python
Online

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