



QUICKSTEP COMPUTER CENTER

National Accreditation Board of Education Training.
(NABET)- Quality council of India) An ISO 9001:2008

PYTHON

Python syllabus

- ❖ What is Python?
- ❖ The Birth of Python
- ❖ History of Python
- ❖ Features of Python
- ❖ Versions of Python

✚ The Python Environment:

- ❖ Installation of Python
- ❖ Python Documentation
 - ❖ Getting Help
- ❖ Python Editors and Ides
 - ❖ Basic Syntax
- ❖ Running a Python Script
- ❖ Python Scripts on UNIX/Windows

✚ Getting Started:

- ❖ Keywords
- ❖ Data Types
- ❖ Variables
- ❖ Naming Conventions
 - ❖ Print()
 - ❖ Type()
 - ❖ Id() Functions
 - ❖ Input()
- ❖ Raw_input() functions
- ❖ Conversion functions

- ❖ Del Keyword



String Handling:

- ❖ What is String?
- ❖ Single-quoted string literals
- ❖ Triple-quoted string literals
 - ❖ String Indexing
 - ❖ String Slicing
- ❖ Working with String Functions
- ❖ Working with String Methods

Operators:

- ❖ Arithmetic Operators
- ❖ Relational Operators
- ❖ Logical Operators
- ❖ Assignment Operators
- ❖ Short Hand Assignment Operators
 - ❖ Bitwise Operators
- ❖ Membership Operators
- ❖ Identity Operators

❖ Flow Control:

- ❖ About Flow Control
- ❖ Conditional Statements (Simple if, if...else, if...elif...)
 - ❖ Looping Statements (while loop, while ... else, for loop, infinite loop, nested loops)
 - ❖ Break
 - ❖ Continue
 - ❖ Pass



Sequences:

- ❖ About Sequences
 - ❖ Lists
 - ❖ Tuples
 - ❖ Indexing and Slicing
- ❖ Iterating through a sequence
 - ❖ Functions for all sequences
- ❖ Operators and keywords for sequences
 - ❖ The xrange() function
 - ❖ Nested sequences
 - ❖ List comprehensions

✚ **Dictionaries and Sets:**

- ❖ About Dictionaries
- ❖ When to use dictionaries
- ❖ Creating Dictionaries
- ❖ Getting dictionary values
- ❖ Iterating through a dictionary
- ❖ Reading file data into a dictionary
 - ❖ counting with dictionaries
 - ❖ about sets
 - ❖ Creating sets
 - ❖ working with sets
- ❖ Working with Directories

✚ **Functions:**

- ❖ Defining a function
- ❖ Calling a function
- ❖ Function Parameters
 - ❖ Returning Values
 - ❖ Variables scope
 - ❖ Call by value
 - ❖ Call by reference

- ❖ Passing collections to a function
- ❖ Passing functions to function
 - ❖ Lambda function

Modules:

- ❖ What is a module?
- ❖ Creating user defined module
 - ❖ Setting path
 - ❖ The import statement
 - ❖ Module search path
 - ❖ From ... Import
 - ❖ Module Aliases
 - ❖ Dir function
 - ❖ Working with Standard modules
- ❖ (Math, Random, Date and time, Os and sys, String,....)

Errors and Exception Handling:

- ❖ Syntax Errors
- ❖ What is Exception?
- ❖ Need of Exception handling
 - ❖ Predefined Exceptions
- ❖ Predefined Exceptions Hierarchy
 - ❖ Except
 - ❖ try
 - ❖ finally clause
- ❖ Handling Multiple Exceptions
 - ❖ User defined Exceptions
 - ❖ Raise
 - ❖ assert statements

✚ **File Handling:**

- ❖ Opening a file
- ❖ Closing a file
- ❖ Writing data to files
- ❖ Reading a data from files
 - ❖ Tell()
 - ❖ Seek() functions

✚ **OOPs concepts:**

- ❖ About OO programming
 - ❖ Defining Classes
 - ❖ Creating object
- ❖ Class methods and data
 - ❖ Static methods
 - ❖ Private methods
 - ❖ Constructors
 - ❖ Destructors
 - ❖ Inheritance
- ❖ Types of inheritances
- ❖ Polymorphism (over loading & over riding)
 - ❖ Data hiding

✚ **Regular Expressions:**

- ❖ What is regular expression?
 - ❖ Wild card characters
- ❖ Forming regular expressions
 - ❖ Character classes
 - ❖ Quantifiers
 - ❖ Greedy matches
 - ❖ Grouping
 - ❖ Match
 - ❖ Search functions
 - ❖ matching v/s searching
- ❖ Sub function splitting a string

- ❖ Replacing text
 - ❖ Flags

+ Multi Threading:

- ❖ Defining a thread
- ❖ starting a thread
- ❖ Threading module
- ❖ Threads synchronization
- ❖ multithreaded priority queue

+ Database Access:

- ❖ Basics of database
 - ❖ Connections
 - ❖ Executing queries
- ❖ Transaction management

+ Advanced concepts in python:

- ❖ Iterators
- ❖ Generators
 - ❖ closure
 - ❖ decorators

+ Advanced Modules:

- ❖ Math and sciences (Numpy, scipy, matplotlib)
 - ❖ Data analysis (pandas)
- ❖ Network Programming (Socket module, Twisted module, Client and server)
 - ❖ Testing (Unit test)
- ❖ Web scraping (Beautiful soup, Python web, Mechanize)

- ❖ GUI programming (tkinter programming, pyGtk, PyQt)
- ❖ Gaming (Pygame-2d animation, piglet-3d animation)
 - ❖ Excel (Openpyxl, Xlrd, and Xlwt)
 - ❖ Images (PIL, Video capture)

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