



CORE PYTHON

Core Python

- Why Python
- Features of Python
- Install & Run Python Code
- Tokens in Python
 - Basics(Variables, Constants, Literals)
 - Data Types in Python(Primary, Collection)
 - Type Conversions(Implicit & Explicit)
 - Operators(Unary, Binary & Ternary)
- Statements
 - I/O Statements
 - Conditional Statements
 - Looping Statements
- Core Functions
 - Parts of Functions
 - Arbitrary Arguments
 - Multi value return
 - Pass by value
 - Pass by reference
 - Packing & Unpacking
 - Scopes(Local, Global & Block Levels)



- File Handling
 - Absolute and relative paths
 - File Modes(r,w,a,etc)
 - Open & Close File
 - with as file pointer
 - Readline() function
 - Read word
 - Line by Line File Reading
 - Reading File by Char N
- Error/Exception Handling
 - Types of Errors
 - Try-Catch Block
 - Predefine Exceptions
- Module & Package Manager
 - PIP2 & PIP3
 - Package Installations
 - Package Usage
- Python os: Package
 - File delete
 - os.path.exists
 - R/W Binary, CSV Files
 - JSon Conversions(JSon2Object, JSon2CSV)



Core OOP

- Methodologies in Software's
- Why OOP
- OOP Terminology
- Classes & Objects
- Inheritance & Types
- Function Overloading

ADVANCE PYTHON

Advance Python

- PEP(Python Enhancement Programs)
- Python Debugger & IDE
- Logical Based Exercises(Core Python, Core OOP)
 - Operator Precedence
 - Reliability in Statements & Types
 - Mathematical & Predefine Functions
 - Collections Type(Lists, Strings, Dictionary, Sets)
 - File Handling
- Web Scraping
 - Python versatility: from data analysis to web crawling
 - Web Scrapers vs. Crawlers
 - Interact with Website
 - Selenium & Selectors
 - BeautifulSoup for Wikipedia
- Advance Functions
 - When Recursion required
 - How Recursion Works
 - Lambda Functions(Map, Reduce & Filter)
- Regular Expression
 - Why Regular Expression
 - Find Alpha & Number
 - Starts and End With
 - Match, Search & Find
- Advance OOP
 - Classes & Objects in Real World
 - Inheritance & Diamond Problem
 - Constructor, Destructor & Types
 - Static
 - Function
 - Class
 - Single Inheritance with Overloading & Overriding

A blue cloud-shaped logo with the text "Nube Era" in white. Above the text is a stylized white icon of a person with a lightbulb above their head, symbolizing an idea or knowledge. The logo is semi-transparent and overlaps with the list items.

Nube Era

- Memory Management Techniques
 - Memory Leaks
 - Memory Allocation
 - Reference Counting
 - Garbage Collection
 - Garbage Collection
 - Automatic Garbage Collection
 - Manual Garbage Collection
- Multi threading
 - Multi Processing vs Multi Threading
 - What is GIL & Why its Important
 - Job/Task/Thread/Process
 - Thread Control Block (TCB)
 - Synchronization
 - Lock(acquire & release)
 - co-routines with async & wait
- Design Patterns
 - Creational Design Pattern
 - Structured Design Pattern
 - Behavioral Design Pattern
- Advance Features
 - Iterators
 - Decorators
 - Generators
 - Descriptors
 - Meta Programming

