

Python (Core + Advanced)

Session 1: Beginning with Python

✓ Installing Python, Introduction to Python	✓ Data Types, Variables, Operators
✓ Basic Syntax of Python Programming	✓ Input/output, Your First Python Program

Session 2: Control Statements and Looping

✓ Flow of Control (Modules, Branching)	✓ Nested Loops in Python, Control Structure
✓ If, If-else, Nested of if-else	✓ For and While Loop
✓ Introduction to Looping in Python	✓ Uses of Break and Continue

Session 3: Working with Strings

✓ Pass, Strings and Tuples, Accessing Strings	✓ Basic Operations, Formatting Strings
✓ Accessing Multiple Values at Once	✓ String slices

Session 4: Working with Dictionaries

✓ Introduction to Dictionaries	✓ Defining and Modifying Dictionaries
✓ Introducing Dictionaries	✓ Deleting Items from Dictionaries

Session 5: Working with Lists

✓ Working with Lists, Introducing Lists	✓ Adding Elements to Lists, Searching Lists
✓ Defining Lists, Declare, assign and retrieve values from the	✓ Deleting List Elements, Using List Operators
✓ Accessing Lists, Operation in Lists	✓ Mapping List, Joining Lists and Splitting Strings Historical Note on String Methods

Session 6: Working with Function

✓ Function and Methods	✓ Anonymous Func., Global and local variables
✓ Defining a function, Calling a function	✓ Using Optional and Named Arguments
✓ Types of function, Function Arguments	✓ Using type, str, dir, and Other Built-In Functions

Session 7: Working with Tuples

✓ Introducing Tuples, Accessing Tuples	✓ Operations with Tuples
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Session 8: Basics of OOPS

✓ Object Oriented Python, OOPs Concept	✓ Object References, Class and Object
✓ Object, Indenting Code, Native Data Types	✓ Attributes, Inheritance, Overloading
✓ Declaring Variables, Referencing Variables	✓ Overriding, Data Hiding, Regular Expression

Session 9: Exception Handling

✓ Operations Exception	✓ Try finally clause
✓ Exception Handling, Except clause	✓ User Defined Exceptions

Session 10: Introduction to Tkinter	
✓ Working with Python GUI	✓ Introduction to Tkinter Widgets
✓ Working with Tkinter Events	✓ Designing Tkinter Forms
✓ Tkinter Widgets Attributes	✓ Tkinter Menu, Combobox etc.
Session 11: Working with Databases	
✓ Introduction to MySQL, SQL Introduction	✓ Working with pymysql
✓ Working with CRUD Operation in Python	✓ Project Development using Tkinter and MySQL
✓ Working with SQL, Basic SQL Commands	✓ Working with SQL Functions
✓ Working with SQL Joining with Python	✓ Working with Keys and Constraints
Session 12: Working with Files I/O	
✓ Introduction to File, File Types	✓ File Manipulation using seek() and tell()
✓ Opening and Closing Files, File Opening Modes	✓ File and Directory Related Methods
Session 13: Working with Network Programming	
✓ Introduction to Sockets, Client vs Server	✓ Writing Client and Server code in Python
✓ Server, Client and General Socket Methods	✓ Protocols used in Client/Server Architecture
Session 14: Working with Emails	
✓ Introduction to smtplib, Email Protocols	✓ Sending mails using SMTP Method
✓ SMTP Methods and its parameters	✓ Sending Attachments as an Email
Session 15: Working with Multithreading	
✓ Introduction to Threads and Process	✓ Create Thread using Threading Module
✓ Different types of threads, Thread Modules	✓ Thread Synchronization
✓ Starting a New Thread, The Thread Modules	✓ Multithreaded Priority Queue
Session 16: Introduction to Python GUI (Graphical User Interface)	
✓ Introduction to PyQt5, PYQT5 Programming	✓ PYQT5 Widgets
✓ PyQt5 More Widgets with Programming	✓ PYQT5 with CRUD Operation with Database
Session 17: Introduction to XML Processing	
✓ Introduction to XML, DTD with Examples	✓ Working with SAX Parser and its methods
✓ XML Parser Architectures and APIs (SAX & DOM)	✓ Parsing XML document using DOM APIs
Session 18: The Django Web Application Framework	
✓ Installing Django, Setting Up Django	✓ Working with Web Application Development

✓ Django API, Django Admin App, Django Views	✓ CRUD Operations using Django
✓ Django Templates	✓ Django Class View, Model Mixin, Inbuilt Classes for CRUD Operation
✓ Working with Django with BootStrap4.0	✓ Working with Django static files and jquery files
✓ Working with Django Forms	✓ Working with Django Validations with Forms
Session 19 to 20: JSON and REST Architecture and AJAX	
✓ Introduction to JSON, Web services in Python	✓ Extracting data using JSON and REST API
✓ Introduction to AJAX, AJAX Architecture	✓ How AJAX Works, AJAX JS Code, Asynchronous vs synchronous
✓ Fetching data behind the scene using AJAX	✓ Class Examples based on AJAX