

Advanced Python Programming

Session 1: Python with Object Oriented Programming

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

Session 2: Working with Database Access

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| ✓ Working with SQL, Basic SQL Commands | ✓ Working with SQL Functions |
| ✓ INSERT, UPDATE, DELETE, SELECT Operation | ✓ Working with SQL Joining with Python |
| ✓ CRUD Operation with Python Code | ✓ Working with Keys and Constraints |

Session 3: Working with Files I/O

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| ✓ Introduction to File, File Types | ✓ File Manipulation using seek() and tell() |
| ✓ Opening and Closing Files, File Opening Modes | ✓ File and Directory Related Methods |

Session 4: Working with Network Programming

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| ✓ 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 5: Working with Emails

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| ✓ Introduction to smtplib, Email Protocols | ✓ Sending mails using SMTP Method |
| ✓ SMTP Methods and its parameters | ✓ Sending Attachments as an Email |

Session 6: Working with Multithreading

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| ✓ 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 7: Introduction to Python GUI (Graphical User Interface)

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| ✓ Introduction to Tkinter, Tkinter Programming | ✓ Tkinter Widgets (Button, Canvas, Checkbutton) |
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Session 8: More on Python GUI

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| ✓ Tkinter Widgets (Entry, Frame, Label, Listbox) | ✓ PanedWindow, LabelFrame, tkMessageBox |
| ✓ Menubutton, Menu, Message, Radiobutton | ✓ Standard Attributes in Tkinter |
| ✓ Scale, Scrollbar, Text, Toplevel, Spinbox | ✓ Geometry Management in Tkinter |

Session 9: Introduction to XML Processing

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| ✓ 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 10: The Django Web Application Framework

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| ✓ Installing Django, Setting Up Django | ✓ Working with Web Application Development |
| ✓ Django API, Django Admin App, Django Views | ✓ CRUD Operations using Django |
| ✓ Django Templates | ✓ Project Development |

Session 11: JSON and REST Architecture

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| ✓ Introduction to JSON, Web services in Python | ✓ Extracting data using JSON and REST API |
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