

PYTHON

Introduction to Python

- What is python
- Features of python
- Importance of python
- Role of Compiler
- Role of Interpreter
- Diff Between Compiler and Interpreter

Python Basics

- Installation of Python
- Python Path Settings
- Python IDE IDLE
- Python with Eclipse
- Data Type, Variables, Keywords, Constants
- Python Indentation
- Comments
- Input / Output operations
- Operators and Programs
- Type Conversions

Python Data Structures

- Numbers
- String and its methods
- String Indexing/Slicing/Formatting
- Tuple
- List and its methods
- Accessing list Elements
- List Operations
- Working with Dictionary
- Nested Dictionary
- Dictionary Methods

Decision Making and Loops

- The If / elif / else statement
- For loop
- Iterating multiple lists
- Range function in for loop
- While loop
- Nested Loops
- Break and continue statement
- Pass statement

FUNCTIONS

- Defining Functions
- Benefit of Functions
- Calling a function
- Function Arguments
- Built In Functions
- Working with Return Values
- Variable sized arguments
- Default Arguments

Classes and Objects

- Understanding Classes and Objects
- Constructors
- Defining Member Functions
- Inheritance
- Method Overriding
- Data hiding
- Special class methods

Exception Handling

- What are exceptions
- Built In Exceptions
- Raising/Catching an exception
- Finally and except block
- Inspect.stack() / Print_stack()

GUI Development

- Introduction to GUI
- What is a Tkinter
- Widget Basics
- Widget Events
- Widget Styling and Lists
- Layout Managers
- Label, Button, Text, PhotoImage, Combobox, List, OptionMenu, ProgressBar, Frame, Menu, Accelerators, Dialog Boxes, ColorChooser, Scrollbars, Treeview etc.
- Canvas Drawing : Rectangle, line, arc, oval
- Tags and Markers
- Event Handling
- Mouse Events
- Keyboard Events
- Virtual Events

Module and Packages

- What is a module
- Importing Module
- Built In Modules/User Defined Modules

Python Database Connectivity

- Installing Sqlite
- Establish connection with database
- Reading/Writing the data
- Execute/executeMany()
- Creating Cursors
- CRUD operations
- Database operations with TkInter
- Microsoft SqlServer Connection

File Handling

- Read/Write Operations
- List Directory Contents
- File Positions
- File Modes

Command Line Arguments

PROJECT WORK

WEEKLY TESTS

**INTERVIEW/OBJECTIVE
QUESTIONS**

REGULAR ASSIGNMENTS

ADVANCED PYTHON

CSV and Email

- Send Email with Gmail
- Html and plain text emails
- Send formatted emails
- User Defined Modules
- Using External template files with context data
- CSV Files with Python-Read write append
- Functions to Dynamically add data to CSV
- EDIT CSV with Python
- Command Line arguments
- Twitter API with Python
- Save Emails Locally
- Fetch and Convert Emails
- Login with IMAP
- SMS messages with Python
- Web Management using Javascript Driven Html
- Working with Inetdata
- JSON
- HTML Parsing
- XML Parsing

Networking

- Introducing the Socket Programming
- Getting Remote IP Address
- Handling Socket Errors
- Create a Client and Server Socket
- Connecting client server
- Client-server chatting program

Connecting to Network Services

- Getting the Current time with NTP
- Getting websites with HTTP
- Downloading Files with FTP

File Handling

- File Basics
- Reading Entire Files
- Additional File Methods
- Working with Directories
- Pickle module
- Navigating a file

- Writing data to the files
- Reading/Writing Objects

Regular Expression

- Introduction
- Match/Search Function
- Grouping
- Matching at Beginning or End
- Match objects
- Flags

Complex Data Structures

- What are Comprehensions
- List Comprehensions
- Dictionary Comprehensions
- Maps
- Decorators
- Lambda/Filter/Generators
- Working with Date/Time

DJANGO

- What is Django
- MVC Pattern
- ORM
- Installing Django
- Django Views
- HttpRequest & HttpResponse

Views

- Your First View
- Mapping urls to Views
- How django process a request..?
- Urlpatterns
- Regular expressions
- 404 Errors

Configure URL Pattern

- About URL pattern
- How Django processes a request..?
- Passing positional arguments to a view
- Passing keyword arguments to a view
- Simple example of a named group

Django Models

- Define models
- Setting up database access
- Creating django apps
- Defining model fields
- Creating a model
- How to create tables for models in Database
- Adding Model String Representations
- Inserting & updating Data
- Filtering Data
- Ordering Data
- Slicing Data
- Deleting Objects

Templates in Django

- Define Template
- Creating Template objects
- Templates tags
- Templates filter
- Rendering of templates

- RequestContext Processors
- Context Processors

Django Forms

- Html forms
- Forms in Django
- Searching Query
- GET & POST methods
- Form fields in django
- Building a form in Django
- Placing form instance into the templates context
- Simple/Custom Validation

Sessions and Cookies in Django

- Introduction about Sessions & cookies
- How to use sessions..?
- Using Django Authentication system
- Authentication in web requests
- Authentication Decorators
- Login & Logout
- Building login & logout Application

Class Based Views

- View
- TemplateView
- CreateView
- ListView
- DetailView
- FormView
- UpdateView
- DeleteView

Pagination

- Function based pagination
- class based pagination