

# Certificate Program in **FULL STACK PYTHON**

Class Room | Online | Corporate Training

Duration : 6 Months

-  **Core Python**
-  **Advanced Python**
-  **Web Development**
-  **Django Frame Work**
-  **Python for Data Science**





**5000+ Trainees | 20+ Countries**  
**200+ Batches | 500+ Success Stories**

# **What is PYTHON ?**

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Python is a general-purpose language. It has wide range of applications from Web development (like: Django and Bottle), scientific and mathematical computing (Orange, SymPy, NumPy) to desktop graphical user Interfaces (Pygame, Panda3D).

The syntax of the language is clean and length of the code is relatively short. It's fun to work in Python because it allows you to think about the problem rather than focusing on the syntax.

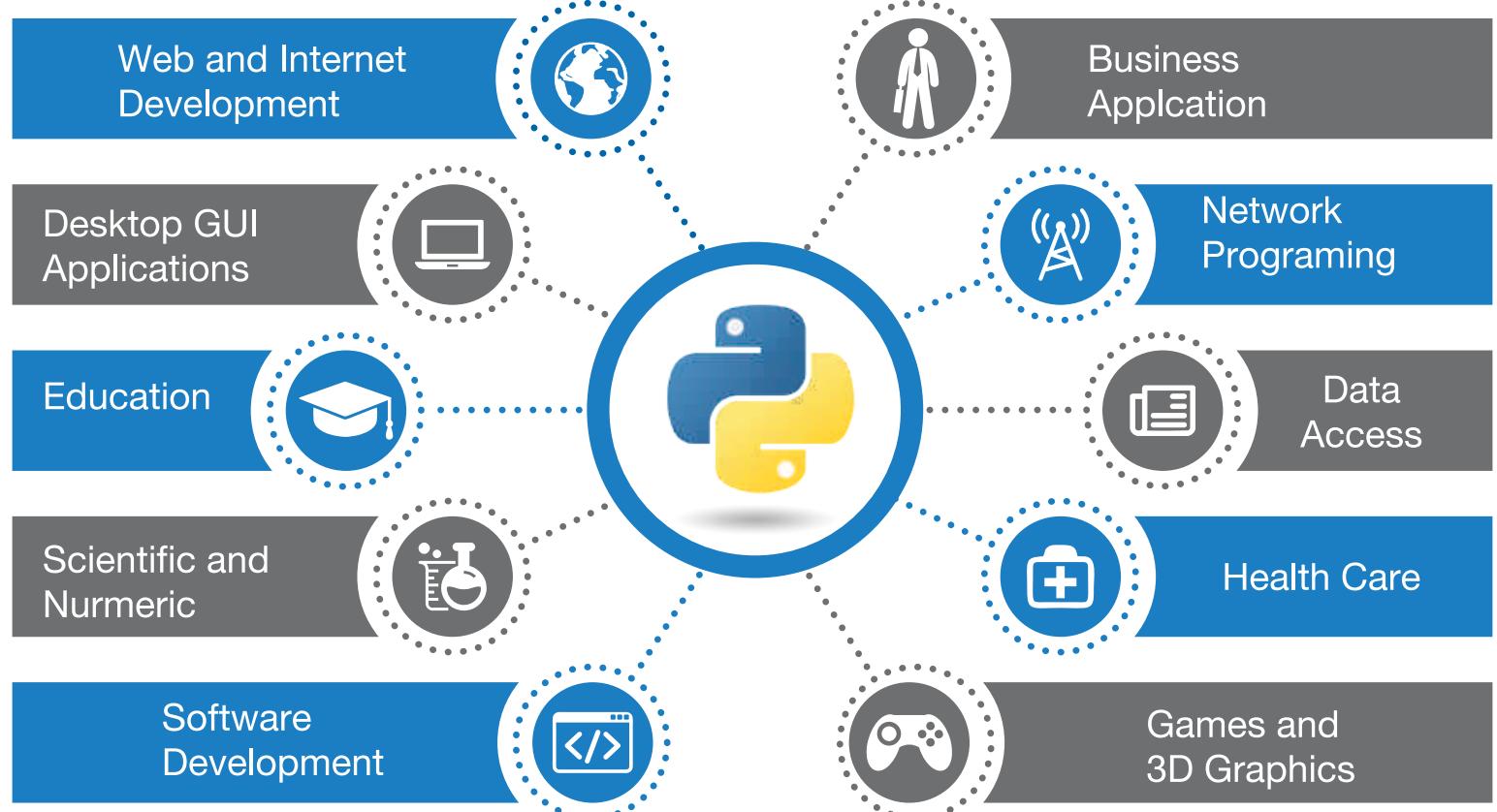
Python is used in various applications like designing scalable web apps Ex: Instagram ,mozilla.It is also used in Data Science for Machine learning, Data Mining , text mining etc. Demand for Python trained Professionals is very high in the market .

## **PYTHON MODULES**

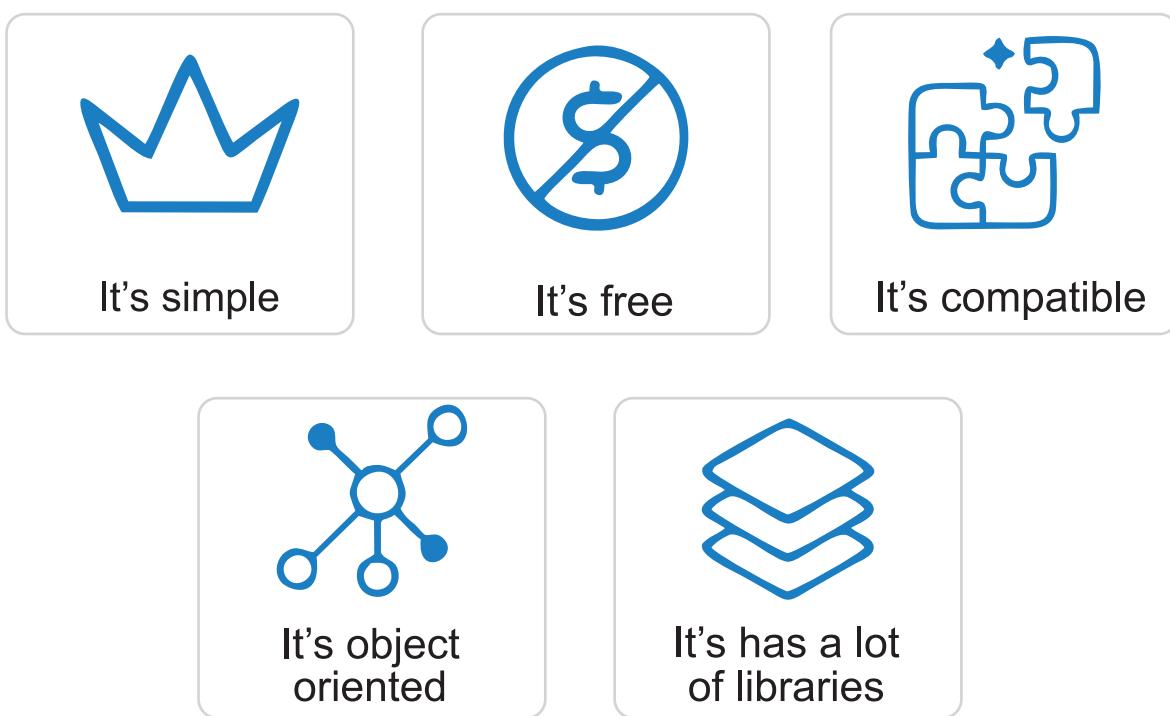
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- **Core Python**
- **Advanced Python**
- **Web Development**
- **Django Frame Work**
- **Python for Data Science**
- **Project**

# PYTHON APPLICATIONS



## Reasons why developers love python



# KEY HIGHLIGHTS



Training by Real Time Experts



Material, Case Studies & Assignments



One-On-One with Industry Mentors



Dedicated Student Manager



100% Assured Placement Assistance



Hands on Training



Doubt Clarification Sessions



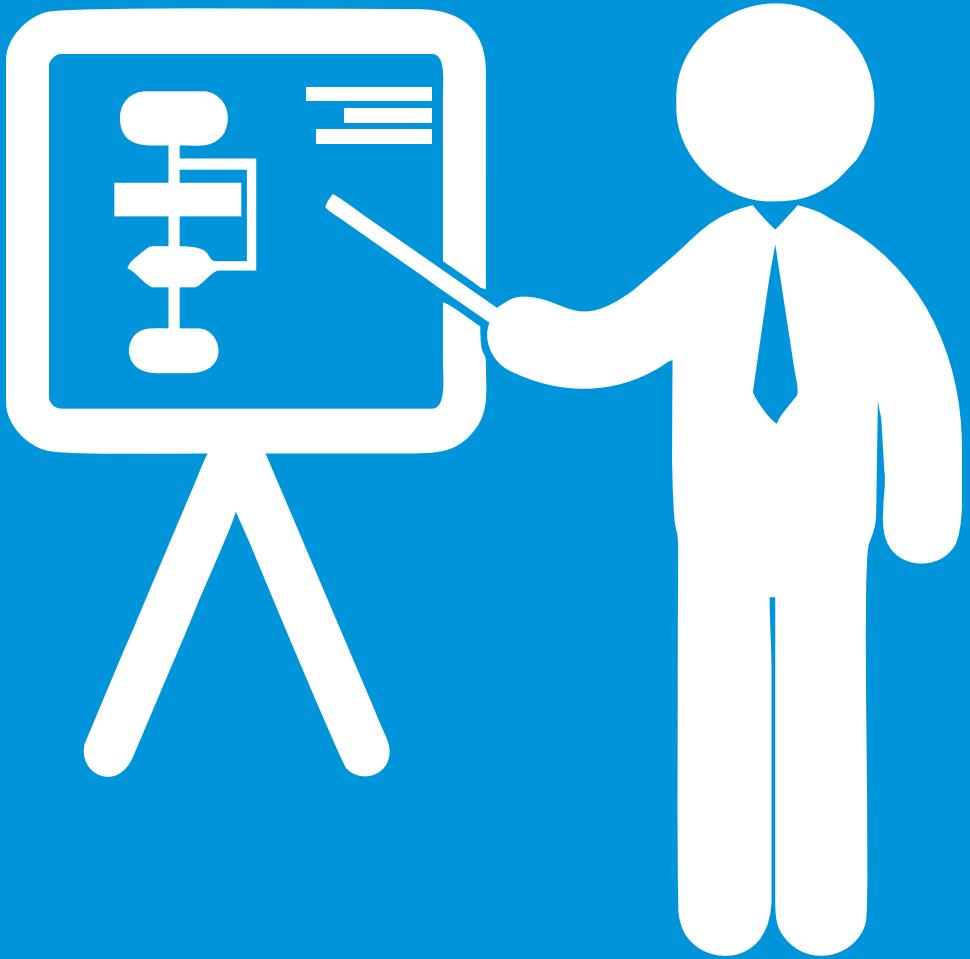
Limited Strength



Resume & Interview Prep Guidance



Course is curated by subject matter experts in PYTHON



# COURSE STRUCTURE

# CORE PYTHON

## 1 : Python Basics

- What is Python
- Why Python?
- History of python
- Applications of Python
- Features of Python
- Advantages of Python
- Versions of Python
- Installation of Python
- Flavors of Python
- Comparision b/w various programming languages C, Java and Python

## 2 : Python Operations

- Python Modes of Execution
- Interactive mode of Execution
- Batch mode of Execution
- Python Editors and IDEs
- Python Data Types
- Python Constants
- Python Variables
- Comments in python
- Output Print(),function
- Input() Function :Accepting input
- Type Conversion
- Type(),Id() Functions
- Comments in Python
- Escape Sequences in Python
- Strings in Python
- String indices and slicing

## 3: Operators in python

- Arithmetic Operators
- Comparision Operators
- Logical Operators
- Assignment Operators
- Short Hand Assignment Operators
- Bitwise Operators
- Membership Operators
- Identity Operators

## 4: Python IDE's

- Pycharm IDE Installation
- Working with Pycharm
- Pycharm components
- Installing Anaconda
- What is Conda?
- Anaconda Prompt
- Anaconda Navigator
- Jupyter Notebook
- Jupyter Features
- Spyder IDE
- Spyder Features
- Conda and PIP

## 5. Flow Control Statements

- Block/clause
- Indentation in Python
- Conditional Statements
  - if stmt
  - if...else statement
  - if...elif...statement

## **6. Looping Statements**

- - while loop,
- - while ... else,
- - for loop
- - Range() in for loop
- - Nested for loop
- - Break statement
- - Continue statement
- - Pass statement

## **7. Strings in Python**

- Creating Strings
- String indexing
- String slicing
- String Concatenation
- String Comparision
- String splitting and joining
- Finding Sub Strings
- String Case Change
- Split strings
- String methods

## **8. Collections in Python**

- Introduction
- Lists
- Tuples
- Sets
- Dictionaries
- Operations on collections
- Functions for collections
- Methods of collection
- Nested collections
- Differences b/w list tuple and set and Dictionary

## **9. Python Lists**

- List properties
- List Creation
- List indexing and slicing
- List Operations
- Nested Lists
- List modification
- List insertion and deletion
- List Methods

## **10. Python Tuples**

- Tuple properties
- Tuple Creation
- Tuple indexing and slicing
- Tuple Operations
- Nested Tuples
- Tuple Methods
- Differences b/w List and Tuple

## **11. Python Sets**

- Set properties
- Set Creation
- Set Operations
- Set Mathematical Operations
- Set Methods
- Insertion and Deletion operation

## **12. Python Dictionary**

- Dictionary properties
- Dictionary Creation
- Dictionary Operations
- Dictionary Methods
- Insertion and Deletion of elements
- Differences b/w list tuple and set and Dictionary

## 13. Functions in Python

- Defining a function
- Calling a function
- Properties of Function
- Examples of Functions
- Categories of Functions
- Argument types
  - default arguments
  - non-default arguments
  - keyword arguments
  - non keyword arguments
- Variable Length Arguments
- Variables scope
- Call by value and Call by Reference
- Passing collections to function
- Local and Global variables
- Recursive Function
- Boolean Function
- Passing functions to function
- Anonymous or Lamda function
- Filter() and map() functions

## 14. Modules in Python

- What is a module?
- Different types of module
- Creating user defined module
- Setting path
- The import statement
- Normal Import
- From ... Import
- Module Aliases
- Dir function
- Working with Standard modules -Math, Random, Date time and os modules,

## 15. Packages

- Introduction to packages
- Defining packages
- Importing from packages
  - init--.py file
- Defining sub packages
- Importing from sub packages

## 16. Errors & Exception Handling

- Types of errors
- Compile-Time Errors
- Run-Time Errors
- What is Exception?
- Need of Exception handling
- Predefined Exceptions
- Try, Except, finally blocks
- Nested blocks
- Handling Multiple Exceptions
- User defined Exceptions
- Raise statement

## 17. File Handling

- Introduction
- Types of Files in Python
- Opening a file
- Closing a file
- Writing data to files
- Tell( ) and seek( ) methods
- Reading a data from files
- Appending data to files
- With open stmt
- Various functions

## **18. OOPs Concepts**

- OOPS Features
- Encapsulation
- Abstraction
- Class
- Object
- Static and non static variables
- Defining methods
- Diff b/w functions & methods
- Constructors
- Parameterized Constructors
- Built –in attributes
- Object Reference count
- Destructor
- Garbage Collection
- Inheritance
- Types of Inheritances
- Polymorphism
- Over riding
- Super() statement

## **19. Regular Expressions**

- What is regular expression? Special characters
- Forming regular expression
- Compiling regular expressions
- Grouping
- Match() function
- Search() function
- Matching vs searching
- Splitting a string
- Replacing text
- valiodations

## **20. Database Access**

- Introduction
- Installing Oracle database
- Creating database users,
- Installing Oracle Python modules
- Establishing connection with oracle
- Closing database connections
- Cursor object
- Executing SQL queries
- Retrieving data from Database.
- Using bind variables executing
- SQL queries
- Transaction Management
- Handling errors

## **21. Python Date and Time**

- How to Use Date & DateTime Class
- Time and date Objects
- Calendar in Python
- The Time Module
- Python Calendar Module

## **22. Operating System Module**

- Introduction
- .getcwd
- .listdir
- .chdir
- .mkdir
- .rename file/dir
- .remove file/dir
- Os help
- Os operations

## **23. Advanced Concepts**

- Python Iterator
- Python Generator
- Python closure
- Python Decorators
- Web Scraping
- PIP
- Working with CSV files
- Working with XML files
- Working with JSON files
- Debugging

## **24. GUI Programming**

- Introduction
- Components and events
- Root window
- Fonts and colors
- Buttons ,checkbox
- Label widget
- Message widget
- Text widget
- image

## **25. Data analytics**

- Introduction
- pandas module
- Numpy module
- Matplotlib module
- Working Examples

## **26. Excel workbook**

- Installing and working with Xlsx writer
- Creating Excel Work book
- Inserting into excel sheet
- Insetting data into multiple excel sheets
- Creating headers
- Installing and working with xlrd module
- Reading a specific cell or row or column
- Reading specific rows and columns

# WEB DEVELOPMENT

## HTML

- Introduction to WEB
- HTML Basic Tags
- HTML Formatting Tags
- HTML Lists
- HTML Tables
- HTML Images
- HTML Anchors
- HTML Forms
- HTML Input Elements
- HTML Form Attributes
- HTML Frames
- HTML GET/POST
- HTML5 Drag/Drop
- HTML Canvas
- HTML Multimedia

## CSS

- CSS Basics
- CSS Introduction
- CSS Syntaxes
- CSS Styling,
- Styling Backgrounds
- Styling Fonts,
- Styling Links,
- Styling Lists
- Styling Tables
- CSS Borders
- CSS Selectors
- CSS Fonts
- CSS Text Effects
- CSS Backgrounds
- CSS keyframes Rule
- CSS Multiple Columns
- CSS 2D Transforms
- CSS 3D Transforms
- CSS Transitions
- CSS Animations
- CSS User Interface

## Bootstrap

- Bootstrap Introduction
- Bootstrap Images
- Bootstrap Tables
- Bootstrap Forms
- Bootstrap Dropdowns
- Bootstrap Buttons
- Bootstrap Button Groups
- Bootstrap Helper Classes
- Bootstrap Panels
- Bootstrap Alerts
- Bootstrap Panels
- Bootstrap Plugins Overview

## SQL:

- SQL Introduction
- Installing a Database
- Creating database
- Creating Tables
- insertions
- deletions
- updations
- Groupings and Aggregations
- Eliminating Duplicates
- Filtering
- Ordering
- Merging tables
- Horizontal Merging
- Vertical Merging
- Types of Joins
- Various Built-in Functions
- working with queries
- Sub-queries

## JAVASCRIPT

- What is Script? Types of Scripts?
- Introduction to JavaScript
- Comments and Types of Comments
- Popup Boxes
- Variables & Operators
- JavaScript Functions and Events
- Conditional Statements
- Looping Control Statements
- Types of Errors
- Exception Handling
- Java Script Objects
- Browser Objects
- Validations in JS

# DJANGO

## I) INTRODUCTION

- What is Django?
- Why Django? Key Advantages
- History of Django
- Features of Django
- Characteristics of Django
- Companies Using Django
- Difference b/w MVC and MVT
- Models Views and Templates

## II) WEB FRAMEWORKS

- What is a Web Framework?
- What is a server?
- HTTP Requests and HTTP Responses
- What is a web framework ?
- What is a web application?
- Steps in Developing web application.

## III) DJANGO INSTALLATION

- Django Architecture
- Django Installation
- Virtual Environment
- Working with Pycharm
- Working with ATOM
- Developing First Django Application

## IV) DJANGO PROJECT ARCHITECTURE

- Exploring manage.py,
- Exploring urls.py
- Exploring settings.py,
- Exploring admin.py,
- Exploring models.py,
- Exploring views.py,
- Application creations and Examples

## V) DJANGO APPLICATION CREATION

- Steps in Application creation
- Working with views
- Working with HTML and CSS
- Working with Bootstrap
- Django Application creation in Atom
- Django Application creation in Pycharm
- project with multiple Applications
- Reusing a Application in different projects
- Working with Staticfiles

## VI) DJANGO VIEWS

- Requesting a web page via URL
- Rendering web page via view function
- Render HttpResponseRedirect to templates
- Application with multiple views
- Understanding context object and dictionary type
- GET and POST methods

## VII) DJANGO TEMPLATES

- Template tags
- Template Filters
- Template API
- Passing Dynamic content to template file
- Passing multiple dict values to template
- Loading static files
- Adding image file to template
- Advanced Templates
- Template library
- custom template filter
- custom templates tags
- Registering the tags

## **VIII) DJANGO ADMIN**

- Activating the Admin interface
- Creating super user for Admin site
- Using the Admin site
- How to use the Admin site

## **IX) DJANGO MODELS**

- Working with models and databases
- Defining Models
- Model Fields
- Defining forms
- ModelForms
- Makemigrations and migrate
- Registering models in settings.py
- Registering models with Admin site
- Connecting with sqlite3
- Connecting with MySQL
- Connecting with Oracle

## **X) ADVANCED CONCEPTS**

- Django ORM
- Faker Module
- Class based views
- Form validation
- Rendering forms
- crispy forms
- MultiselectField
- Embeded Video
- Uploading and downloading Files
- Working with Audio and video
- Integrating with legacy databases and applications
- Sessions users Registrations
- Security
- Django Deployment
- Other Contributed Frameworks

# Python for Data Science

## Introduction to Data Science

- Machine Learning Introduction
- Datasets
- Supervised /Unsupervised Learning
- Statistical Analysis
- Data Analysis
- Uni-variate/multi-variate analysis
- Correlation Analysis
- Algorithm types
- Applications

## Python Matplotlib

- Introduction to matplotlib
- Installing matplotlib
- Generating graphs
- Generating Bargraphs
- Histograms
- Scatter plots
- Stack plots
- Pie plots

## PANDAS

### Pandas Introduction

### Pandas – Environment Setup

- Series
- DataFrame
- Data Type of Columns
- Panel

### Pandas — Series

- Series
- Create an Empty Series
- Create a Series from
- From ndarray
- From dict
- Accessing Data from Series with Position
- Retrieve Data Using Label (Index)

### Pandas – DataFrame

- DataFrame
- Create DataFrame
- Create an Empty DataFrame
- Create a DataFrame from Lists
- Create a DataFrame from Dict of ndarrays / Lists
- Create a DataFrame from List of Dicts
- Create a DataFrame from Dict of Series
- Column Selection
- Column Addition
- Column Deletion
- Row Selection, Addition, and Deletion

### Pandas – Panel

- Panel()
- Create Panel
- Selecting the Data from Panel

### Pandas – Working with Text Data

### Pandas – Indexing and Selecting Data

- .loc()
- .iloc()
- Use of Notations

### Pandas – Aggregations

- Applying Aggregations on DataFrame

### Pandas – Missing Data

- Cleaning / Filling Missing Data
- Replace NaN with a Scalar Value
- Fill NA Forward and Backward
- Drop Missing Values
- Replace Missing (or) Generic Values

## Pandas – GroupBy

- Split Data into Groups
- View Groups
- Iterating through Groups
- Select a Group
- Aggregations
- Transformations
- Filtration

## Pandas – Merging/Joining

- Merge Using 'how' Argument

## Pandas – Concatenation

- Concatenating Objects
- Time Series

## Pandas – Date Functionality

## Pandas – Timedelta

## Pandas – Categorical Data

- Object Creation

## Pandas – Visualization

- Bar Plot
- Histograms
- Box Plots
- Area Plot
- Scatter Plot
- Pie Chart

## Pandas – IO Tools

- CSV

## Pandas – Comparison with SQL

## NUMPY

### NUMPY – Introduction

### NUMPY – Environment

### NUMPY – Ndarray Object

### NUMPY – Data Types

## Pandas – Merging/Joining

- Data Type Objects (dtype)

## NUMPY – ARRAY ATTRIBUTES

- shape
- ndim
- itemsize
- flags

## NUMPY – ARRAY CREATION ROUTINES

- empty
- zeros
- ones

## NUMPY – ARRAY FROM EXISTING DATA

## NUMPY – ARRAY FROM NUMERICAL RANGES

- arange
- linspace

## NUMPY – INDEXING & SLICING

## NUMPY – ADVANCED INDEXING

- Integer Indexing
- Boolean Array Indexing

## NUMPY – ITERATING OVER ARRAY

- Iteration
- Order
- Modifying Array Values
- External Loop

## NUMPY – ARRAY MANIPULATION

- reshape
- ndarray.flat
- ndarray.flatten
- ravel
- transpose
- ndarray.T
- swapaxes
- rollaxis
- broadcast
- broadcast\_to
- expand\_dims
- squeeze
- concatenate
- stack
- hstack and numpy.vstack
- split
- hsplit and numpy.vsplit
- resize
- append
- insert
- delete
- unique

## NUMPY – BINARY OPERATORS

- bitwise\_and
- bitwise\_or
- invert()
- left\_shift
- right\_shift

## NUMPY – STRING FUNCTIONS

## NUMPY – MATHEMATICAL FUNCTIONS

- Trigonometric Functions
- Functions for Rounding

## NUMPY – ARITHMETIC OPERATIONS

- reciprocal()
- power()
- mod()

## NUMPY – STATISTICAL FUNCTIONS

- amin() and numpy.amax()
- ptp()
- percentile()
- median()
- mean()
- average()
- Standard Deviation
- Variance

## NUMPY – SORT, SEARCH & COUNTING FUNCTIONS

- sort()
- argsort()
- lexsort()
- argmax() and numpy.argmax()
- nonzero()
- where()
- extract()

## NUMPY – BYTE SWAPPING

- ndarray.byteswap()

## NUMPY – COPIES & VIEWS

- No Copy
- View or Shallow Copy
- Deep Copy

## NUMPY – MATRIX LIBRARY

- empty()
- matlib.zeros()
- matlib.ones()
- matlib.eye()
- matlib.identity()
- matlib.rand()

## NUMPY – LINEAR ALGEBRA

- dot()
- vdot()
- inner()
- matmul()
- Determinant
- linalg.solve()

## NUMPY – MATPLOTLIB

- Sine Wave Plot
- subplot()
- bar()

## NUMPY – HISTOGRAM USING MATPLOTLIB

- histogram()
- plt()

## NUMPY – I/O WITH NUMPY

- save()
- savetxt()

I have done my Python course in Digital Nest. My trainer is absolutely perfect in teaching and explaining doubts. He even helps me after the completion of my course also. Thank You so much Trainer and Digital Nest My knowledge on Python was nonexistent before the class. But after the class, Python is one of my primary programming languages.

**Madhumitha**

Process Associate | Cognizant

“  
After finished my college i had no hope on working in a software company. That time i reach Digital Nest and I got to be an expert in Python. Now i am working. Thanks to my trainer and Digital Nest

**Manohar**

B.Tech Student

”

“  
Overall it was a great course... The instructor was exceptionally good at explaining things and answering questions

Rahul

Application Engineer | Uber

”  
”

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| <br>High performance. Delivered. |  |   |  |  |   |
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# Our Trainees Hail from

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# Python Modules

Short Term L1

## Core + Advanced Python

### DURATION

60 Hrs | 2 Months  
Online | Classroom

### TOPICS

#### Core Python

Python Operations  
Operators in Python  
Python IDE's  
Flow Control statements  
Looping Statements  
Strings, Collections in Python  
Python Lists, Tuples, Sets, Dictionary  
Functions, Modules in Python  
Errors & Exception, File Handling

#### Advanced Python

OOP's Concepts  
Regular Expressions  
Database Access  
GUI Programming  
Data Analytics  
Excel Workbook  
Multithreading/ Multiprocessing

### Highlights

4 Assessments  
250+ coding examples  
Live Simulation sessions  
Worksheets  
Notes  
Coding exercises  
Recorded videos of each session  
Topic wise assignments  
Microsoft certification support

 Intake 25 per batch

Fee: ~~Rs. 30,000/-~~  
**Rs. 20,000/-**

Add on Module

## Django Framework

### DURATION

60 Hrs | 2 Months  
Online | Classroom

### TOPICS

Django Introduction  
Web Frameworks  
Django Installation  
Django Project Architecture  
Django Application Creation  
Django Views  
Django Templates  
Django Admin  
Django Models  
Advanced Concepts

### Intake

25 per batch

Fee :

~~Rs. 25,000/-~~  
**Rs. 15,000 /-**

Long Term L2

## Full Stack Python

### DURATION

180 Hrs | 6 Months  
Online | Classroom

### TOPICS

#### Core + Advanced Python + Django &

#### Web Development

HTML  
CSS  
BOOTSTRAP  
JAVASCRIPT

#### SQL

#### Python for Data Science

Introduction to Data Science  
Python Matplotlib  
PANDAS  
NUMPY

#### Rest API

#### PROJECT – 30 Days

### Highlights

10+ Assessments  
25+ Applications Creation  
Hands On Project  
Personal Attention To Each Student  
15+ Assignments  
Resume Building Sessions  
Interview Preparation  
Mock Interviews  
Dedicated Student & Placement Manager  
Career Guidance

 Intake 25 per batch

Fee :

~~Rs. 65,000/-~~  
**Rs. 45,000/-**

# FULL STACK PYTHON FAQ'S

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## DURATION

6 Months

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## ELIGIBILITY

Any Graduate

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## CERTIFICATIONS

Digital Nest Certificate

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## LAPTOP CONFIGURATION

OS: Windows X, Ram: 4GB, HDD: 320GB

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## ROLES

Python Developer, S/W Engineer, Research Associate, Web Developer  
QA Assurance, Hadoop Dev, G/S Analyst, Application Engineer,  
Automation Engineer, Research Associate

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## AVG PACKAGES

2.4-4.5 Lakh p.a. (Fresher) | 4-12 Lakh p.a. (Experienced)

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## PRE REQUISITE

There are no pre-requisites to learn PYTHON

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## WHO CAN LEARN

Fresh Graduates, Web Designers, Web Developers,  
Data Analyst, BPO / Business Intelligence Professionals,  
IT Professionals, Automation Learners

# Ready to get incubated in **PYTHON** **Lets Start**

Reach Us:

📍 1st Floor, SNR Towers,  
Beside BVRIT  
City Center bus stop,  
**PANJAGUTTA**, Hyderabad.

📍 2nd Floor,  
Above Karnataka Bank,  
Silicon Valley Road,  
**HITECH-CITY**, Hyderabad.

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