



**DATA
SCIENCE**

Basic Data Science and Data Analytics

Python -Python is very **powerful language** and has its presence in each field of computer science. You talk about **programming, web-designing, GUI-Application development, Game designing, Data Science, Hacking, Scientific Research and Data Analytics** etc. in each field Python have its wide scope and role.

Core-Python –This is the fundamental course of python or we can say introduction to python language. This course leads you to understand about programming and coding as well as grow your roots into python. You will learn how to **code in python** and all syntax of python with **real time examples**.

Core-Python Course Highlights

- Understanding of python rich data-types as **Numbers, Strings, Lists, Tuples, Dictionaries** and **Sets**.
- Introduction to **Python Operators** and **their Precedence**.
- Understanding of **Control Flow** of programs with **Flow charts, Algorithms** and **Control Statements (if-else, nested if-else)**.
- **Python Functions** in deep to make code portable and reusable
- **Python Decorator** to decorate any boring function to impressive function.
- **Python Loops (For and While)** to make interactive code as well as simply complex code.
- **Data Structures and Algorithms (searching, sorting)** implementation in python.



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- **Iterators, next** and **Generators** to control over each iteration
- **OOPS** concept (**Polymorphism, Inheritance, Abstraction, Overriding, Data Hiding, Classes and Objects**) allows you to code dynamically, secure and efficiently.
- **Standard Built-in** modules such as **os, sys, time, shutil, turtle** and **Random** etc.
- **Python Files** make you a persistent coder who can play with data of files.
- **Exception Handling** will allow you to code smartly and handle unwanted system errors.
- **JSON** with python allows you to work with any **API** or to save your objects as it is to the files.
- **Regular Expressions** Allows you to become a data analyst who can search, match and replace any pattern or data item into a very big junk data.
- Introduction to advance topics such as **multithreading, database connectivity** and **API's**.
- Introduction to latest technologies such as **Nagios, Container, Docker, Automatization, Hadoop, Big data, Networking, Linux** etc.
- This course also introduces you with **Digital Footprint** and from very first day you will be coding at many coding sites such as **GeeksforGeek, HackerRank, CodeChef, TopCoder**.
- Basic knowledge about version control system such as **GitHub**

The best part of this training is that from the very first day you will be coding in very wide manner with projects based on real life implementation.

Project Highlights

GRRAS provides you **Project Based Learning** in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an **authentic, engaging** and complex **question**, problem, or challenge. You will learn how to **create projects**, expert faculty help you in **improving your coding** and trained you to present your knowledge and projects.



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1. **Guess Game** – In this simple projects you will learn how to play with random numbers and basic idea of making a game. This projects also includes many small projects similar to this as **Rock Paper scissor Game, Dice Rolling Simulator**.
2. **Bank Application** – This is a very interesting projects which you will be creating by yourself in background while training. With each topic you will modify your project. This is a Bank Application in which you can perform certain tasks such as opening an account, Crediting and Debuting to account, Adding account and managing database to handle persistent data.
3. **Text Editor** – In this module with the help of **os, sys, shutil, time modules** you will be able to create notepad like editor in which you can open, save, save as, create, update, rename, search, copy, move files in your system.
4. **Logo App** – with the help of turtle module you will learn to make a logo projects where you can create logo and graphical drawing.
5. **Search Engine** – with the help of **re-module, os-module** and **string functions & formatting** you will create a google like search engine to search something into your system or files

Advance-Python –This is an advance course of python to make you an industry ready. This course leads you to understand advanced concepts of programming such as **sockets, Multithreading, Networking Tools, Urllib, NumPy, SciPy, NmapandOpenCV**. By completing this course you will become **pythonExpert**.

Advance Course Highlights

1. Data Science Overview

- Introduction to Data Science
- Different Sectors Using Data Science
- Purpose and Components of Python
- Quiz

2. Data Analytics Overview

- Data Analytics Process

- Exploratory Data Analysis (EDA)
- EDA – Quantitative Technique
- EDA – Graphical Technique
- Data Analytics Conclusion or Predictions
- Data Analytics Communication
- Data Types for Plotting
- Data Types and Plotting
- Knowledge Check
- Quiz

3. Statistical Analysis and Business Applications

- Introduction to Statistics
- Statistical and Non-statistical Analysis
- Major Categories of Statistics
- Statistical Analysis Considerations
- Population and Sample
- Statistical Analysis Process
- Data Distribution
- Dispersion
- Knowledge Check
- Histogram
- Knowledge Check
- Testing
- Correlation and inferential Statistics

4. Python Environment Setup and Essentials

- Anaconda
- Installation of Anaconda Python Distribution (contd.)
- Data Types with Python
- Basic Operators and Functions

5. Mathematical Computing with Python (NumPy)

- Introduction to NumPy
- Demo 01-Creating and Printing an ndarray
- Class and Attributes of ndarray
- Basic Operations



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- Activity-Slice It
- Copy and Views
- Mathematical Functions of NumPy

6. Scientific Computing with Python (SciPy)

- Introduction to SciPy
- SciPy Sub Package – Integration and Optimization
- Calculate Eigenvalues and Eigenvectors
- SciPy sub Package – Statistics, Weave and IO

7. Data Manipulation with Pandas

- Introduction to Pandas
- Understanding DataFrame
- View and Select Data Demo
- Missing Values
- Data Operations
- File Read and Write Support
- Pandas Sql Operation

8. Advance Data Science and Data Analytics

9. Machine Learning with Scikit-Learn

- Supervised Learning Model Considerations
- Scikit-Learn
- Supervised Learning Models – Linear Regression
- Supervised Learning Models – Logistic Regression
- Unsupervised Learning Models
- Pipeline
- Model Persistence and Evaluation

10. Natural Language Processing with Scikit Learn

- NLP Overview
- NLP Applications
- NLP Libraries-Scikit
- Extraction Considerations
- Scikit Learn-Model Training and Grid Search



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11.Data Visualization in Python using matplotlib

- Introduction to Data Visualization
- Line Properties
- (x,y) Plot and Subplots
- Types of Plots

12.Web Scraping with BeautifulSoup

- Web Scraping and Parsing
- Understanding and Searching the Tree
- Navigating Options
- Demo3 Navigating a Tree
- Modifying the Tree
- Parsing and Printing the Document

13.Python Integration with Hadoop MapReduce and Spark

- Why Big Data Solutions are Provided for Python
- Hadoop Core Components
- Python Integration with HDFS using Hadoop Streaming
- Python Integration with Spark Using PySpark

14.Project 1

- Project 1 Stock Market Data Analysis
- Project 1 Demo

15.Project 2

- Project 2
- Main Project 2

Grras USP's:-

When you have so many options to consider, why Grras should be your preferred Training Partner?

Hence, we give you some Neutral advice:

- Take a look at our labs Infrastructure and availability.
- 100% Job Assistance for both fresher and Experienced.



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- We are authorized & certified partner of Red hat & our entire team & Trainer expertise & are same.
- Lifetime membership. (You can join same course again for purpose of revision and update at free of cost at our any center) in India or you can solve your query by online help.)
- Exam Scenario based Preparation Included in training.
- From basic to practical based training on system.
- We are so flexible in time adjusting according to candidates.
- Boot camp. For exam preparation along with training.
- We have some unique features with our training programs.
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THANK YOU

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