



**Python** - Python is very **powerful language** and have 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.
- **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.



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- **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 introduce 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.

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.



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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, Web-Frameworks(Django), GUI-Applications (Tkinter), Urllib, NumPy, SciPy, Nmap** and **OpenCV** . By completing this course you will become **python Expert**.

## **Advance Python Course Highlights**

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. Learning at **GRRAS** is fun and you will experience extreme level of training.

- **Revision of Core Python** – Before starting with Advance Python you will come to revise the core python course quickly as you need to understand basic of python. It will cover **Data Types, Operators, Functions, Modules and Packages, OOPs concept (class and object), Files and Exceptions**.
- **Database Connectivity** – connecting python code to various databases out there such as **sqlite3, mysql, mariadb, mongodb** etc.
- **Advanced Re-Module** – In this you will learn to manipulate the data, search, edit and replacing of strings. Matching complex regular expression and making compiled re-expression.
- **Advance Exception Handling** – Extending exception handling in this you will learn to create your own custom exception and handling exceptions in different manner.
- **Networking Tools** – In this chapter you will learn about networking tools to using **Socket Module** and also learn **Port Scanning** using **nmap Module**.
- **SMTP Services** – You will learn to implement smtp services using python **smtplib module**. Also you will be creating python scripts to manage mail transmission.

- **Web-Designing** – In this Chapter you will learn how to make websites using python. **Dynamic website making** using **CGI** and **WSGI** scripts.
- **Advance Web-Designing** – In This chapter you will be working on famous python Web-frameworks such as **Django, Flask, and Pyramid**.
- **Django in deep** – In This chapter you will learn about very powerful and future of web-designing module **Django** that powers up **Youtube, Instagram** like sites. You will also learn about database connectivity, dynamic hosting of sites.
- **JSON and XML** – IN this chapter you will learn about json and xml language which are the backbone of server-client data transfer. You will be able to create your json data using python.
- **Advance API's** – In this chapter you will learn all about API's and data transfer between server and client. **Google Map APIs, REST APIS** and **Facebook APIS** will be covered and you will be able to create your own **APIs**.
- **Multi-threading** – In this chapter you will learn all about **threads** and **shared memory** using python. You will be able to create **multitasking apps** and **code optimization** using Multi-threading.
- **GUI Modules** – In this chapter you will introduced to python GUI modules such as **Tkinter, Jpython, PyQt** and **wxPython** to create some magical **GUI** applications.
- **Advanced Tkinter Module** – In this module you will learn tkinter in deep to create **dynamic desktop applications**. Making a **Chat Application** using tkinter will be fun.

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1. **Database Implementation** - This is a huge and logical project where we have to make our own database using **python files, OS modules, String Functions** and **Re-Modules** plus using **Multi-threading** and all most all concepts of python.
2. **A Daily Shop Product Enquiry Application** – In this application we will make a application which will keep track of all day sale and left stock in a daily

shop. Almost every retailer using this type of application so it will be fun to making such a application.

3. **Chat Application** – This is interesting isn't it? In this project we will make whatsapp like GUI Chat application where in chatroom box 2 or more people can chat with each other as well as can share files.
4. **Mailing Application (Mail Bombing, Automated Mail service)** – In this project we will make email applications to automate mail sending and also we can make a mail bombing application to attack someone's mail account.
5. **Download Manager** – In this project we will make a download manager which will be able to download almost any type of data directly and speedily using **urllib module** .
6. **Map Application** – This application will give description about the place which will be given as input.
7. **Calculator** - GUI calculator is an application to perform calculation. This will be done by **tkinter module**.
8. **A Django Based Dynamic Web-site** – This is totally your project where you will be making a real time **web-site** based on your idea using **Django module**.
9. **Polling and Blog Website** - These websites are powered by Django module and have very advanced web-designing.
10. **Port Scanner** – Enter a IP address and a port range where the program will then attempt to find open ports on the given computer by connecting to each of them. On any successful connections mark the port as open.

## Grras USP's:-

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

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- 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.
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- Boot camp. For exam preparation along with training.
- We have some unique features with our training programs.
- Three times Award by Red hat for best training partner.

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