Python

- ## Introduction to Python Programming Language :-

Just like we use Hindi or English to communicate with each other, we use a programming language Python to communicate with the computer.

Python:- python is simple and easy to understand language which feels like reading simple English.

- Python is a widely used general-purpose, high level programming language.

- Python is a popular programming language.

- Python is easy to learn.

- Its syntax is easy and code is readable.

* History and Origin of Python Language :-
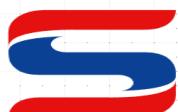
Python is a high-level, interpreted, interactive and object-oriented scripting Language.

who, where :- Python was developed by Guido van Rossum at National Research insitute for Mathematics and computer Sciene in the Netherlands.

when The Idea of Python started in early 1980s. Real Implementation started in 1989. finally Published in 1991 [27 feb 1991].

Language Python is derived from many other languages, including ABC, C, C++, Unix shell and other Scripting Languages.

Name Python There is a fact behind choosing the name Python. Guido van Rossum was reading the script of a popular comedy Series "Monty Python's flying Circus". He wanted to select a name which unique, little-bit mysterious. So he decided to selecting name Python after the Circus for their newly created Language.
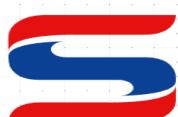
Python version List

Python programming Language is being updated regularly with new feature and support.

There are lots of update in Python versions.

- In 1994, Python version 1.0 was realsed with features like Exception Handling, Map, filter. etc

- In 2004, Python version 2.0 was realsed with features like list Comprehensions, Garbage Collection etc.

- @ In 2008, Python version 3.0 on the 3rd of December 2008.

- As of today, Python 3.7.4 is the lalest stable version - also Python 3.8 realsed on October 14, 2019

- Python 2.x and 3.x have proven to be the most used versions.

* Uses of Python
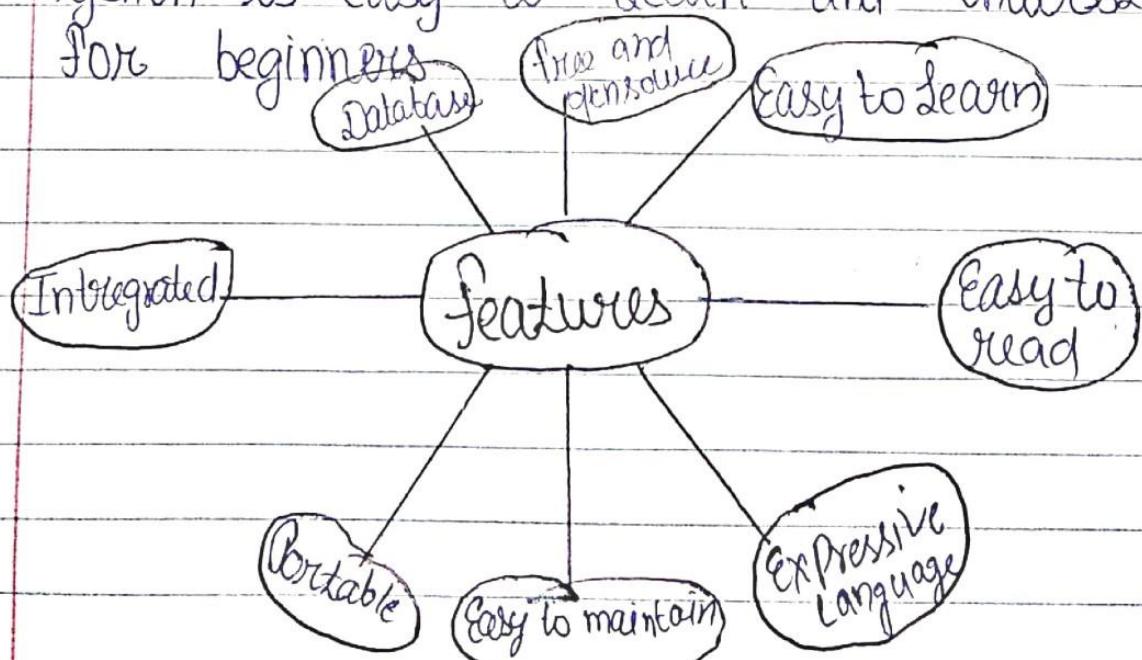
It is used for :-
- web development (server-side)
- Software development
- System scripting.

- Python can be used on a server to create web applications

- Python can be used to handle big data and perform complex mathematics.

- Python can connect to database systems

* Features of Python

Python is easy to learn and understandable for beginners.

Features
- Database
- Free and opensource
- Easy to learn
- Easy to read
- Expressive language
- Easy to maintain
- Portable
- Intregrated
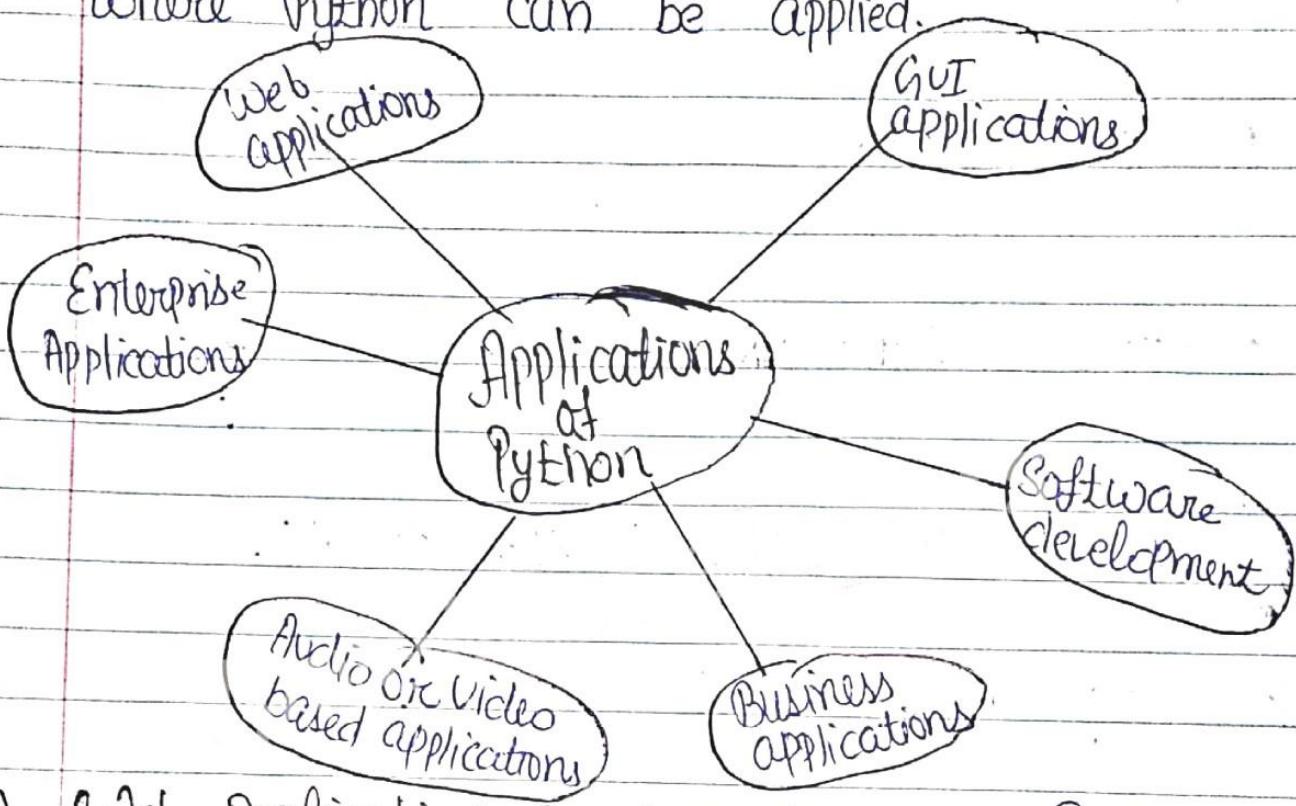
- **Easy-to-Learn :-** Python is easy to learn as compared to other Programming Languages. It is recommended Programming language for beginners.

- **Easy to read :-** Python code is more cleraly defined and visible to eyes.

- **Expressive Language :-** It can perform complex tasks using a few lines of code. for example :- the hello world program you simply type print("Hello world").

- **Easy to maintain :-** Python's source code is fairly easy to maintain.

- **Portable :-** Python can run on a wide variety of hardware platforms.

- **Integrated :-** It can be easily integrated with languages like C, C++, and JAVA etc.

- **Database :-** Python Provides Interfaces to all major Database.

- **Free and open Source :-** Python is freely available. and its source code is available

* Applications of Python
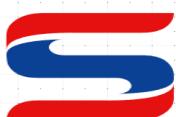
Here, we are spcifying application areas where Python can be applied.

Web applications

GUI applications

Enterprise Applications

Applications of Python

Software development

Audio or video based applications

Business applications

1) <u>Web Applications</u> :- we can use Python to develop web applications. One of Python web-framework named Django is used on Instagram.

2) <u>Desktop GUI Applications</u>:- The GUI stands for Graphical User Interface. Python Provides a TK GUI Library to develop a user Interface.

(3) Software Development :- Python is useful for software development Process.
It works as supporting language.

(4) Business Applications :- Business Applications differ from standard applications.
E-commerce is an example of business application. Python provides all the features of to develop business applications.
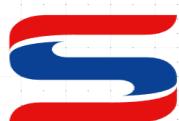
(5) Audio or video-based applications :- Some multimedia applications which are made by using Python are Time player, cplay etc.

(6) Enterprise Applications :- Python can be used to create applications that can be used within an enterprise or an organisator,

* Some other applications of Python

- Game development
- Artifical Intelligence.
- Education Programs
- Training Courses
- Language development.

* **Limitations of Python** :- Lets see some of the disadvantages of Python:-

- **Speed** :- Python is interpreted language and is slow as compared to c/c++ or JAVA.

- **Mobile Development** :- It is a weak lang. for mobile development.

- **Memory Consumption** :- Python's memory consumption is also high due to the flexibility of data types.

- **Run time Errors** :- This language requires more testing. It has errors that only show up at runtime because of dynamically typed.

- **Difficulty in Using Other Languages** :- The Python lovers becomes habitual to its feature and they face problem in leaving or working on other Programming language.