

INTRODUCTION TO PYTHON

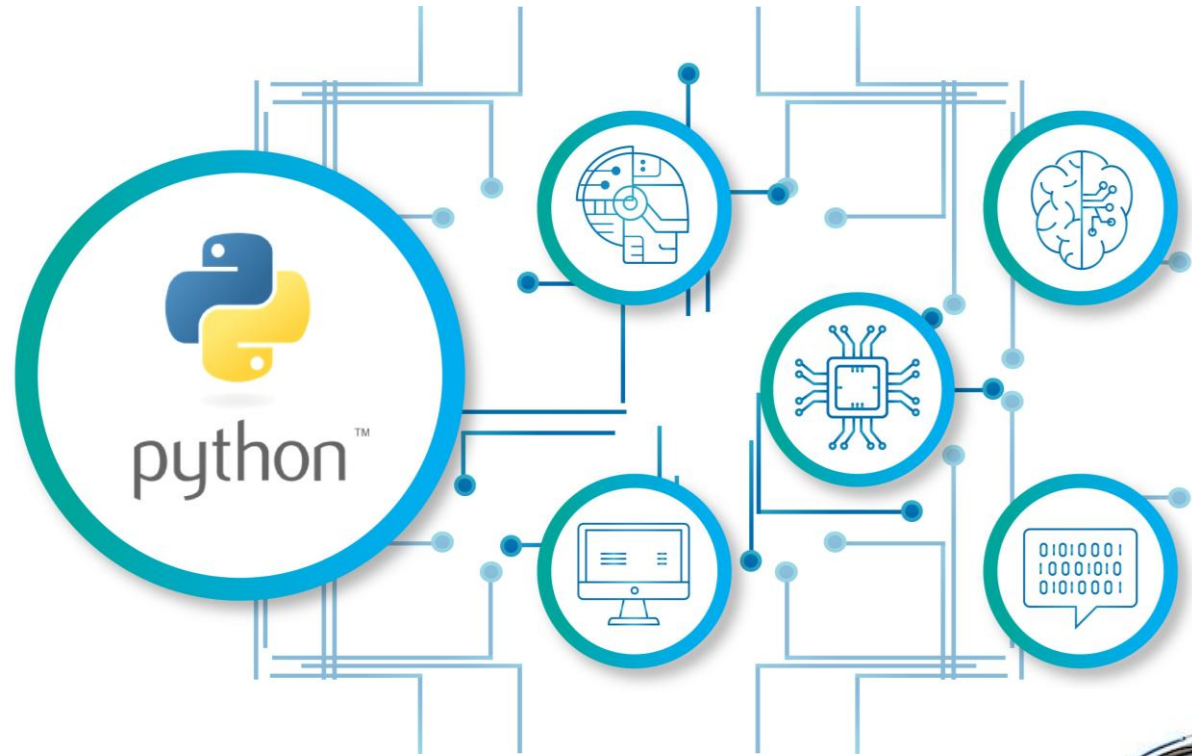


Our Agenda :

1. What is python?
2. History of python ?
3. Features of python?
4. Application of python?
5. Companies using python?

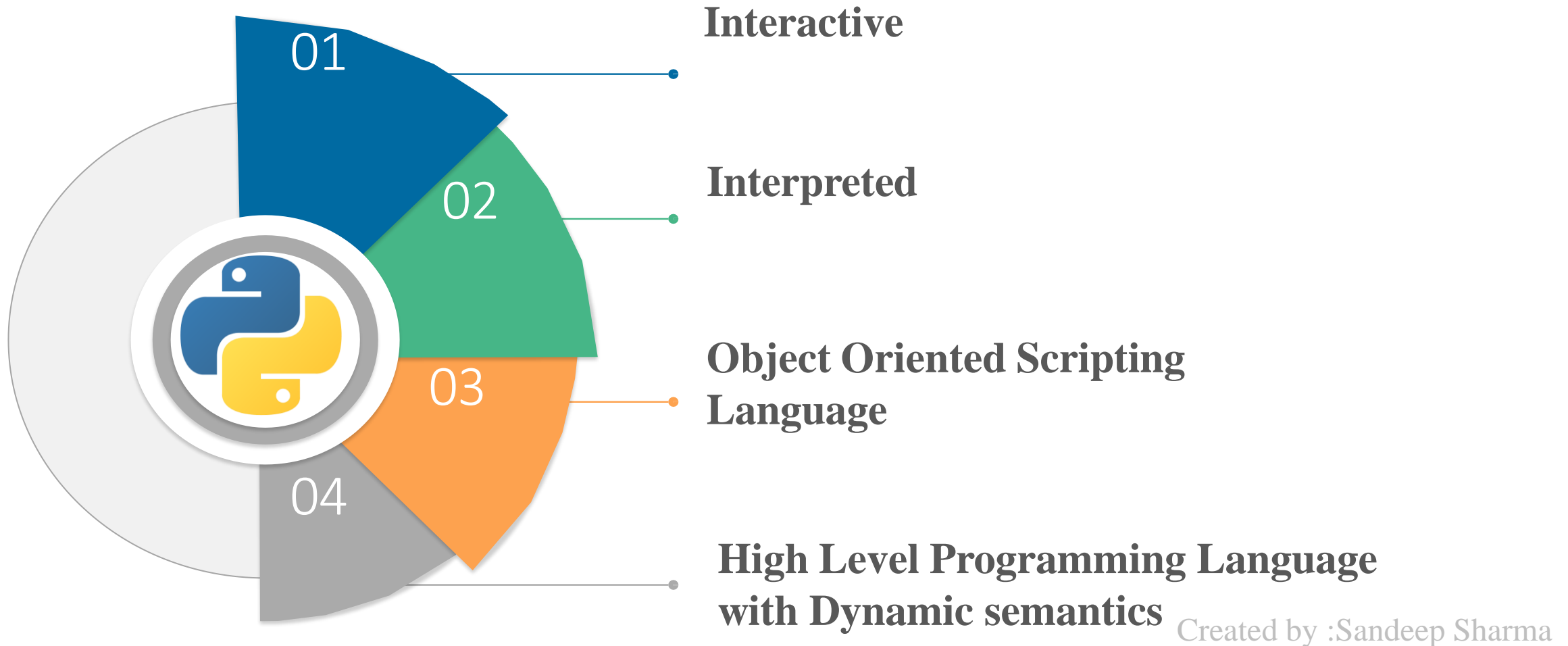
Agenda

- Overview of Python
- Key Features of Python
- Installing Python
- Python IDEs
- Basic Python Syntax
- Python Data Types
- Control Structures
- Functions in Python
- Basic Python Commands and Programs
- Resources for Further Learning
- Data Manipulation with Pandas
- Introduction to NumPy
- Data Visualization with Matplotlib and Seaborn
- OOPS Introduction .



What is Python ?

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together.



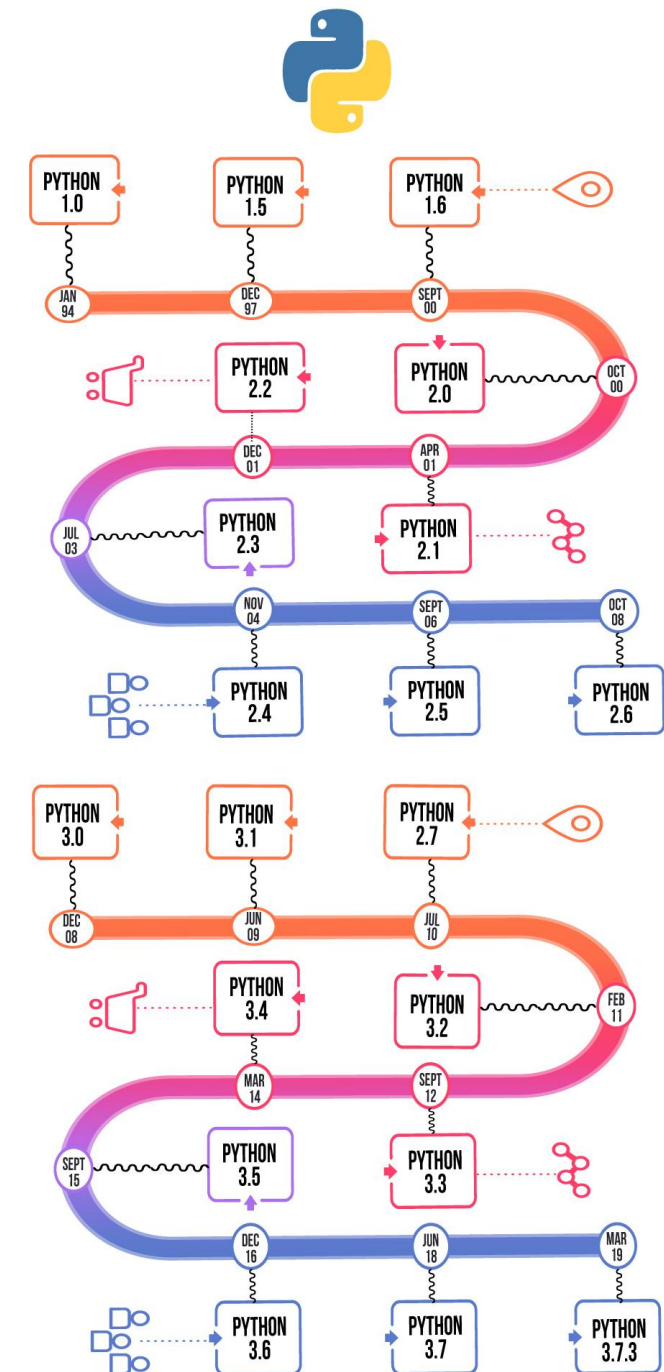


Definition:

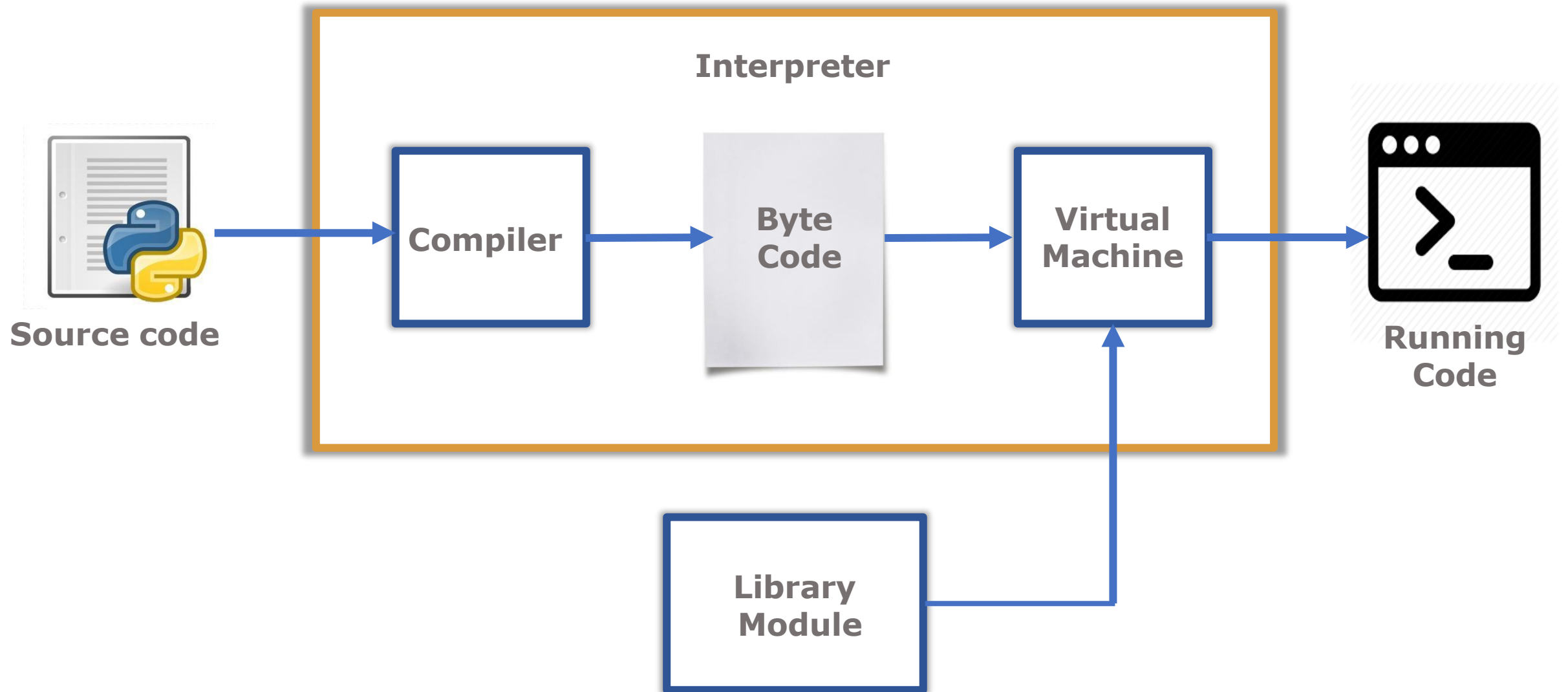
- ✓ Python is a high-level, interpreted programming language known for its simplicity and readability.
- ✓ **Beginner-friendly:** Great for learning programming due to its clear syntax.
- ✓ **General-purpose:** Python can be used for various tasks, from web development to data science.
- ✓ **High-level:** Easy to read and understand, focusing on code readability.
- ✓ **Interpreted:** No separate compilation step, making development faster.
- ✓ **Object-oriented:** Supports object-oriented programming concepts like classes and objects.
- ✓ **Dynamically typed:** Variables don't need pre-defined data types.
- ✓ **Large standard library:** Many built-in functions and modules for common tasks.
- ✓ **Versatile:** Used in web development, data analysis, machine learning, and more.

Brief History of Python

- Invented in the Netherlands, early 90s by Guido van Rossum.
- Python's design was influenced by the ABC programming language,
- First version of python is realised in 1991.
- In 1994 ,Python 1.0.0 was realised with new feature which map, filter, lambda.
- Python 2.X also add more feature like comprehensions garbage collection system.
- In 2001, the Python Software Foundation (PSF) was established to manage the development of Python and to promote its use.



How Python runs

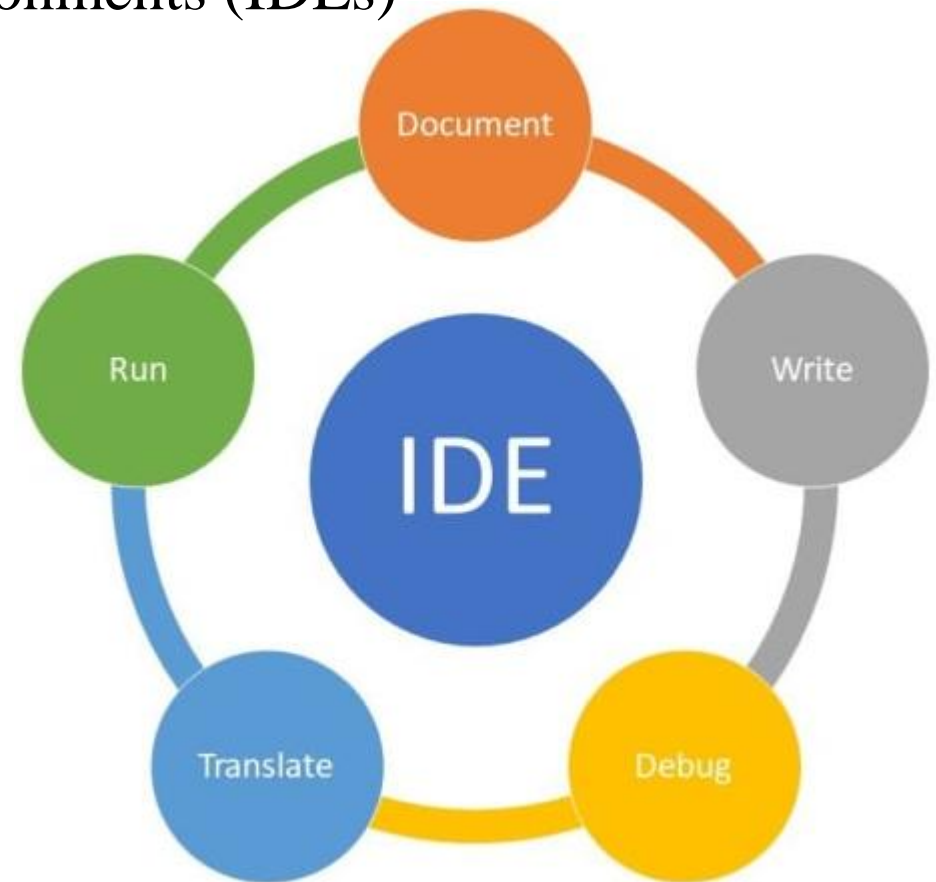


Python IDEs

Introduction to Integrated Development Environments (IDEs)

•Popular Python IDEs:

- PyCharm
- VS Code
- Jupyter Notebook
- Anaconda



Difference between Programing language & Scripting language

Java

```
Java
1 public class Main {
2     public static void main(String[]
   args) {
3         System.out.println("hello wor
   ld");
4     }
5 }
```


Difference between Programing language & Scripting language

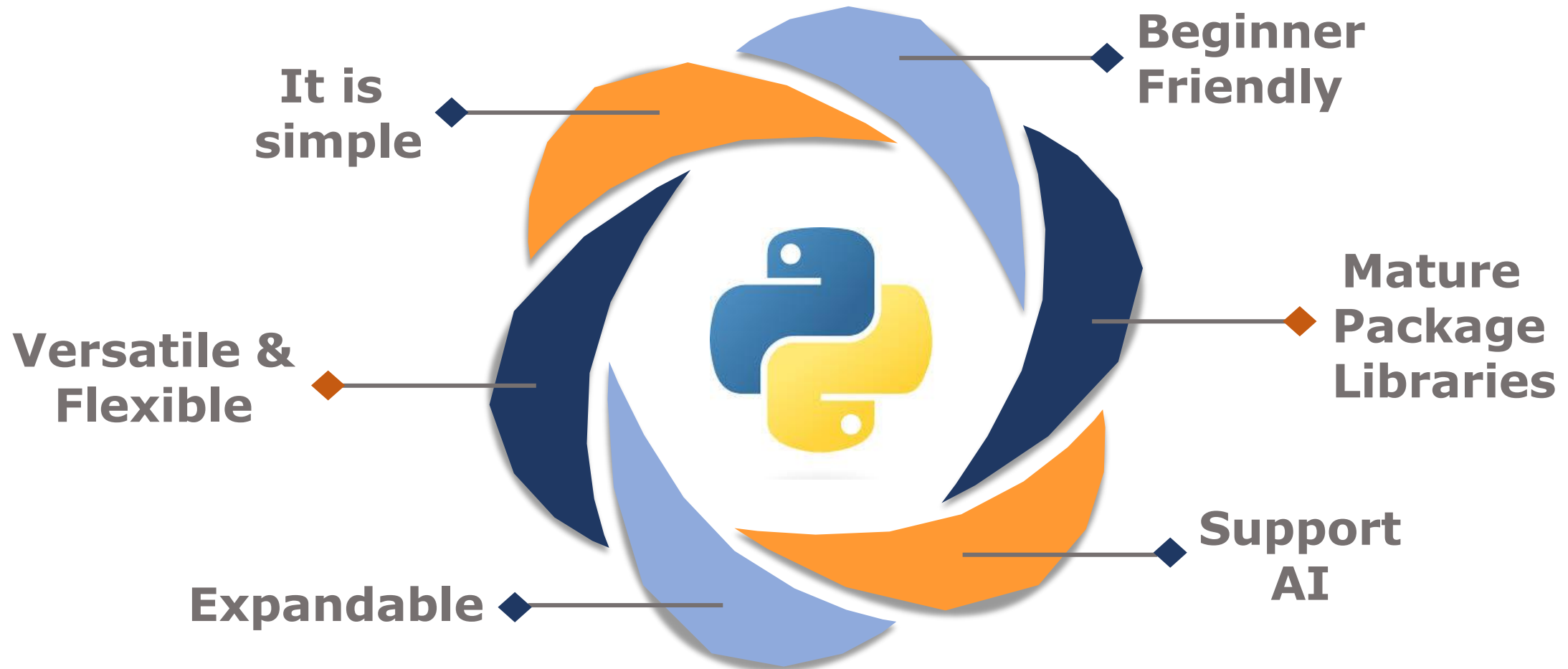
Java

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Java
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3         System.out.println("hello wor
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4     }
5 }
```

Python

```
Python
1 print("hello world");
```

Why Python ?



Features of Python ?

- Easy to Learn and Implementation.
- Open Source.

- Interpreted Language.
- Integrated with Other Languages.

- Extensive Standard Library
- Portability : supported on Windows, macOS, Linux, and many other OS.

- Large Community and Ecosystem
- Robust Frameworks for Web Development:

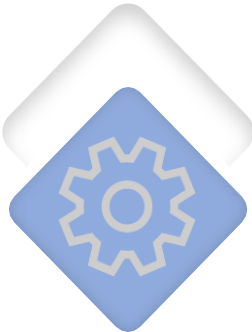
- Data Science and Machine Learning
- Automation and Scripting

Advantages:

**Free & Open
Source**



**Improved
Productivity**



**Interpreted
Language**



**Dynamically
Typed**



**Vast Libraries
Support**



**Object
Oriented**



Disadvantages:

**Speed
Limitations**



**Design
Restrictions**



**Weak in
Mobile
Computing**



**Underdeveloped
DB layers**



Applications Of Python



**Network
Programing**

6

1

**Web & Internet
Development**



**Database
Access**

5

2

**Games and 3D
Graphics**



**Business
Applications**

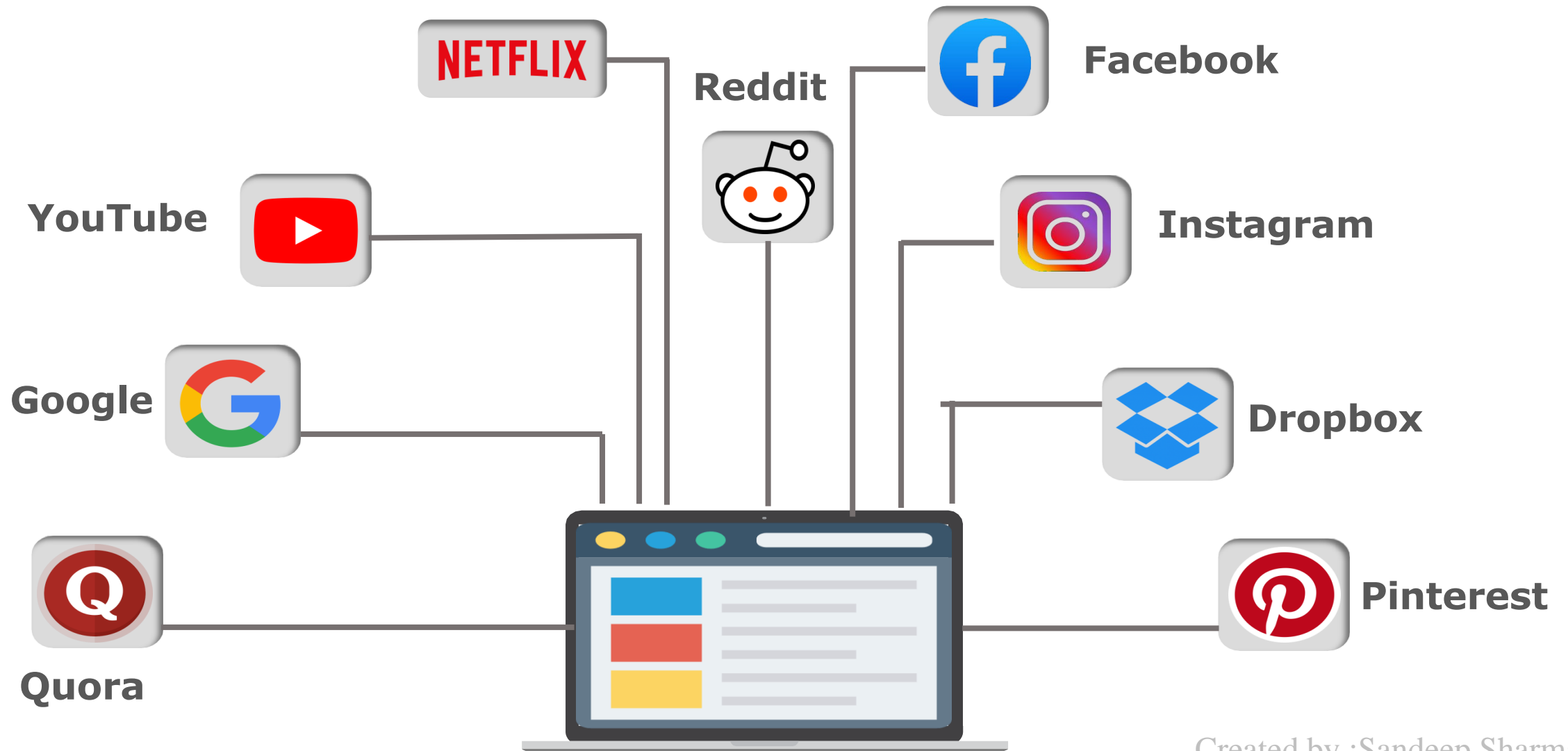
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**Software
Development**



Popular website build with Python





Basic Python Commands and Programs

Common Commands:

- `print()`
- `input()`
- `len()`
- `type()`

Python Data Types

Primitive Data Types:

- Integer
- Float
- String
- Boolean

Composite Data Types:

- List
- Tuple
- Dictionary
- Set



...Thank You...

