OOPS CONCEPTS IN PYTHON

- I'm going to talk about **Object-Oriented Programming**, or **OOP**, in **Python**. OOP is a helpful way of writing modular and reusable programs by grouping related data and functions together.

WHAT IS OOP?

- OOP(Object-Oriented Programming) is a way of designing software using classes and objects.
- Python supports OOP, making it easy to represent real-world entities in code.
- It makes code more modular, reusable and easier to maintain.
- Python is an object-oriented language, which means it supports all the main concepts of OOP, including classes, objects, inheritance, encapsulation, polymorphism, and abstraction.

FEATURES OF OOPS

FEATURES OF OOPS

1) **Class :** A class is a blueprint of creating objects, defining attributes and methods.
2) **Object :** An object is an instance of a class.

   Eg: A class of students and each student is object of that class.
3) **Encapsulation :** Encapsulation is defined as wrapping up data and information under a single unit.

   Eg: A person can have different **private** characteristics like name, age, and salary that should not be directly accessed.

FEATURES OF OOPS

4) **Abstraction :** Abstraction means displaying only essential information and hiding the details.

Eg: Mechanism of car, the person only knows outside structure not inner mechanism.

5) **Inheritance :** The capability of a class to derive properties and characteristics from another class is called Inheritance**.**

Eg: An Electric car which inherits basic car properties and adds extra electric features.

6) **Polymorphism :** The word Polymorphism means having "many forms". It allows the same method or function to work differently depending on the object that is using it.

Eg: A person can **perform different actions** in different ways depending on the role.

SUMMARY

- Object-Oriented Programming (OOP) in Python helps us write clean, reusable, and real-world-based code.
- By using features like Encapsulation, Inheritance, Polymorphism, and Abstraction, we can build programs that are easy to understand, maintain, and expand.

Thankyou

For any queries mail on : jainbhumi1331@gmail.com