**OOPS**

Object-oriented programming (OOP) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. An object can be defined as a data field that has unique attributes and behaviour.

**CONCEPTS**

1 class & object

2 inheritance

3 polymorphism

4 encapsulation

5 abstraction

**DIFFERENCE BETWEEN OOP AND POP**

Object-Oriented Programming (OOP) and Procedural-Oriented Programming (POP) are two different paradigms in programming, each with its own principles, approaches, and benefits.

1. **Object-Oriented Programming (OOP)**:
   * **Objects**: OOP revolves around the concept of objects, which are instances of classes. Objects encapsulate data and behaviour.
   * **Encapsulation**: It emphasizes encapsulation, meaning the bundling of data with the methods that operate on that data into a single unit.
   * **Inheritance**: OOP allows classes to inherit commonly used state and behaviour from other classes. This promotes code reuse and makes it easier to create and maintain an application.
   * **Polymorphism**: It enables objects of different types to be treated as objects of a common superclass. This allows for more flexibility and extensibility in code design.
   * **Abstraction**: OOP promotes abstraction, where complex systems can be modelled more accurately by abstracting away unnecessary details.
2. **Procedural-Oriented Programming (POP)**:
   * **Procedures/Functions**: POP focuses on procedures or functions that operate on data.
   * **Top-down approach**: It follows a top-down approach, breaking down a problem into a set of procedures.
   * **Data-centric**: POP is more data-centric, with functions acting on data structures.
   * **Global data**: In POP, data is often global and can be accessed or modified by any part of the program, which can lead to issues with maintainability and scalability.
   * **Less emphasis on reusability**: While code reuse is possible in POP, it's not as inherent as in OOP due to the lack of encapsulation and inheritance.

In summary, OOP emphasizes the organization of software into objects with associated data and behaviour, while POP focuses on the procedures or functions that operate on data. OOP offers advantages such as encapsulation, inheritance, and polymorphism, making it suitable for larger and more complex systems, whereas POP may be more suitable for smaller projects or situations where simplicity and directness are valued