**C++**

**Module 4.1**

**4.1\_2** **What is OOP? List OOP concepts?**

* OOP stands for Object-Oriented Programming. Procedural programming is about writing procedures or functions that perform operations on the data, while object-oriented programming is about creating objects that contain both data and functions. It provides a way to write reusable, modular and maintainable code.
* **OOP Concepts :** 
  1. Classes : User-defined data types that encapsulate data and functions.
  2. Objects : Instances of Classes.
  3. Inheritance : Deriving new classes from existing ones.
  4. Polymorphism : Ability of objects to take multiple forms.
  5. Encapsulation : Hinding implementation details.
  6. Abstraction : Showing only necessary information.

**4.1\_3 What is the difference between OOP and POP?**

* Differences :

1. Programming paradigm: OOP focuses on objects, while POP focuses on procedures.
2. Data organization: OOP uses encapsulation, while POP uses global variables.
3. Code reusability: OOP promotes code reusability through inheritance and polymorphism.
4. Complexity management: OOP helps manage complexity through abstraction and modularity.
5. Scalability: OOP is more scalable than POP for larger projects.