**MODULE: 4.1 (C++ Basic)**

* **What is OOP? List OOP concepts**

**Answer:-** In order to remove some of the flaws of POP, OOP came into existence.

OOP treats data as critical element in program development and does not allow it to flow freely around the system.

It ties the data more closely to the function that operates on it.

Object Oriented Programming allows decomposition of program into a number of entities called objects and then builds data and function around these objects.

**OOP Concepts** :-

Some of the basic concepts of object oriented programming are:-

i)Objects

ii) Classes

iii) Data abstraction and encapsulation

iv) Polymorphism

v) Inh2 eritance

vi) Dynamic Binding

* **What is the difference between OOP and POP?**

**Answer:-**

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| **Feature** | **Object Oriented Programming(c++)** | **Procedural Programming(c language)** |
| Key Focus | Objects and their interactions | Procedures and functions |
| Data Management | Data and behavior are encapsulated in objects | Data and behavior are separate entities |
| Abstraction | Encourages the use of abstract classes and interfaces | Does not emphasize abstraction |
| Inheritance | Supports inheritance, allowing classes to inherit properties and methods | Does not support inheritance |
| Polymorphism | Allows objects of different types to be treated as the same type | Does not provide inherent polymorphism |
| Code Reusability | High level of code reusability through inheritance and composition | Relies on functions and subroutines for code reusability |
| Code Organization | Follows a modular approach, with objects as self-contained modules | Relies on functions and procedures for code organization |
| Flexibility | Provides flexibility through polymorphism and dynamic binding | Relies on structured programming, offering less flexibility |
| Complexity Management | Encourages managing complexity through encapsulation and abstraction | Manages complexity through modular code organization and stepwise design |
| Real-World Modeling | Well-suited for modeling real-world entities and their interactions | May not align well with real-world modeling,focusing more on processes |