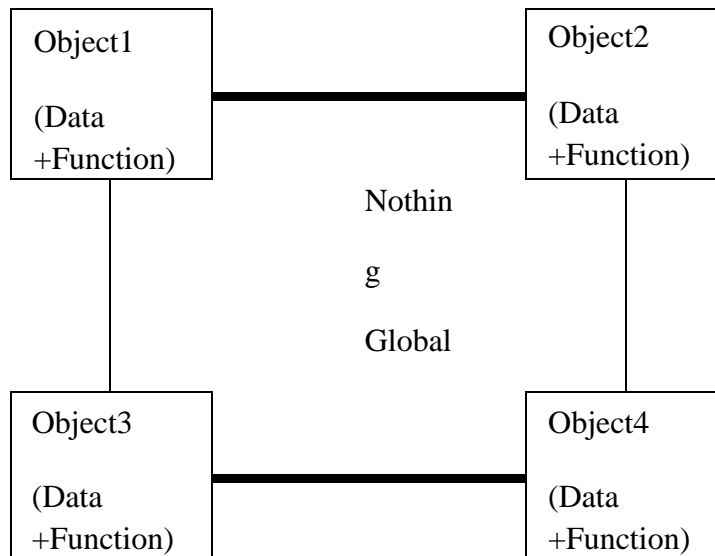


## **MODULE: 3.1 (C++ Basic)**

### **Q-2. What is OOP? List OOP concepts**

#### **✓ OOP:**

- OOP means Object Oriented Programming.
- In OOP, program is divided into small parts called objects. So objects is basic building block of Object Oriented Programming.
- Objects giving primary importance to data defining object structures in OOP.
- The functions of an objects are called the member function.



- As you can see in the following figure, four objects (Object1, Object2, Object3, Object4) are connected with each other using their member functions.
- The objects can communicate with each other by calling one another's member functions.
- Functions that operate on the data of an object are placed in the same unit.
- So data is not freely accessible to other objects; means data is hidden and hence misuse is protected.
- New data and functions can be easily added whenever necessary.
- Some Object-oriented languages are C++, JAVA, C#.

#### **✓ OOP Concepts:**

There are following basic concepts of Object Oriented Programming:

- 1) Objects
- 2) Classes
- 3) Abstraction
- 4) Encapsulation and data hiding
- 5) Inheritance
- 6) Polymorphism
- 7) Message passing

### Q-3. What is the difference between OOP and POP?

	Procedure Oriented Programming	Object Oriented Programming
<b>Divided Into</b>	In POP, program is divided into small parts called <b>functions</b> .	In OOP, program is divided into parts called <b>objects</b> .
<b>Importance</b>	In POP, Importance is not given to <b>data</b> but to functions as well as <b>sequence</b> of actions to be done.	In OOP, Importance is given to the data rather than procedures or functions because it works as a <b>real world</b> .
<b>Approach</b>	POP follows <b>Top Down approach</b> .	OOP follows <b>Bottom Up approach</b> .
<b>Access Specifiers</b>	POP does not have any access specifier.	OOP has access specifiers named Public, Private, Protected, etc.
<b>Data Moving</b>	In POP, Data can move freely from function to function in the system.	In OOP, objects can move and communicate with each other through member functions.
<b>Expansion</b>	To add new data and function in POP is not so easy.	OOP provides an easy way to add new data and function.
<b>Data Access</b>	In POP, Most function uses Global data for sharing that can be accessed freely from function to function in the system.	In OOP, data can not move easily from function to function, it can be kept public or private so we can control the access of data.
<b>Data Hiding</b>	POP does not have any proper way for hiding data so it is <b>less secure</b> .	OOP provides Data Hiding so provides <b>more security</b> .
<b>Overloading</b>	In POP, Overloading is not possible.	In OOP, overloading is possible in the form of Function Overloading and Operator Overloading.
<b>Examples</b>	Example of POP are : C, VB, FORTRAN, Pascal.	Example of OOP are : C++, JAVA, VB.NET, C#.NET.