ASSIGNMENT NO. 6

Q1. Define Object Oriented Programming Language?

Ans. Object-oriented programming (OOP) refers to a type of computer programming (software design) in which programmers define the data type of a data structure, and also the types of operations (functions) that can be applied to the data structure.

Q2. List down the Benefits of OOP?

Ans. The benefits of OOP include:

1. Re-usability

It means reusing some facilities rather than building it again and again. This is done with the use of a class. We can use it 'n' number of times as per our need.

2. Data Redundancy

This is a condition created at the place of data storage (you can say Databases)where the same piece of data is held in two separate places. So the data redundancy is one of the greatest advantages of OOP. If a user wants a similar functionality in multiple classes he/she can go ahead by writing common class definitions for the similar functionalities and inherit them.

3. Code Maintenance

This feature is more of a necessity for any programming languages, it helps users from doing re-work in many ways. It is always easy and time-saving to maintain and modify the existing codes with incorporating new changes into it.

4. Security

With the use of data hiding and abstraction mechanism, we are filtering out limited data to exposure which means we are maintaining security and providing necessary data to view.

5. Design Benefits

If you are practicing on OOPs the design benefit a user will get is in terms of designing and fixing things easily and eliminating the risks (if any). Here the Object Oriented Programs forces the designers to have a longer and extensive design phase, which results in better designs and fewer flaws. After a time when the program has reached some critical limits, it is easier to program all the non-OOP's one separately.

6. Better productivity

with the above-mentioned facts of using the application definitely enhances its users overall productivity. This leads to more work done, finish a better program, having more inbuilt features and easier to read, write and maintain. An OOP programmer cans stitch new software

objects to make completely new programs. A good number of libraries with useful functions in abundance make it possible.

E.t.c

Q3. Differentiate between function and method?

Ans. A function is a piece of code that is called by name. It can be passed data to operate on (i.e. the parameters) and can optionally return data (the return value). All data that is passed to a function is explicitly passed. A method is a piece of code that is called by a name that is associated with an object.

Q4. Define the following terms:

1. Class

2. Object

3. Attribute

4. Behavior

Ans.

Class:

A **class** describes the contents of the **objects** that belong to it: it describes an aggregate of data fields (called instance variables), and defines the operations (called methods).

Object:

An **object** is an abstract data type with the addition of polymorphism and inheritance. Rather than structure programs as code and data, an **object-oriented** system integrates the two using the concept of an "**object**". An **object** has state (data) and behavior (code). **Objects** can correspond to things found in the real world.

Attribute:

Attribute (computing) ... In computing, an **attribute** is a specification that defines a property of an object, element, or file. It may also refer to or set the specific value for a given instance of such. For clarity, **attributes** should more correctly be considered metadata.

Behaviour:

A class's **behavior** determines how an instance of that class operates; for example, how it will "react" if asked to do something by another class or object or if its internal state changes. **Behavior** is the only way objects can do anything to themselves or have anything done to them.