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Assignment 1

1) Compare POP and OOP

	POP	OOP
1)	POP stands for procedural oriented programming	OOP stands for Object oriented programming
2)	POP Follows top down approach	OOP Follow bottom up approach
3)	A program is divided into Functions and they interacts	A program is divided into objects and their interactions
4)	Inheritance is not Supported	Inheritance is Supported
5)	No data hiding present Data is globally accessible	Encapsulation is used to hide data
6)	Example - C, Pascal	Example - C++, Java

2) Define OOP

Object oriented programming is a programming paradigm based on the concept of "objects" which may contain data, in the form of fields often known as attributes and code in the form of ~~fields~~, procedures, often known as methods. For example a person in an object which has certain properties such as height, gender, age, etc. It also has certain method such as move, talk and so on.

Object :- This is the basic unit of object - oriented ~~unit~~ programming. That is both data and function that operate on data are bundled as a unit called an object

Class :- ~~Whom~~ When you define a class we define a blueprint for an object. This doesn't actually define any data, but it does define what the class name means that is what an object of the class will consist of and what operations can be performed on such an object.

3) Explain benefits of OOP

Ans

1) We can build the programs from standard working modules that communicate with one another, rather than having to start writing the code code from scratch which leads to saving of development time and higher productivity

2) OOP language allows to break the program into the bit-sized problems that can be solved easily

3) OOP systems can be easily upgraded from small to large systems

4) It is very easy to partition the work in a project based on objects

5) The principle of data hiding helps the programmer to build secure programs which cannot be invaded by the code in other parts of the program

6) By using inheritance, we can eliminate redundant code and extend the use of existing classes

4] list and Explain any 5 application of oop

1> class :- It means categorizing objects. A class defines all the common traits of the numerous objects that fall under it.

2) Abstraction :- It is the process of picking out similar characteristics of picking out similar cha of procedures and objects

3> Encapsulation :- It is defined as woraping into the data into under a single, consolidated unit. It is drfned as binding data with a function that mainpulates it

4> Inheritance :- It comprises the language and the codes used by various applications to communicate with each other

5> Polymorphism :- It refers to programming language's ability to process objects uniquely according their data type and oo class

5) What is the difference between object and class ?

	class	object
1)	A class is a blueprint From which we can create the instance i.e objects	An object is the instance of class which helps programmer to use variables and methods from inside the class
2)	A class is used to bind data as well as methods together as a single unit	object acts like a variable of the class
3)	classes have logical existence	objects have a physical existence
4)	A class doesn't take any memory spaces whom a programmer creates one	An object takes memory whom a programmer creates one.
5)	The class has to be declared only one	objects can be declared several times depending on the requirement.

67 What is UML, List various UML diagrams and explain the components of class diagram unified Modeling Language (UML) is a general purpose modelling language. The main aim of UML is to define a standard way to visualize the way a system has been designed It is quite similar to blueprints used in other fields of engineering

UML Diagram Types

Structural Diagrams
- class diagram
- composite structure
- Deployment diagram
- Package diagram
- Profile diagram
- object diagram
- component diagram

Behavioral Diagram
- state Machine Diagram
- communication Diagram
- usecas diagram
- Activity Diagram
- Sequence Diagram
- Timing diagram
- Interaction overview diagram

class Diagram

▷ Upper section :- contains the name of the class This section is always required, whether you

are talking about the classifer or an object

2> Middle section :- contains the attributes of the class use this section to describe the qualities of the class.

3> Bottom section :- Includes class operations (methods) Displayed in list Format, each operation takes up it own line. The Operations describe how a class interacts with data.

7. What is the use of self parameter in any method in python

=> The self parameter is a reference to the current instance of the class and is used to access variables that belongs to the class. It does not have to be named self, we can call it whatever we line, but it has to be the First paramter of any function in the class.