2. what is oop? List oop concepts?

Object-oriented programming (OOP) is a computer programming model that organizes code around objects, rather than functions and logic. OOP is a popular approach to programming that's well suited for complex, large, and frequently updated software.

List oop concepts?

* Class
* Object
* Encapsulation
* Inheritance
* Polyomorphism

• Class:

• A blueprint or template for creating objects. It defines the attributes and methods that objects will have.

• Object:

• An instance of a class. It contains data and functions defined in the class.

• Encapsulation

• Bundling data (attributes) and methods within an object, protecting data from unauthorized access.

• This concept promotes data security and prevents accidental modification.

• Encapsulation is achieved by making class attributes private and providing public methods to access or modify them.

• Inheritance

• Creating new classes (derived classes) based on existing classes (base classes), inheriting their attributes and methods.

• This allows for code reuse and the creation of hierarchical relationships between classes. For example, a "Sports Car" class could inherit from the "Car" class, inheriting its attributes and methods while adding new ones specific to sports cars.

• Type of Inheritance

• Simple Inheritance

• Multilevel Inheritance

• Multiple Inheritance

• Hierarchical Inheritance

• Hybrid Inheritance