OOP:

Object OrientedProgramming (OOP) is a programming paradigm based on the concept of "Object”, which can contain data, in the form of [fields](https://en.wikipedia.org/wiki/Field_(computer_science)) (often known as *attributes* or *properties*), and code, in the form of procedures (often known as [methods](https://en.wikipedia.org/wiki/Method_(computer_science))). A feature of objects is an object's procedures that can access and often modify the data fields of the object with which they are associated (objects have a notion of "[this](https://en.wikipedia.org/wiki/This_(computer_programming))" or "self"). In OOP, computer programs are designed by making them out of objects that interact with one another. OOP languages are diverse, but the most popular ones are [class-based](https://en.wikipedia.org/wiki/Class-based_programming), meaning that objects are [instances](https://en.wikipedia.org/wiki/Instance_(computer_science)) of [classes](https://en.wikipedia.org/wiki/Class_(computer_science)), which also determine their [types](https://en.wikipedia.org/wiki/Data_type).

Advantages of OOP:

## 1. Modularity for easier troubleshooting

## 2. Reuse of code through inheritance

## 3. Flexibility through polymorphism

## 4. Effective problem solving

Difference Between Method and Function

Method:

A Method in object-oriented programming is a procedure associated with a class. A method defines the behavior of the objects that are created from the class. Another way to say this is that a method is an action that an object is able to perform.

Function:

AFunction is a combination of instructions that are combined to achieve some result. A function typically requires some input (called arguments) and returns some results.

Definitions:

Object:

Objects are basic run time entities in an OOP. Object represents an entity either physical (box), conceptual (chemical process), or software (list).An Object is a concept, an abstraction, a thing with sharp boundaries and meaning for an application.

Class:

Object contain data and code to manipulate that data. The entire set of data and code of an Object can be made a Class.

Attributes and Function:

Every class contains attributes and behaviors. Attributes are the characteristics of the class that help to distinguish it from other classes. Behaviors are the tasks that an object performs. A person's attributes, for example, include their age, name, and height, while their behaviors include the fact that a person can speak, run, walk, and eat.