Introduction to OOP

Course Title: Programming Language II
Course Code: CSE 111
Semester: Summer 2020

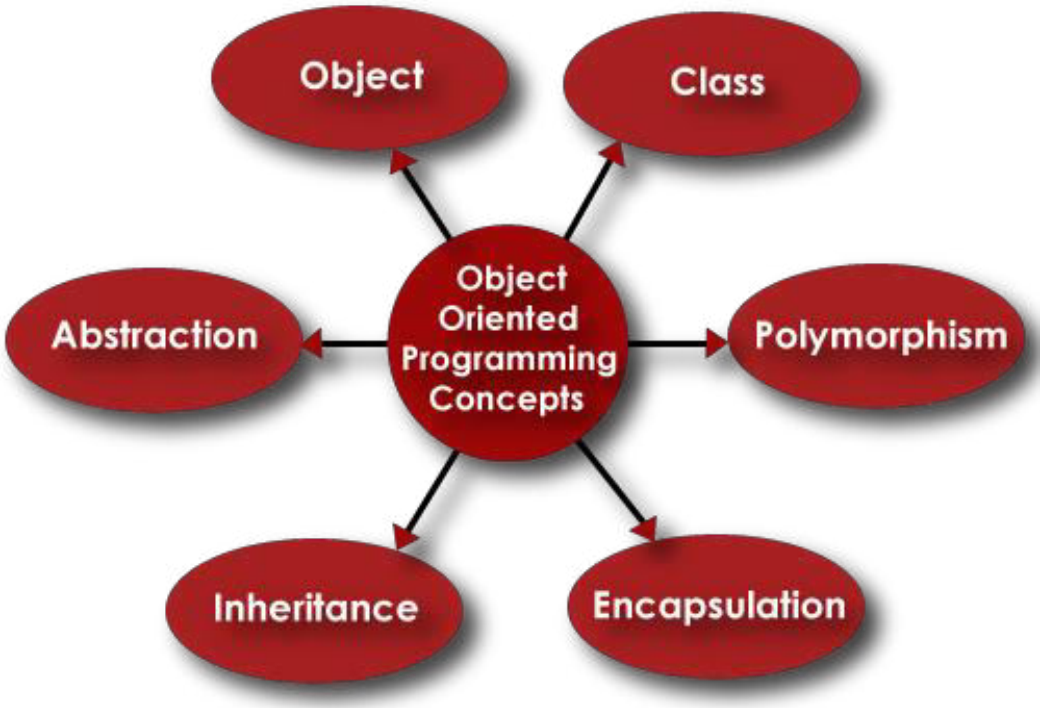
Today’s Lecture

- Concept of OOP
- Pillars of OOP
- Class
- Object

Concept of OOP

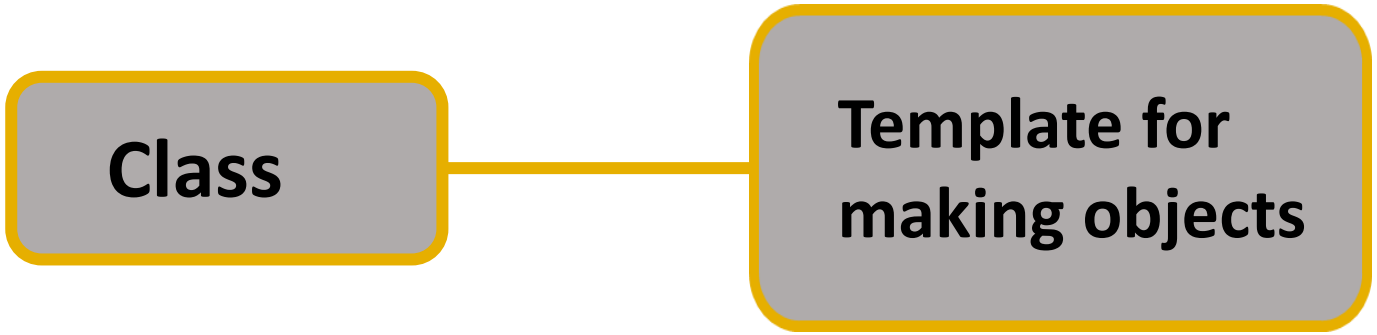
- Provides a means of structuring programs so that properties and behaviors are bundled into individual objects.
- OOP reflects the real world behavior of how things work
- It make visualization easier because it is closest to real world scenarios.
- We can reuse the code through inheritance , this saves time, and shrinks our project.
- There are flexibility through polymorphism

Pillars of OOP



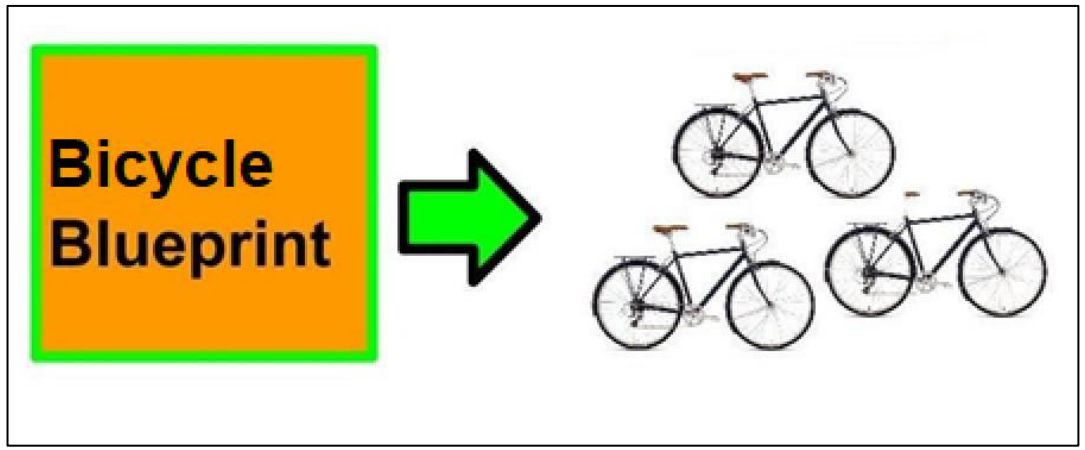
Class

- A class is the blueprint for the objects created from that class
- Each class contains some data definitions(called fields), together with methods to manipulate that data
- When the object is instantiated from the class, an instance variable is created for each field in the class

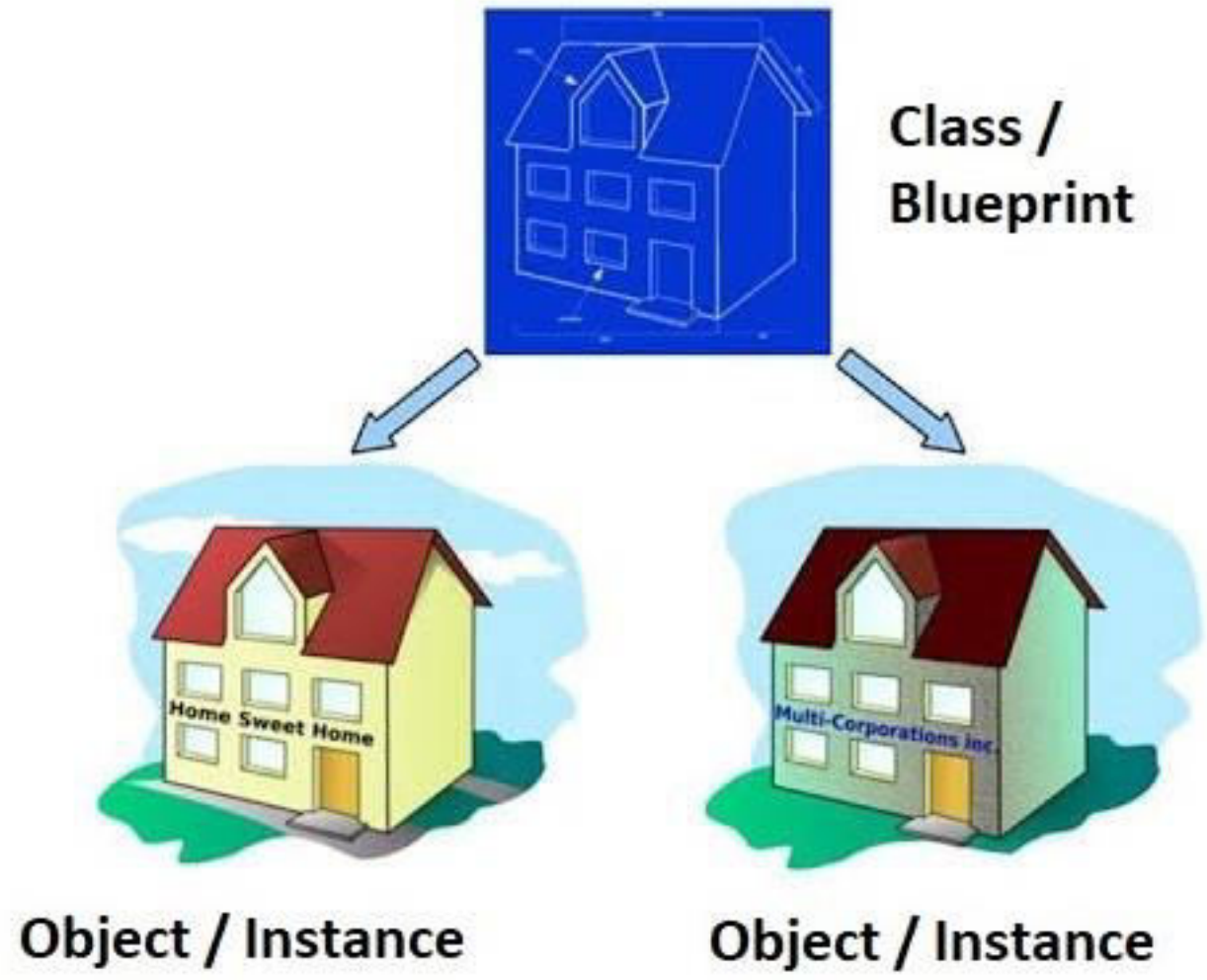


Object

- Objects are the basic run time entities in an object oriented system
- It is an instance of class
- We can say that objects are the variables of the type class



Class & Object



Class Components

- Data (the attributes about it)
- Behavior (the methods)

Data	Method()
• driver_name • num_passenger	• pick_up_passenger() • drop_off_passenger()

Method

- A Python method is like a Python function
- It must be called on an object.
- It must put it inside a class
- A method has a name, and may take parameters and have a return statement

Class Components

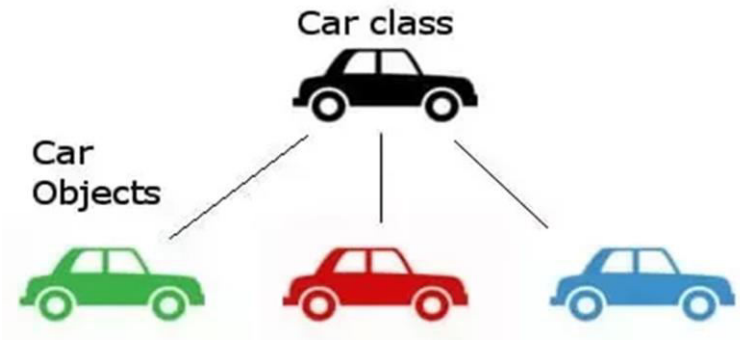
Taxi
• driver_name: **string** • num_passenger: **int**
• Pick_up_passenger() • Drop_off_passenger()

Class and Objects

	CLASS
Name	Car
Attributes	- Color - Brand
Behaviors	*Display()

OBJECT - 1	OBJECT - 2	OBJECT - 3
Mustang Car	Prius Car	Golf Car
- Green - Ford	- Red - Toyota	- Blue - Volkswagen
*Display()	*Display()	*Display()

Blueprint that describes a car



Instances of the cars describe by the blueprint

Next Lecture

- Constructor
  - Non parameterized
  - Parameterized


Thank
You!