Classes And Objects -

(1) Class - Class is nothing but a blueprint. → pattern that is been or followed.

(2) Object - Materialistic / real-world representation of class / blueprint.

In OOPs, class
variables → attributes Functions → methods.

OOPs.

(1) Namespace → segregation → functional style frames.

(2) OOPs.

```
class myclass:
    my_num = 1234
    def say_hello(name)
        print("Hello" + name)
```

class Car:

def launch(self, brand, name):

print("The brand is {}, and the name is {}".format(brand, name))

encapsulation

car1 = Car()

car1.launch("Tata", "nexon")

count

Student 555

count: increased

---

(2) class Car:

static attribute

def __init__(self, name, brand): → parameters

constructor

the intelligent method

self.model_name = name

self.model_brand = brand

Instance variable

current content object

def launch(self)

print(self.model_name, self.model_brand)

Private Variables — In Java - scope — outside the class.
public, default, protected.
private

In python, we don't have any such concept (

dunder methods - (special methods provided by python)

__<function-name>__ (dunder methods)

1. Two ways to represent class object __str__, __repr__
2. __str__ → __repr__ (always)
3. If __str__ is not present, then python compiler will search for __repr__

Inheritance -

1. classmethod.
2. break, continue.
3. decorator (generator)
4. recursion (style of programming)
5. deep copy/shallow
6. filter, reduce, map.

(1) Inheriting the properties from a parent class to a child class.

DRY - Don't Repeat Yourself.

```
class Phone:
    brand, model_name, price

class SmartPhone:
    ram_internal_memory_rear_camera.

class FlagshipPhone(Phone, SmartPhone):
    front_camera.
```

SmartPhone is a child of phone.

(1) Single inheritance - 1 parent - 1 child. (less).

(2) multiple inheritance - more than 1 parent, but 1 child. (very rarely). → in Java (not supported).

(3) Multilevel inheritance - 1 child is a parent of other class. (mostly used).

(4) Hybrid inheritance - combination of any on.

(5) Hierarchical inheritance. A single parent but more than 1 child.