

بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِيْمِ

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ROAD TO MACHINE LEARNING اِلٰی شَاءَ اللّٰهُ مَا شَاءَ

”اللّٰهُمَّ فَقِلْ سَنَامَلَنْ بَهِ مَكَلَنْ ہو جاتا ہے“

# PHASE 1 : COURSE 2

## OOP - PYTHON - CHAI AUR CODE

Class Car:

```
def __init__(self, brand, model):  
    self.brand = brand  
    self.model = model
```

```
def full_name(self):  
    return f'{self.brand} {self.model}'
```

Class Electric Car (car):

```
def __init__(self, brand, model, battery_size)  
    Super().__init__(brand, model)  
    self.battery_size = battery_size
```

- We never use self inside parameters.
- Super() is used to call method from parent class.
- f" returns one combined string → Tesla Model S
- simple (self.brand, self.model) → ("Tesla", "Model S")
- Methods are function inside class
- \_\_init\_\_ is special method in class called **Constructor**
- \_\_variable to make it private.
- Polymorphism is the process of having same method for different behaviour e.g (def fuel\_type)
- We can count that how many cars objects created by adding variable in Class and then +=1 inside constructor.

→ Static method start with `@ static method`  
before creating method.  
We don't write `(self)` because static method  
can directly accessible by class.  
@ → they are decorators.

→ Property decorator `@ property` uses when  
we want to call method without parenthesis  
just like an attribute.  
To control attribute access.

→ `isinstance(instance, Car)`  
`isinstance(instance, ElectricCar)`  
When we write this inside print() it gives  
True or False.

→ Multiple Inheritance is when we inherit  
properties of two or more parent class.

## Class and Instance Attributes

→ class. attr

obj. attr

If both have a attribute with  
same name then obj.attr > class.attr  
more priority

## Methods:

→ Methods are function that belongs to  
objects.

→ Class is a collection of two things  
attributes and methods.

→ When we create a function so self parameter  
is always inside function brackets () by  
default and we put it otherwise error.

## Static Methods

Don't use self parameter  
work at class level

class Student:

    @staticmethod      #decorator

↓

Extend behavior of  
function without permanent  
modification.

## → Four Pillars of OOPs :

- Abstraction
- Encapsulation
- Inheritance
- Polymorphism

→ del keyword used to delete properties or objects itself. (del s1.name) , (del s1)

## Private attributes and methods:

- used within the class and not accessible from outside the class
- Increase security , used when information is sensitive.
- use -- two underscores before attribute name to make it private.

## Inheritance:

- Child class uses methods of parent class and its purpose is to make code more short and dont make method every single time.

