# Python OOP Practice Questions

Instance Method, Class Method, Static Method

## Instance Method Questions

1. What is an instance method in Python? (Explain with a simple example.)

An instance method is a function defined inside a class that operates on the instance (object) of that class. It takes “self” as the first parameter which refers to the current object.

class Person:

def greet(self):

print("Hello!")

1. Write a class `Car` with an instance method `start\_engine` that prints "Engine started."

Class Car:

Def start\_engine(self):

Print(“Engine started”)

1. How do you call an instance method — with the class name or with the object? (Give example.)

You call an instance method with the object of the class, not the class name.

Class phone:

Def brand(self):

Print(“Samsung”)

Obj1 = brand()

Obj1.beep()

1. Create a class `Circle` that takes radius in `\_\_init\_\_` and has an instance method `area()` to calculate the area of the circle.

Class Circle

Def \_\_init\_\_(self ,radius )

Self.radius =radius

def area(self):

return 3.14\*radius\*radius

1. What will happen if you try to call an instance method without creating an object?

You will get a TypeError because the method needs a reference to an instance (the self parameter), which is missing if you don’t create an object.

## Class Method Questions

1. What is a class method? How is it different from an instance method? (Answer withexample.)

A class method is a method that operates on the class itself rather than the instance. It takes cls as the first argument. It is defined using the @classmethod decorator.

class Example:

count = 0

@classmethod

def show\_count(cls):

print(cls.count)

1. Write a class `Employee` with a class variable `company = "TechCorp"` and a class method `get\_company\_name()`.

Class Employee:

Company = “TechCorp”

@classmethod:

Def get\_company\_name(cls):

Return cls.Company

1. How do you define a class method? (Which decorator is used?)

A class method is defined using the @classmethod decorator. The first parameter should be cls.

1. Create a class `Counter` with a class variable `count` and a class method `increment()` that increases the count by 1.

Class Counter:

Count = 0

@classmethod

Def increment(cls):

cls. count+=1

## Static Method Questions

1. What is a static method in Python? (Explain with example.)

A static method does not take self or cls as the first parameter. It is used when some functionality is related to the class but doesn’t need class or instance data.

class Math:

@staticmethod

def add(a, b):

return a + b

1. Write a static method `is\_even(num)` inside a class `MathUtils` that returns `True` if the number is even, else `False`.

class MathUtils:

@staticmethod

def is\_even(num):

return num % 2 == 0

1. Which method type should you use when:  
   - You want to access/modify class variables — (Instance/Class/Static)?

A: class Method   
- You don’t need class or instance data — (Instance/Class/Static)?

A: class static