



# Computing Fundamentals using Python

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**SUBJECT CODE : UQ25CA151A**

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# Python Objects and Classes

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- An object is a fundamental building block of an object-oriented language
- In Python, everything is an object. From simple numbers to complex data structures.
- An object is a piece of data in memory that has attributes (data) and methods (behaviors).
- Object instances are created from classes, which serve as their blueprints.
- Python is object-oriented, meaning it focuses on objects and their interactions

# Python Objects

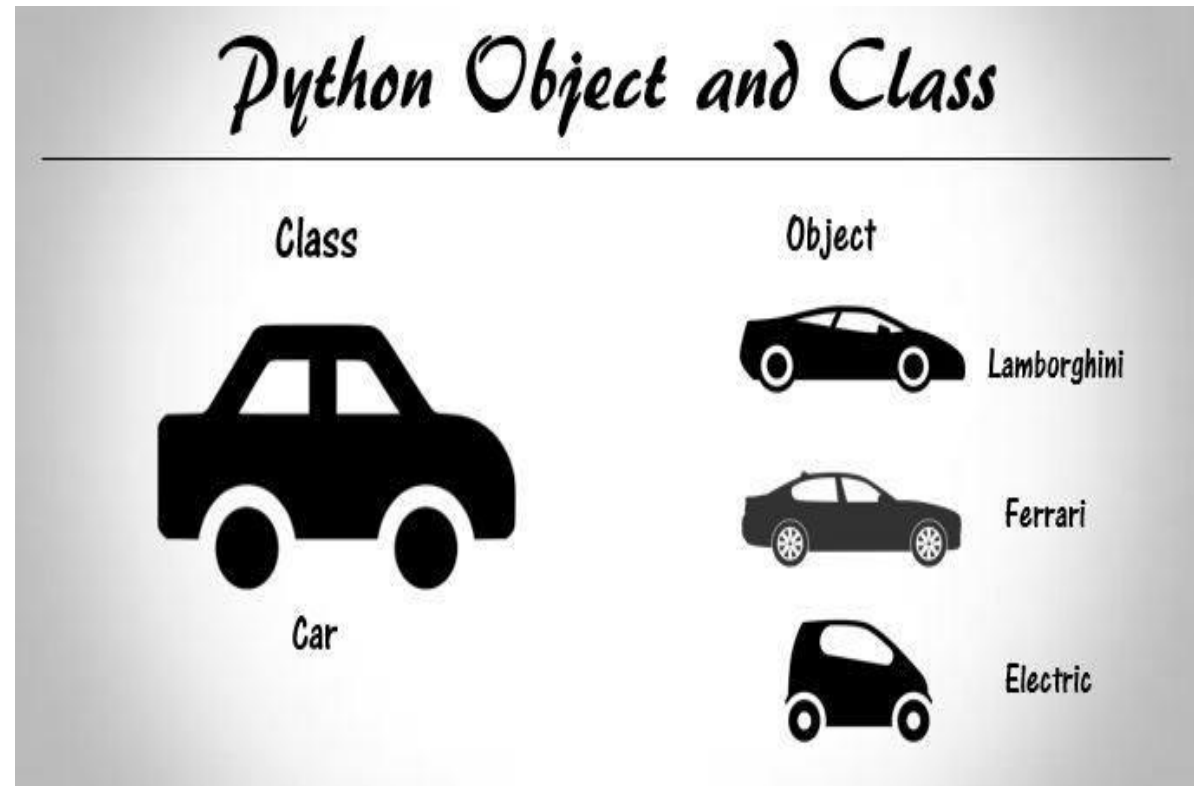
## Example

**Class** = Blueprint / Template

**Object** = Actual Thing created from the Blueprint

**Class:** Car Design (blueprint: wheels, engine, color)

**Object:** Lamborghini, Ferrari, Electric (real cars made from the blueprint)



# Python Objects

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## Real-Time Examples of Class and Object

### Students in a College

Class → Student

Attributes (data) → name, age, roll\_no, course

Methods (behavior) → study(),  
introduce(),  
write\_exam()

Objects → s1 = Student("Anita", 20, 101),  
s2 = Student("Rahul", 21, 102)

## Real-Time Examples of Class and Object

### Banking Application

Class → Account

Attributes → account\_number, holder\_name, balance

Methods → deposit(),  
              withdraw(),  
              check\_balance()

Objects →     acc1 = Account(123, "Meena", 5000),  
                  acc2 = Account(124, "Raj", 10000)

## Multiple Choice Questions

**1. In Python, a class is best described as:**

- A) A real-world object
- B) A function
- C) A blueprint for creating objects
- D) A built-in module

## Multiple Choice Questions

**2. Which statement about class and object is true?**

- A) A class is an instance of an object
- B) An object is a blueprint of a class
- C) A class is a blueprint, and an object is an instance of that class
- D) Classes and objects are the same

## Multiple Choice Questions

**3. If we create two objects from the same class, they:**

- A) Share the same memory for attributes
- B) Always overwrite each other's data
- C) Can have different values for attributes
- D) Cannot exist at the same time



# Python Objects

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## Scenario based Questions

1. In a school, many students are studying in different classes. Each student has a name and a roll number. For example, Anita is a student with roll number 101, and Rahul is another student with roll number 102.

**Question:** In this scenario, what will be the **Class**, and what will be the **Objects**?

## Scenario based Questions

2. In a bank, customers hold different bank accounts. Each bank account has an account number and a balance. For example, one account has the number 12345 with ₹5000 balance, and another account has the number 67890 with ₹10,000 balance.

**Question:** What is the **Class**, and what are the **Objects** here?

# Python Objects

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## Scenario based Questions

3. A company employs several workers. Each employee has a name and an employee ID. For example, one employee is Kiran with ID E101, and another is Sam with ID E102.

**Question:** Find the **Class** and the **Objects**.



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# THANK YOU

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