**Super( ) Python Report**

**1. How super() Handles Multiple Inheritance in Python**

The super() function is used to call methods from a parent class. In the case of multiple inheritance. When used in a class, super() doesn’t simply refer to the immediate parent — it refers to the next nearest class. This makes super() ensure that all classes in a hierarchy get a chance to execute their methods.

**Example: Multiple Inheritance**

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**Explanation:**

* The method resolution order for class D is D → B → C → A → object.
* Each super().show() call moves to the next class.
* This ensures that each class gets one opportunity to handle the method, without duplication or skipping.

**2. Same Method in Inheritance with Multiple Parents (Overriding):**

Suppose we have two parent classes: Human and Mammal, both define a method named eat(), but with different implementations. A child class Employee inherits from both.

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**Output:**

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**Explanation:**

Python uses Method Resolution Order (MRO) to decide which method to call. The order is based on the class definition:

So, when emp.eat() is called:

* Python checks Employee → Human → Mammal → object.
* Since Human has eat(), it is invoked, and Mammal's method is ignored unless explicitly called.

**Using super( ) in Inheritance with Multiple Parents (Overriding):**

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**Explanation:**

* Employee.eat() calls super().eat() → goes to Human.eat()
* Human.eat() also uses super().eat() → continues to Mammal.eat()
* This follows: Employee → Human → Mammal → object