**Que 1 : Method overloading: defining multiple methods with the same name but different parameters.**

# Simulating Method Overloading using default arguments

class MathOperations:

def add(self, a=0, b=0, c=0):

return a + b + c

# Create object

math\_obj = MathOperations()

print("Sum of 2 numbers:", math\_obj.add(5, 10)) # a=5, b=10, c=0

print("Sum of 3 numbers:", math\_obj.add(5, 10, 15)) # a=5, b=10, c=15

print("Sum of 1 number:", math\_obj.add(5)) # a=5, b=0, c=0

**Que 2 : Method overriding: redefining a parent class method in the child class.**

# Method Overriding Example

class Parent:

def show\_message(self):

print("This is the parent class message.")

class Child(Parent):

# Overriding the parent's method

def show\_message(self):

print("This is the child class message.")

# Create objects

p = Parent()

c = Child()

p.show\_message() # Calls Parent's version

c.show\_message() # Calls Child's version (overridden)