BRAC UNIVERSITY
Department of Computer Science and Engineering
CSE111: Programming Language II
Lab Final Examination (Reverse Engineering)

Duration - 30 minutes **SET B** **Fall 2022**

Create **Ordered** class inherited from **Linear** class. You must use Encapsulation, Inheritance and Polymorphism **as much as possible**. [**CO6**] (**10 Marks**)

Driver Code (With given class)

```
class Linear:
  def __init__(self, a, b):
    self.result = {0: 1}
    self.__a = 5
    self.__b = b
  def find(self):
    self.result[1] = self.geta() - self.getb()
    return self.result[1]
  def geta(self):
    return self.__a
  def getb(self):
    return self.__b
  def seta(self, a):
    self.__a = a
  def setb(self, b):
    self.__b = b
  def __str__(self):
    return 'Result: ' + str(self.result)

#Write your code here

a = Ordered(-1, -3, 3)
a.find()
print(a)
print("=============( 01 )=============")
b = Ordered(1, 2, 2)
b.find()
print(b)
print("=============( 02 )=============")
print(a + b)
print("=============( 03 )=============")
```

Output

```
Upto order:3
Result: {0: 1, 1: 2, 2: 4, 3: 8}
=============( 01 )=============
Upto order:2
Result: {0: 1, 1: -1, 2: 1}
=============( 02 )=============
Upto order:3
Result: {0: 2, 1: 1, 2: 5, 3: 8}
=============( 03 )=============
```

Explanation

```
b = Ordered(1, 2, 2)
Order 0 = (1 - 2)^0 = 1
Order 1 = (1 - 2)^1 = -1
Order 2 = (1 - 2)^2 = 1
So, the output = {0: 1, 1: -1, 2: 1}
and upto order 2
```