Inspiring Excellence

Course Title: Programming Language II

Course Code: CSE 111

Semester: Summer 2020

Topic: Object-Oriented Programming (Method Overriding)

Method overriding is a concept of object oriented programming that allows us to change the implementation of a function in the child class that is defined in the parent class. It is the ability of a child class to change the implementation of any method which is already provided by one of its parent class (ancestors).

Following conditions must be met for overriding a function:

- Inheritance should be there. Function overriding cannot be done within a class. We need to derive a child class from a parent class.
- The function that is redefined in the child class should have the same signature as in the parent class i.e. same number of parameters.

As we have already learned about the concept of Inheritance, we know that when a child class inherits a parent class it also get access to it public and protected (access modifiers in python) variables and methods.

Example:

```
# parent class

class Parent:
    # some random function
    def anything(self):
        print('Function defined in
parent class!')

# child class
class Child(Parent):
    # empty class definition
    pass


obj2 = Child()
obj2.anything()
```

Output:

Function defined in parent class!

Here, while the child class can access the parent class methods, it can also provide a new implementation to the parent class methods, which is called method overriding.

Example:

Here, in the following example a child class **Herbivorous** is created which will extend the class **Animal**. In the child class **Herbivorous** method **feed()** is overridden.

From the object of the class **Herbivorous** method **feed()** is called where the overridden version will be executed.

```
# parent class
class Animal:
  multicellular = True   # properties
  eukaryotic = True  # Eukaryotic means Cells with Nucleus

  def breathe(self):   # function
      print("I breathe oxygen.")

  def feed(self):   # function
      print("I eat food.")

# child class
class Herbivorous(Animal):

  def feed(self):  # function
      print("I eat only plants. I am vegetarian.")

herbi = Herbivorous()
herbi.feed()
# calling some other function
herbi.breathe()
```

Output:

I eat only plants. I am vegetarian.

I breathe oxygen.