CMPE 103

Module 7

METHOD OVERLOADING AND OVERRIDING

At the end of the module, you should be able to:

- Recall the concept of Polymorphism
- discuss the two types of Polymorphism
- discuss the concept of Method Overloading
- demonstrate application programs on Method Overloading
- discuss the concept of Method Overriding
- demonstrate application programs on Method overriding

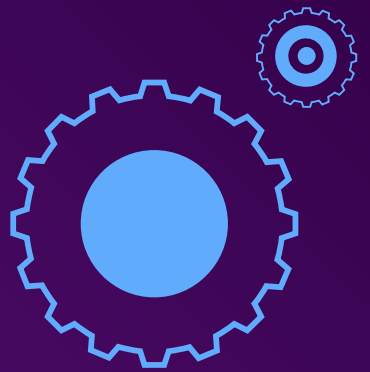
Polymorphism

The word "POLYMORPHISM" comes from two Greek words POLY and MORPHISM" which means many forms. It is important feature in Python that allows us to define methods in the child class with the same name as defined in their parent class.

There are two types of Polymorphism:

(1) Overloading

(2) Overriding



Method Overloading

- Occurs when two or more methods in one class have the same method name but different parameters.

```python
class Square:
    def __init__(self, side):
        self.side = side

    def calculate_area(self):
        return self.side * self.side

class Rectangle:
    def __init__(self, leng, wid):
        self.leng = leng
        self.wid = wid

    def calculate_area(self):
        return self.leng * self.wid

sqr1 = Square(5)
rec1 = Rectangle(5,7)

print("Area of Square: ", sqr1.calculate_area())
print("Area of Rectangle : ", rec1.calculate_area())
```

```
Area of Square:  25
Area of Rectangle :  35

Process finished with exit code 0
```

Method Overriding

- Means having two methods with the same method name and parameters (i.e., METHOD SIGNATURE). One of the methods is in parent class and the other is in the child class.

```python
class Polygon:
    def intro(self):
        print("Polygons are 2-dimensional shapes.")

    def sides(self):
        print("A polygon has 3 sides or more.")

class Quadrilateral:
    def sides(self):
        print("A quadrilateral has 4 sides.")

class Triangle:
    def sides(self):
        print("A triangle has 3 sides.")

poly1 = Polygon()
quad1 = Quadrilateral()
tri1 = Triangle()

poly1.intro()
poly1.sides()
```

What do you think the output of this program?

Thanks!

Do you have any questions?

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