

Object Oriented Programming Overloading and Overriding



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1 Practice

```
1. public class MyMultiplication {
    void multiplication(int a, int b) {
        System.out.println(a * b);
    }

    void multiplication(int a, int b, int c) {
        System.out.println(a * b * c);
    }

    public static void main(String[] args) {
        MyMultiplication obj = new MyMultiplication();
        obj.multiplication(25, 43);
        obj.multiplication(34, 23, 56);
    }
}
```

From the source code above, which one is the overloading?

The overloading can be seen at the second method where we declare a method with the same name but with different number of parameters.

2. If there are any overloading, how many different parameters are there?

There are two different parameters. The first method having two parameters and the second method having three parameters.

```
3. public class MyMultiplication {
    void multiplication(int a, int b) {
        System.out.println(a * b);
    }

    void multiplication(float a, float b) {
        System.out.println(a * b);
    }

    public static void main(String[] args) {
        MyMultiplication obj = new MyMultiplication();
        obj.multiplication(25, 43);
        obj.multiplication(34.56, 23.7);
    }
}
```

From the source code above, which one is the overloading?

The overloading can be seen at the second method where we declare a method with the same name but with different data type of parameters.

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4. If there are any overloading, how many different parameters are there?

There are two different parameters. The first method having two integer parameters and the second method having two float parameters.

```
5. class Fish {
    public void swim() {
        System.out.println("Fish can swim");
    }
}

class Piranha extends Fish {
    public void swim() {
        System.out.println("Piranha can eat meat");
    }
}

public class Main {
    public static void main(String[] args) {
        Fish fish = new Fish();
        Piranha piranha = new Piranha();
        fish.swim();
        piranha.swim();
    }
}
```

From the source code above, which one is the overriding?

We override on the child class which is the `Piranha` class.

6. Explain if the above source code contains overriding!

The above source code contains overriding because we override the `swim` method from the parent class which is the `Fish` class gets overridden by the child class which is the `Piranha` class.

2 Task

```
1. public class Triangle {
    int angle;

    public Triangle(int angle) {
        this.angle = angle;
    }

    public int angleTotal(int angle) {
        return 180 - angle;
    }

    public int angleTotal(int angleA, int angleB) {
        return 180 - (angleA + angleB);
    }

    public int parameter(int sideA, int sideB, int sideC) {
        return sideA + sideB + sideC;
    }

    public double parameter(int sideA, int sideB) {
        int sideC = (int) Math.sqrt(Math.pow(sideA, 2) + Math.pow(sideB, 2));
        return sideA + sideB + sideC;
    }
}

2. public class Human {
    public void breath() {
        System.out.println("Human can breath");
    }

    public void eat() {
        System.out.println("Human can eat");
    }
}

public class Student extends Human {
    public void sleep() {
        System.out.println("Student can sleep");
    }
}

public class Lecturer extends Human {
    public void workOvertime() {
```

```
        System.out.println("Lecturer can work overtime");  
    }  
}
```