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DATE – 10 Oct 2021

BRANCH – BTECH CSE

SEC = 13 A

UID -20BCS2761

SUB- JAVA Worksheet

1. Aim/Overview of the practical:

Write a program to differentiate between method overloading and method overriding.

Method Overloading in Java

If a class has multiple methods having same name but different in parameters, it is known as **Method Overloading**.

Code in Text –

```
// method overloading in Java.
package com.company;
public class pra {

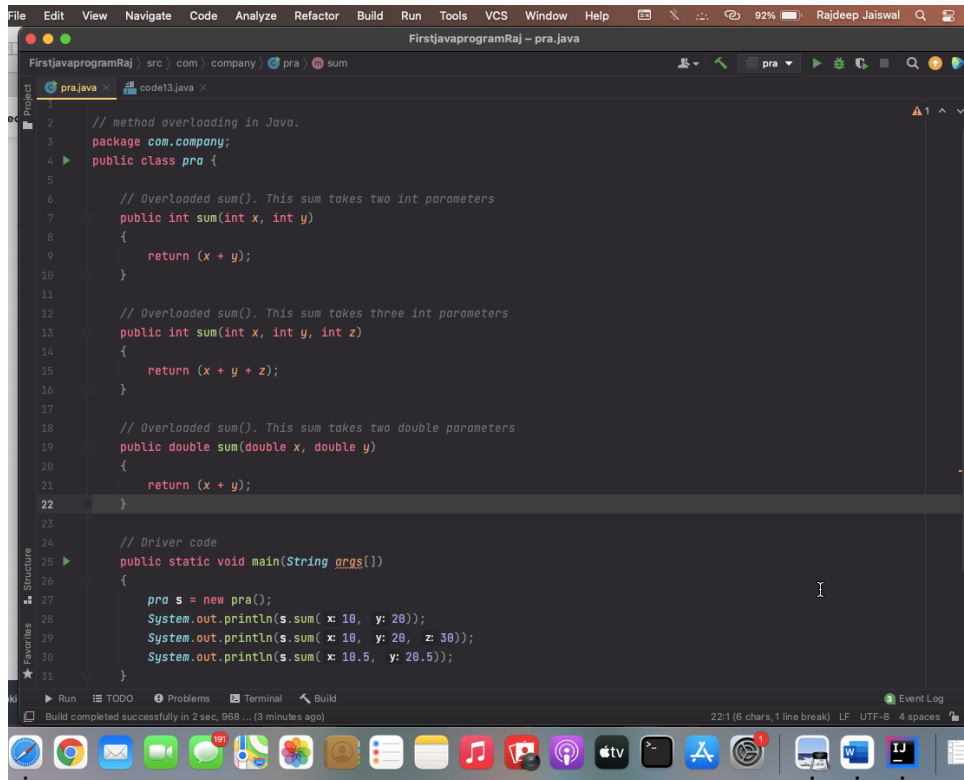
    // Overloaded sum(). This sum takes two int parameters
    public int sum(int x, int y)
    {
        return (x + y);
    }

    // Overloaded sum(). This sum takes three int parameters
    public int sum(int x, int y, int z)
    {
        return (x + y + z);
    }

    // Overloaded sum(). This sum takes two double parameters
    public double sum(double x, double y)
    {
        return (x + y);
    }

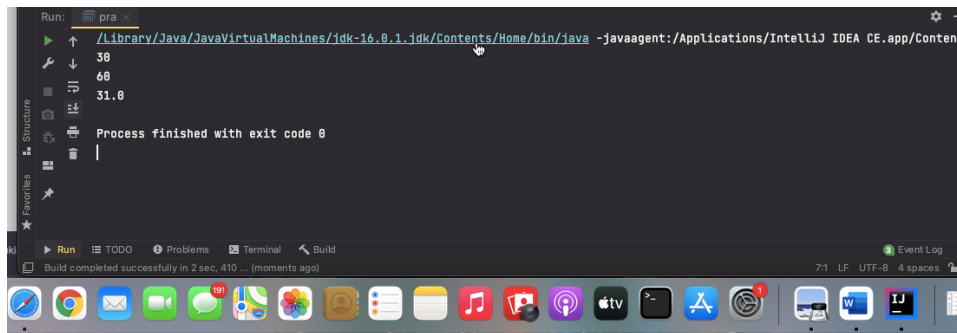
    // Driver code
    public static void main(String args[])
    {
        pra s = new pra();
        System.out.println(s.sum(10, 20));
        System.out.println(s.sum(10, 20, 30));
        System.out.println(s.sum(10.5, 20.5));
    }
}
```

Code in Compiler –



```
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help 92% Rajdeep Jaiswal
FirstJavaprogramRaj - pra.java
FirstJavaprogramRaj | src | com | company | pra | sum
pra.java | code13.java
2 // method overloading in Java.
3 package com.company;
4 public class pra {
5
6     // Overloaded sum(). This sum takes two int parameters
7     public int sum(int x, int y)
8     {
9         return (x + y);
10    }
11
12    // Overloaded sum(). This sum takes three int parameters
13    public int sum(int x, int y, int z)
14    {
15        return (x + y + z);
16    }
17
18    // Overloaded sum(). This sum takes two double parameters
19    public double sum(double x, double y)
20    {
21        return (x + y);
22    }
23
24    // Driver code
25    public static void main(String args[])
26    {
27        pra s = new pra();
28        System.out.println(s.sum(x: 10, y: 20));
29        System.out.println(s.sum(x: 10, y: 20, z: 30));
30        System.out.println(s.sum(x: 10.5, y: 20.5));
31    }
}
Run TODO Problems Terminal Build Event Log
Build completed successfully in 2 sec, 968 ... (3 minutes ago)
22:1 (6 chars, 1 line break) LF UTF-8 4 spaces
```

OUTPUT –



```
Run: pra x
/Library/Java/JavaVirtualMachines/jdk-16.0.1.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA CE.app/Content
30
60
31.0
Process finished with exit code 0
Run TODO Problems Terminal Build Event Log
Build completed successfully in 2 sec, 410 ... (moments ago)
7:1 LF UTF-8 4 spaces
```

Method Overriding in Java

If subclass (child class) has the same method as declared in the parent class, it is known as **method overriding in Java**.

Code in text –

```
// method overloading in Java.
package com.company;
//Creating a parent class.
class Vehicle{
    //defining a method
    void run(){System.out.println("Vehicle is running");}
}
//Creating a child class
class Bike2 extends Vehicle{
    //defining the same method as in the parent class
    void run(){System.out.println("Bike is running safely");}

    public static void main(String args[]){
        Bike2 obj = new Bike2();//creating object
        obj.run();//calling method
        Vehicle obj2 = new Vehicle();
        obj2.run();
    }
}
```

Code in Compiler -

```
FirstjavaprogramRaj - pra.java
FirstjavaprogramRaj | src | com | company | pra.java | Bike2 | main
pra.java | code13.java
1
2 // method overloading in Java.
3 package com.company;
4 //Creating a parent class.
5 class Vehicle{
6 //defining a method
7 void run(){System.out.println("Vehicle is running");}
8 }
9 //Creating a child class
10 class Bike2 extends Vehicle{
11 //defining the same method as in the parent class
12 void run(){System.out.println("Bike is running safely");}
13 }
14 public static void main(String args[]){
15     Bike2 obj = new Bike2();//creating object
16     obj.run();//calling method
17     Vehicle obj2 = new Vehicle();
18     obj2.run();
19 }
20 }
```

OUTPUT -

```
Run: Bike2
/Library/Java/JavaVirtualMachines/jdk-16.0.1.jdk/Contents/Home/bin/java -javaagent:/Applications/IntelliJ IDEA CE.app/Contents
Bike is running safely
Vehicle is running
Process finished with exit code 0
Run | TODO | Problems | Terminal | Build | Event Log
All files are up-to-d... (moments ago) 20:2 (544 chars, 19 line breaks) LF UTF-8 4 spaces
```

Learning outcomes (What I have learnt):

- 1.
- 2.
- 3.
- 4.
- 5.

I

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			