Object Oriented Programming Lab – 05

Course Code: CSE215

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Problem 1: Inheritance

Part 1:

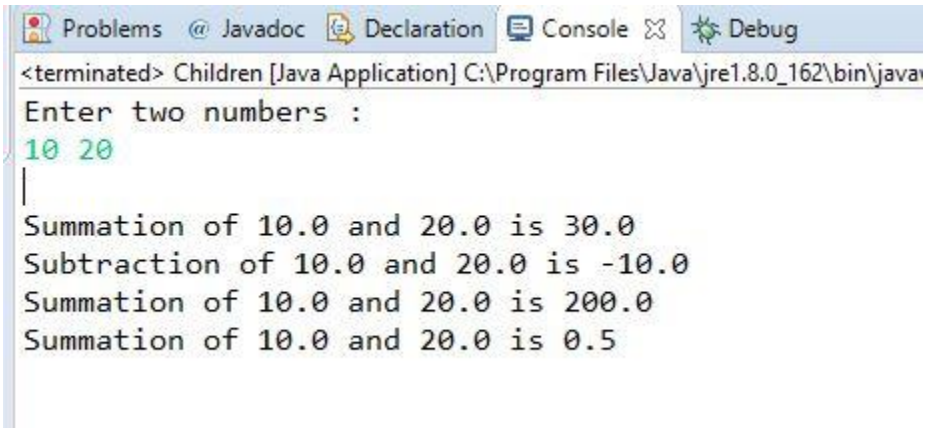
```
package com.example.hridoy;

public class Base {

	public void addNumbers(double number1, double number2) {
		double addResult = number1 + number2;
		System.out.println("\nSummation of " + number1 + " and " +
number2 + " is " + addResult);
	}

	public void subNumbers(double number1, double number2) {
		double subResult = number1 - number2;
		System.out.println("Subtraction of " + number1 + " and " +
number2 + " is " + subResult);
	}

	public void mulNumbers(double number1, double number2) {
		double mulResult = number1 * number2;
		System.out.println("Summation of " + number1 + " and " +
number2 + " is " + mulResult);
	}

	public void divNumbers(double number1, double number2) {
		double divResult = number1 / number2;
		System.out.println("Summation of " + number1 + " and " +
number2 + " is " + divResult);
	}

}
```

Part 2:

```
package com.example.hridoy;

import java.util.Scanner;

public class Children extends Base {

	public static void main(String[] args) {
```

```
            // TODO Auto-generated method stub

            Children test1 = new Children();

            Scanner input = new Scanner(System.in);

            System.out.println("Enter two numbers : ");
            double num1 = input.nextDouble();
            double num2 = input.nextDouble();

            test1.addNumbers(num1, num2);
            test1.subNumbers(num1, num2);
            test1.mulNumbers(num1, num2);
            test1.divNumbers(num1, num2);


      }

}
```

Output:



Problem 2.1: Overloading

Part 1:

```java
package com.example.hasan;

public class OverLoad {

	public void demo(int a) {
		System.out.println("a : " + a);
	}

	public void demo(int a, int b) {
		System.out.println("a and b  " + a + " : " + b);
	}

	public double demo(double a) {
		System.out.println("a : " + a);
		return a*a;
	}

}
```

Part 2:

```java
package com.example.hasan;

public class MethodToOverloading {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		OverLoad obj = new OverLoad();
		obj.demo(50);
		obj.demo(50, 60);
		double result = obj.demo(50.78);

		System.out.println("O/P : " + result);


	}
```

```
}
```

Output:

Problem 2.2: Overriding

Part 1:

```
package com.example.hasan;

public class Base {

	public void methodToOverride() {
		System.out.println("This is a base class!");
	}

}
```

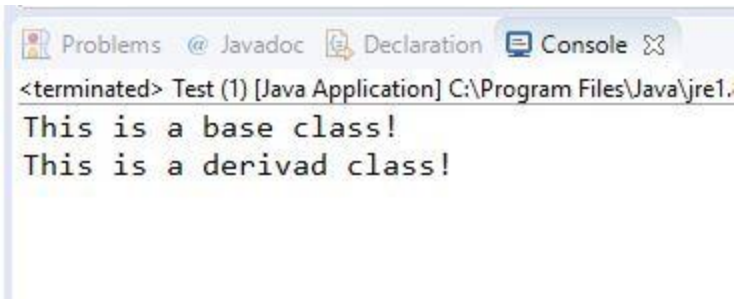
Part 2:

```java
package com.example.hasan;

public class Derived extends Base {

	public void methodToOverride() {
		System.out.println("This is a derivad class!");
	}


}
```

Part 3:

```java
package com.example.hasan;

public class Test {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		Base obj1 = new Base();
		Base obj2 = new Derived();

		obj1.methodToOverride();
		obj2.methodToOverride();

	}

}
```

Output:



Problem 3: Association

Part 1:

```
package com.example.hridoy;

public class Bank {

      private String name;

    Bank(String name)
    {
        this.name = name;
    }

    public String getBankName()
    {
        return this.name;
    }

}
```

Part 2:

```
package com.example.hridoy;

public class Employee {

      private String name;

    Employee(String name)
    {
        this.name = name;
```

```
    }

    public String getEmployeeName()
    {
        return this.name;
    }

}
```

Part 3:

```
package com.example.hridoy;

public class Association {

      public static void main(String[] args) {
            // TODO Auto-generated method stub

             Bank bank = new Bank("Dutch Bangla");
              Employee emp = new Employee("Hridoy");

              System.out.println(emp.getEmployeeName() +
                     " is employee of " + bank.getBankName() + ".");

      }

}
```

Output: