Encapsulation assignment

1. What is Encapsulation in Java? Why is it called Data hiding?

Answer: Binding data and corresponding methods in a single unit are known as Encapsulation.

As in encapsulation, the data in a class is hidden from other classes using the data hiding concept which is achieved by making the members or methods of a class private, and the class is exposed to the end-user or the world without providing any details behind implementation using the abstraction concept, so it is also known as a combination of data-hiding and abstraction.

1. What are the important features of Encapsulation?

Answer: The important features of Encapsulation are :

1. We can achieve security .
2. Increases flexibility.
3. Increases reusability.
4. Enhancement becomes easy.
5. What are getter and setter methods in Java Explain with an example.

Answer: Setter method are used to set the value to the instance variable of the class.

Getter method are used to get the value from the instance variable of the class.

Example:

public class Q4 {

    int num1;

    int num2;

    // setter method

    void setValue() {

        System.out.println("We are in setter method");

        num1 = 10;

        num2 = 20;

    }

    // getter method

    int getSum() {

        System.out.println("we are in getter method");

        int sum = num1 + num2;

        return sum;

    }

    public static void main(String[] args) {

        Q4 obj = new Q4();

        obj.setValue();

        int r = obj.getSum();

        System.out.println("Sum is :" + r);

    }

}

1. What is the use of this keyword explain with an example.

Answer: The this keyword refers to the object in a method or constructor.

Example:

class Student {

    private Integer id;

    private String name;

    private String address;

    Student(String name, Integer id, String address) {

        this.name = name;   //this.name=name;

        this.id = id;       //this.id=id;

        this.address = address;//this.address=address;

    }

    void display() {

        System.out.println("Name :" + name);

        System.out.println("Id :" + id);

        System.out.println("Address :" + address);

    }

}

class Q1 {

    public static void main(String[] args) {

        Student obj = new Student("sachin", 1, "ranchi");

        obj.display();

    }

}

// shadowing problem

1. What is the advantage of Encapsulation?

Answer: The advantage of Encapsulation are :

1. We can achieve security .
2. Increases flexibility.
3. Increases reusability.
4. Enhancement becomes easy.
5. How to achieve encapsulation in Java? Give an example.

Answer: Encapsulation java can be achieved by following these steps:

1. Declaring the variables of a class as private.
2. Providing public setter and getter methods to modify and view the variable values.

Example:

class Student {

    private Integer id;

    private String name;

    private String address;

    Student(String name, Integer id, String address) {

        this.name = name;   //this.name=name;

        this.id = id;       //this.id=id;

        this.address = address;//this.address=address;

    }

    void display() {

        System.out.println("Name :" + name);

        System.out.println("Id :" + id);

        System.out.println("Address :" + address);

    }

}

class Q1 {

    public static void main(String[] args) {

        Student obj = new Student("sachin", 1, "ranchi");

        obj.display();

    }

}

// shadowing problem