

day-020-encapsulation-assignment

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

Encapsulation in Java refers to integrating data (variables) and code (methods) into a single unit. In encapsulation, a class's variables are hidden from other classes and can only be accessed by the methods of the class in which they are found.

2. What are the important features of Encapsulation?

The following are the significant benefits of encapsulation. A class can have complete control over its data members and data methods. The class will maintain its data members and methods as read-only. Data hiding prevents the user from the complex implementations in the code.

3. What are getter and setter methods in Java Explain with an example

Getter returns the value (accessors), it returns the value of data type int, String, double, float, etc. For the program's convenience, getter starts with the word "get" followed by the variable name. While Setter sets or updates the value (mutators). It sets the value for any variable used in a class's programs.

Question_03.java

```
class GetSet {  
  
    private String name;  
  
    public String getName() {  
        return name;  
    }  
  
    public void setName(String N) {  
        this.name = N;  
    }  
}  
  
class Question_03 {  
  
    public static void main(String[] args) {  
        GetSet obj = new GetSet();  
        obj.setName("Rahul Dutta");  
        System.out.println(obj.getName());  
    }  
}
```

Output :

Rahul Dutta

4. What is the use Of this keyword explain With an example

The this keyword refers to the current object in a method or constructor. The most common use of the this keyword is to eliminate the confusion between class attributes and parameters with the same name (because a class attribute is shadowed by a method or constructor parameter)

Question_04.java

```
public class Question_04 {
    int x;
    public void main(int x) {
        this.x = x;
    }

    public static void main(String[] args) {
        Question_04 myObj = new Question_04();
        myObj.main(5);
        System.out.println("Value of x = " + myObj.x);
    }
}
```

Output :

Value of x = 5

5. What is the advantage of Encapsulation?

Encapsulation is a way to restrict the direct access to some components of an object, so users cannot access state values for all of the variables of a particular object. Encapsulation can be used to hide both data members and data functions or methods associated with an instantiated class or object.

6. How to achieve encapsulation in Java? Give an example.

Encapsulation is one of the key features of object-oriented programming. Encapsulation refers to the bundling of fields and methods inside a single class.

It prevents outer classes from accessing and changing fields and methods of a class. This also helps to achieve data hiding.

Question_06.java

```
class Area {

    int length;
    int breadth;

    Area(int length, int breadth) {
        this.length = length;
    }
}
```

```
        this.breadth = breadth;
    }

    public void getArea() {
        int area = length * breadth;
        System.out.println("Area: " + area);
    }
}

class Question_06 {

    public static void main(String[] args) {
        Area rectangle = new Area(5, 6);
        rectangle.getArea();
    }
}
```

Output :

Area: 30

In the above example, we have created a class named Area. The main purpose of this class is to calculate the area.

To calculate an area, we need two variables: length and breadth and a method: getArea(). Hence, we bundled these fields and methods inside a single class.

Here, the fields and methods can be accessed from other classes as well. Hence, this is not data hiding.

This is only encapsulation. We are just keeping similar codes together.