**Encapsulation**

**Assignments Questions**

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

Binding of data and corresponding methods into a single unit is called Encapsulation.

It is called data hiding because the data inside is not exposed directly to the outside world.

To access these data we have to define setters and getters inside the class.

**2. What are the important features of Encapsulation?**

The Important features of Encapsulation are:

* **Data Hiding**
* **Abstraction**

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

**Setter methods** are used to set the value to the instance variables of the class.

**Getter methods** are used to get the value from the instance variables of the class.

class Student{

    private int age;

    private String name;

    public int getAge() {

        return age;

    }

    public void setAge(int age) {

        this.age = age;

    }

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

}

public class encapsulation2 {

    public static void main(String args[]){

    Student s=new Student();

    s.setAge(90);

    s.setName("AK4SH");

    // s.show();

    System.out.println(s.getAge() + " " + s.getName());

    }

}

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

This keyword refer to current object in metod or constructor. I learnt that this keyword was used to remove the shadowing problem.

class Student{

    private int age;

    private String name;

    private int[] marks=new int[5];

    public int getAge() {

        return age;

    }

    public void setAge(int age) {

        this.age = age;

    }

    public String getName() {

        return name;

    }

    public void setName(String name) {

        this.name = name;

    }

    public int[] getMarks() {

        return marks;

    }

    public void setMarks(int[] marks) {

        for(int i=0;i<=marks.length-1;i++){

            this.marks[i]=marks[i];

        }

    }

}

public class encapsulationAssignment {

    public static void main(String args[]){

        Student s= new Student();

        s.setAge(15);

        s.setName("Ria");

        s.setMarks(new int[]{98,87,67,89,99});

        System.out.print("Student name is : "+ s.getName() +" , Age is : "+ s.getAge() + " , Marks is : ");

        int arrtemp[]=new int[5];

        arrtemp=s.getMarks();

        for(int i=0;i<=arrtemp.length-1;i++){

            System.out.print (arrtemp[i] + " ");

        }

    }

}

**5. What is the advantage Of Encapsulation?**

**The advantages of encapsulation are:-**

* We can achieve security.
* Enhancement becomes easy.
* Maintainability and modularisation becomes easy.
* It provides flexibility to the user to use the system very easily.

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

class Student{

    // int age;

    // String name;

    private int age;

    private String name; // private chiz class se bahar access nhi hota

    public void SetData(){ //public chiz class ke bahar access kr skte hai

        age=19;

        name="Rahul";

    }

    public void Show(){

        System.out.println(name + " " + age);

    }

}

public class encapsulationP{

    public static void main(String args[]){

        Student s=new Student();

        // s.age=18;

        // s.name="Akash";

        s.SetData();

        s.Show();

    }

}