

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

Ans: Binding of data and corresponding methods into a single unit is called “Encapsulation”. If any java class follows data hiding and abstraction then such class is referred as “Encapsulated class”.

Encapsulation = Data Hiding + abstraction.

Every data member inside the class should be declared as private, and to access this private data we need to have setter and getter methods.

2) What are the important features of Encapsulation?

Ans: a. We can achieve security.

b. Enhancement becomes easy.

c. Maintainability and modularisation becomes easy.

d. It provides flexibility to the user to use the system very easily.

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

Ans: 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.

Example Program

class Student

```
{
    private String name;
    private Integer id;
    private String address;

    //setters
    public void setName(String name)
    {
        this.name =name;
    }
    public void setId(Integer id)
    {
        this.id =id;
    }
    public void setAddress(String address)
    {
        this.address = address;
    }

    //getters
    public Integer getId()
    {
        return id;
    }
    public String getName()
    {
        return name;
    }
}
```

```

        public String getAddress()
        {
            return address;
        }
    }
    public class Demo
    {
        public static void main(String[] args)
        {
            Student std =new Student();
            std.setId(10);
            std.setName("sachin");
            std.setAddress("MI");

            System.out.println("Id is :: "+std.getId());
            System.out.println("Name is :: "+std.getName());
            System.out.println("Address is :: "+std.getAddress());
        }
    }

```

OUTPUT:

Name is :: sachin

Id is :: 10

Address is :: MI

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

Ans: Inside the method the JVM will always give preference only for local variables, this problem is termed as "shadowing".

To resolve this problem we need to use, "this" keyword.

Note: this keyword would always point to the current object, and this variable would hold the address of the active object present in the heap memory.

Example Program:

Class Student

```

{
    private String name;
    private Integer id;
    private String address;

    Student(String name,Integer id,String address)
    {
        this.name = name;
        this.id =id;
        this.address = address;
    }
    Public void display()
    {
        System.out.println("Name is :: "+name);
        System.out.println("Id is :: "+id);
    }
}

```

```

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

class Demo
{
    public static void main(String[] args)
    {
        Student std =new Student("sachin",10,"MI");
        std.display();
    }
}

```

OUTPUT:

Name is :: sachin

Id is :: 10

Address is :: MI

5) What is the advantage of Encapsulation?

Ans: a. We can achieve security.

b. Enhancement becomes easy.

c. Maintainability and modularisation becomes easy.

d. It provides flexibility to the user to use the system very easily.

6) How to achieve Encapsulation in Java? Give an example.

Ans : Encapsulation in Java can be achieved by:

- Declaring the variables of a class as private.
 - Providing public setter and getter methods to modify and view the variables values.
- for example, a capsule which is mixed with several medicines.