ASSIGNMENT
ENCAPSULATION

Q.1 What is Encapsulation in Java? Why is it called data hiding?
Ans. Encapsulation is the process of binding data and methods in a single unit.

Encapsulation = data hiding + abstraction

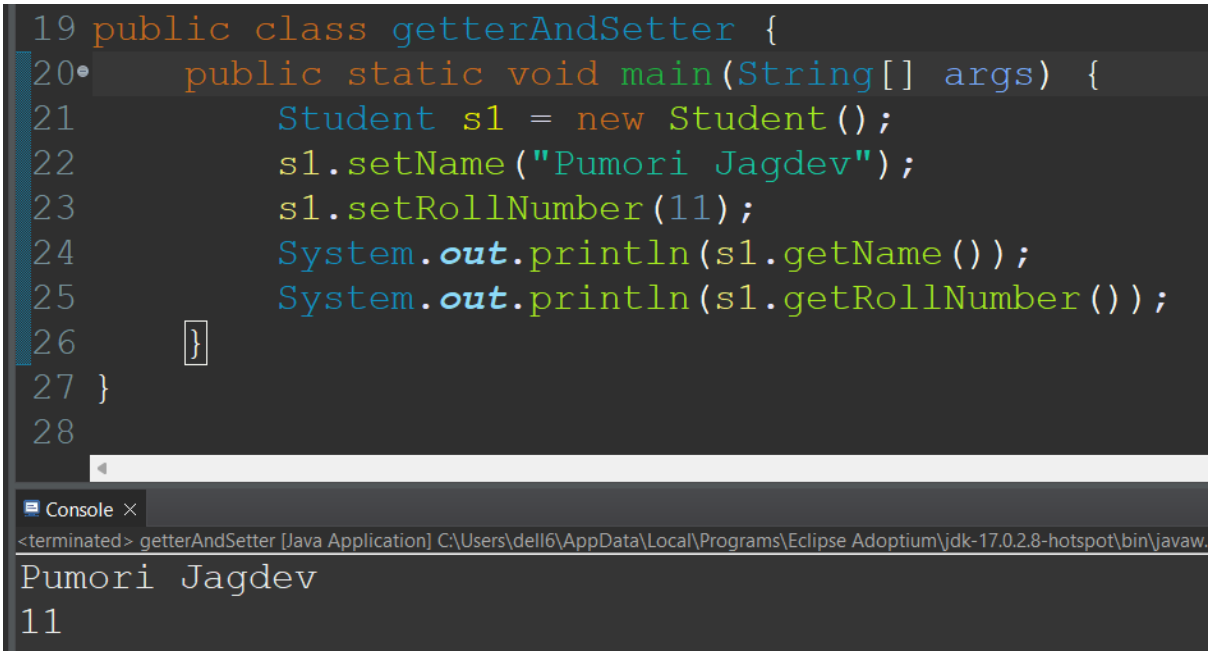
It is called data hiding because it prevents the outside world from accessing the data directly and provides controlled access.

Q.2 What are the important features of Encapsulation?
Ans.

- It prevents the outside world from accessing the data.
- It helps to provide controlled access.

Q.3 What are getters and setters methods in java? Explain with an example.
Ans. Getter methods are used to get the value of an instance variable of a class.
Setter methods are used to set the value of an instance variable of a class.
Example:-

```java
class Student{
    private String name;
    private int rollNumber;
    // setter
    public void setName(String name) {
        this.name=name;
    }
    public void setRollNumber(int rollNumber) {
        this.rollNumber=rollNumber;
    }
    // getter
    public String getName() {
        return name;
    }
    public int getRollNumber() {
        return rollNumber;
    }
}
```



Q.4 What is the use of this keyword? Explain with an example.
Ans. “this” keyword is used to solve the shadowing problem. If the local variable and instance variable have the same name then it will lead to name clash and JVM gives preference to local variable.So this problem can be solved using this keyword.
Example:-

```
public void setName(String name) {
        name=name;    // clash
    }
    public void setRollNumber(int rollNumber) {
        rollNumber=rollNumber;   // clash
    }
```

Q.5 What is the advantage of Encapsulation?
Ans. Advantages of Encapsulation:-

- Provides security.
- Easy to maintain.
- Flexibility to users.

Q.6 How to achieve Encapsulation in Java? Explain with an example.
Ans. Encapsulation can be achieved by keeping the members private.By doing this, outside people can not access the data directly.
Example:-

```java
class Student{
    private String name;
    private int rollNumber;
    // setter
    public void setName(String name) {
        this.name=name;
    }
    public void setRollNumber(int rollNumber) {
        this.rollNumber=rollNumber;
    }
    // getter
    public String getName() {
        return name;
    }
    public int getRollNumber() {
        return rollNumber;
    }
}
```

```java
public class getterAndSetter {
    public static void main(String[] args) {
        Student s1 = new Student();
        s1.setName("Pumori Jagdev");
        s1.setRollNumber(11);
        System.out.println(s1.getName());
        System.out.println(s1.getRollNumber());
    }
}
```