Encapsulation

1.What is encapsulation in Java?Why is it called Data Hiding?

Encapsulation in Java is the process by which data (variables) and the code that acts upon them (methods) are integrated as a single unit. By encapsulating a class's variables, other classes cannot access them, and only the methods of the class can access them.
Data hiding is an object-oriented programming (OOP) technique specifically used to hide internal object details (i.e., data members). Data hiding guarantees exclusive data access to class members only and protects and maintains object integrity by preventing intended or unintended changes and intrusions.

2.what are the important feature of encapsulation

One of the defining characteristics of encapsulation is that it limits access to a class's attribute data and implementation details. To enforce these limits, OOP languages, such as Java, C++ and C#, use access modifiers that specify the type of access permitted at the class and member levels

3.what are Getter and setter methods in Java? explain with an example.

.Getters and setters are used to protect your data, particularly when creating classes. For each instance variable, a getter method returns its value while a setter method sets or updates its value. Given this, getters and setters are also known as accessors and mutators, respectively.
By convention, getters start with the word "get" and setters with the word "set", followed by a variable name. In both cases the first letter of the variable's name is capitalised:

```
public class Vehicle {
  private String colour;
    // Getter
  public String getColour() {
    return colour;
  }
   // Setter
  public void setColour(String c) {
    this.colour = c;
  }
}
```

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

The most common use of 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). If you omit the keyword in the example above, the output would be "0" instead of "5".

5.what is the advantages of encapsulation

These include: Hiding data: Users will have no idea how classes are being implemented or stored. All that users will know is that values are being passed and initialised. More flexibility: Enables you to set variables as red or write-only.

6.how to achieve encapsulation in java? give an example

.Declaring the variables of a class as private.
Providing public setter and getter methods to modify and view the variables values.
Simple Example of Encapsulation in Java

```
//A Java class which is a fully encapsulated class.
//It has a private data member and getter and setter methods.
package com.javatpoint;
public class Student{
//private data member.
private String name;
//getter method for name.
public String getName(){
```