

OOPS CODES IN JAVA:

Encapsulation code:

Encapsulation Implementation

```
class Person {
    private String name; // private = restricted access

    // Getter
    public String getName() {
        return name;
    }

    // Setter
    public void setName(String newName) {
        this.name = newName;
    }
}

public class Main {
    public static void main(String[] args) {
        Person p1 = new Person();
        p1.setName("Qw SCAPE"); // Set the value of the name variable to "Qw SCAPE"
        System.out.println(p1.getName());
    }
}
```

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Inheritance code:

Inheritance Implementation

```
J Main.java > Main
1 class Animal {
2     void eat() {
3         System.out.println(x:"eating...");
4     }
5 }
6
7
8 class Cat extends Animal {
9     void meow() {
10        System.out.println(x:"meowing...");
11    }
12 }
13
14 public class Main {
15     Run | Debug
16     public static void main(String args[]) {
17         Cat c = new Cat();
18         c.meow();
19         c.eat();
20     }
21 }
```

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POLYMORPHISM CODE:

Method Overloading code:

Method Overloading Implementation

```
J Main.java > Adder > main(String[])
1 class Adder{
2
3     void sum(int a,int b){
4         System.out.println(a+b);
5     }
6     void sum(int a,int b,int c){
7         System.out.println(a+b+c);
8     }
9
10    Run | Debug
11    public static void main(String args[]) {
12        Adder obj=new Adder();
13        obj.sum(a:20,b:20);
14        obj.sum(a:20,b:20,c:20);
15    }
16 }
```


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Method overriding code:

Method Overriding Implementation

```
J Main.java > son > seenAGirl()
1  class Father{
2
3      public void property (){
4          System.out.println(x:"cash+land+gold");
5      }
6      public void seenAGirl (){
7          System.out.println(x:"pink");
8      }
9  }
10 class son extends Father{
11     public void seenAGirl(){
12         System.out.println(x:"Jhanvi Kapoor");
13     }
14 }
15 public class Main {
16     Run | Debug
17     public static void main(String args[]){
18         son Ankit = new son();
19         Ankit.seenAGirl();
20     }
21 }
```



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Abstraction code:

```
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Main.java
8  abstract class Animal {
9      abstract void makeSound();
10
11     void eat() {
12         System.out.println("This animal eats food.");
13     }
14 }
15 class Dog extends Animal {
16     @Override
17     void makeSound() {
18         System.out.println("Woof! Woof!");
19     }
20 }
21
22 public class Main {
23     public static void main(String[] args) {
24         Animal myDog = new Dog();
25         myDog.makeSound();
26         myDog.eat();
27     }
28 }
29
```

input

Woof! Woof!
This animal eats food.

Interface code:

Interface Implementation

```
1 interface Drawable {
2     void draw();
3 }
4
5 class Rectangle implements Drawable {
6     public void draw() {
7         System.out.println(x:"drawing rectangle");
8     }
9 }
10
11 class Circle implements Drawable {
12     public void draw() {
13         System.out.println(x:"drawing circle");
14     }
15 }
16
17 class TestInterface1 {
18     public static void main(String args[]) {
19         Drawable d = new Circle();
20         d.draw();
21     }
22 }
```

draw() {
3

