**B.GAYAThRI- CSE**

**1) Override**

class Animal {

public void makeSound()

{

System.out.println("The animal makes a sound."); }

}

class Dog extends Animal

{

public void makeSound()

{

System.out.println("The dog barks");

}

}

class Cat extends Animal

{

public void makeSound()

{

System.out.println("The cat meows");

}

}

public class Main{

public static void main(String[] args)

{

Animal obj= new Animal();

Dog obj1 = new Dog();

Cat obj2 = new Cat();

System.out.println("Animal sound:");

Obj.makeSound();

System.out.println(" Dog sound:");

Obj1.makeSound();

System.out.println("Cat sound:");

Obj2.makeSound();

}

}

**Output:**

Animal sound:

The animals make a sound

Dog sound:

The dog barks

Cat sound:

The cat meows

**2) Hill station**

class HillStations {

public void location() {

System.out.println("Location: hill station location.");

}

public void famousFor()

{

System.out.println("Famous for good weather.");

}

}

class Manali extends HillStations {

public void location() {

System.out.println("Location: Manali is in northside");

}

public void famousFor() {

System.out.println("Famous for Adventure ");

}

}

class Mussoorie extends HillStations

{

public void location() {

System.out.println("Location: Mussoorie is located in Uttarakhand.");

}

public void famousFor()

{

System.out.println("Famous for falls.");

}

}

class Gulmarg extends HillStations{

public void location() {

System.out.println("Location:Jammu and Kashmir.");

}

public void famousFor() {

System.out.println("Famous for cold weather .");

}

}

public class Main {

public static void main(String[] args) {

HillStations obj = new HillStations();

obj.location();

obj.famousFor();

Manali obj1= new Manali();

Mussoorie obj2 = new Mussoorie();

Gulmarg obj3= new Gulmarg();

System.out.println("call sub classes");

obj1.location();

obj1.famousFor();

obj2.location();

obj2.famousFor();

obj3.location();

obj3.famousFor();

}

}

**Output:**

Location: hill station location

Famous for good weather

call sub classes

Manali is in northside

Famous for Adventure

Location: Mussoorie is located in Uttarakhand.

Famous for falls.

Location:Jammu and Kashmir.

Famous for cold weather .

**3)palindrome**

public class PalindromeChecker {

public static void main(String[] args) {

String inputStr = "madam";

if (isPalindrome(inputStr)) {

System.out.println(inputStr+ " is a Palindrome.");

} else {

System.out.println(inputStr + " is not a Palindrome.");

}

}

private static boolean isPalindrome(String str) {

return str.equals(new StringBuilder(str).reverse().toString());

}

}

**Output:** madam is a palindrome