1. Program 1:

class HillStations:

def location(self):

return "Location: Undefined"

def famousFor(self):

return "Famous for: Undefined"

class Manali(HillStations):

def location(self):

return "Location: Himachal Pradesh, India"

def famousFor(self):

return "Famous for: Adventure sports and scenic beauty"

class Mussoorie(HillStations):

def location(self):

return "Location: Uttarakhand, India"

def famousFor(self):

return "Famous for: Hill station charm and viewpoints"

class Gulmarg(HillStations):

def location(self):

return "Location: Jammu and Kashmir, India"

def famousFor(self):

return "Famous for: Skiing and snow-capped mountains"

Output:

Location: Undefined

Famous for: Undefined

Location: Himachal Pradesh, India

Famous for: Adventure sports and scenic beauty

Location: Uttarakhand, India

Famous for: Hill station charm and viewpoints

Location: Jammu and Kashmir, India

Famous for: Skiing and snow-capped mountains

Program 2:

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 animal = new Animal();

Dog dog = new Dog();

Cat cat = new Cat();

}

}

Output:

The animal makes a sound

The dog barks.

  The cat meows.

Program 3:

question 1:import java.util.Scanner;

public class StringPalindrome {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

System.out.print("Enter a String to check for Palindrome: ");

String s1=input.nextLine();

String s2="";

for(int i=s1.length()-1;i>=0;i--)

s2=s2+s1.charAt(i);

System.out.println("Original string=" + s1);

System.out.println("Reverse string=" + s2);

if(s1.equals(s2))

System.out.println("The Given String is a Palindrome");

else

System.out.println("The Given String is a Not a Palindrome");

}

}

Output:

Enter a String to check for Palindrome: madam

Original string=madam

Reverse string=madam

The Given String is a Palindrome

Program 4:

import java.util.Scanner;

public class Sameness{

public static void main (String[]args){

Scanner kb = new Scanner (System.in);

String word = "";

System.out.println("Enter a word: ");

word = kb.nextLine();

uniqueCharacters(word);

}

public static void uniqueCharacters(String test){

String temp = "";

for (int i = 0; i < test.length(); i++){

if (temp.indexOf(test.charAt(i)) == - 1){

temp = temp + test.charAt(i);

}

}

System.out.println(temp + " ");

}

}

Output:

Enter a word:

java

jv