Assignment

**Code-1:**

Import java.util.Arrays;

Public class SortAndCount {

Public static void main(String[] args) {

Int[] arr = {2, 2, 1, 3, 2, 2, 4, 1, 2, 1};

Int target = 2;

// Sort the array

Arrays.sort(arr);

// Find the number of occurrences of the target number

Int count = 0;

For (int I = 0; I < arr.length; i++) {

If (arr[i] == target) {

Count++;

}

}

// Print the sorted array and the number of occurrences

System.out.println(“Sorted array: “ + Arrays.toString(arr));

System.out.println(“Number of occurrences of “ + target + “: “ + count);

}

}

**Output:**

Sorted array: [1, 1, 1, 2, 2, 2, 2, 2, 3, 4]

Number of occurrences of 2: 5

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**Code-2:**

Import java.util.Scanner;

Public class Main

{

Public static void main(String args[])

{

Int arr[] = {12, 13, 1, 10, 34, 10};

Int max = arr[0];

For(int i=0; i<arr.length; i++)

{

If(max < arr[i])

{

Max = arr[i];

}

}

System.out.print(max);

}

}

**Output:**

**34**

**-------------------------------------------**

**Code-3:**

Class Animal {

Public void makeSound() {

System.out.println(“The animal makes a sound.”);

}

}

// Derived class Dog

Class Dog extends Animal {

@Override

Public void makeSound() {

System.out.println(“The dog barks.”);

}

}

// Derived class Cat

Class Cat extends Animal {

@Override

Public void makeSound() {

System.out.println(“The cat meows.”);

}

}

// Main class

Public class Main {

Public static void main(String[] args) {

Animal animal1 = new Dog();

Animal animal2 = new Cat();

Animal1.makeSound(); // Output: The dog barks.

Animal2.makeSound(); // Output: The cat meows.

}

}

**Output:**

The dog barks

The car meows

**Code-4:**

Public class MathOperations {

// Overloaded method for addition of two integers

Public int add(int num1, int num2) {

Return num1 + num2;

}

// Overloaded method for addition of three doubles

Public double add(double num1, double num2, double num3) {

Return num1 + num2 + num3;

}

// Overloaded method for concatenation of two strings

Public String add(String str1, String str2) {

Return str1.concat(str2);

}

Public static void main(String[] args) {

MathOperations mathOps = new MathOperations();

// Adding two integers

System.out.println(“Adding two integers: “ + mathOps.add(10, 5));

// Adding three doubles

System.out.println(“Adding three doubles: “ + mathOps.add(10.5, 20.2, 30.6));

// Concatenating two strings

System.out.println(“Concatenating two strings: “ + mathOps.add(“Hello, “, “world!”));

}

}

**Output:**

Adding two integers: 15

Adding three doubles: 61.3

Concatenating two strings: Hello, world!