JAVA quiz

(50)

q- You are given an array of 10 integers. Write a Java program to identify all the numbers in the array that are duplicated and count how many times each duplicated number appears. The program should display each duplicated number along with the number of times it is repeated in the array.

For example, if the array is {4, 5, 6, 4, 7, 8, 5, 9, 6, 6}, the output should indicate that the number 4 is duplicated 2 times, the number 5 is duplicated 2 times, and the number 6 is duplicated 3 times.

Your solution should handle any possible integer values within the array and ensure that duplicates are identified and counted correctly.

**Requirements:**

1. Write the complete Java program, including the main method.
2. The program should use a method to identify and count the duplicates.
3. The output should list each duplicated number and how many times it appears in the array.
4. Ensure your program is efficient and handles edge cases, such as arrays with no duplicates or all elements being the same.

Example Output:

Duplicated numbers and their counts: Number 4 is duplicated 2 times Number 5 is duplicated 2 times Number 6 is duplicated 3 time

multiple-choice questions (MCQs) (50)

### Question 1:

Which of the following is not a feature of Object-Oriented Programming in Java?

* A) Encapsulation
* B) Polymorphism
* C) Inheritance
* D) Compilation

**Answer:** D) Compilation

### Question 2:

What is the primary purpose of a constructor in a Java class?

* A) To initialize objects of a class
* B) To define the structure of an object
* C) To overload methods
* D) To inherit properties from another class

### Question 3:

In Java, which of the following is true about the this keyword?

* A) this can be used to refer to the current class instance variable
* B) this can be used to invoke the current class method
* C) this can be passed as an argument in the constructor call
* D) All of the above

### Question 4:

Which of the following allows a class to have multiple methods with the same name but different parameters?

* A) Method Overloading
* B) Method Overriding
* C) Polymorphism
* D) Encapsulation

### Question 5:

Which of the following is true about inheritance in Java?

* A) A class can inherit from multiple classes
* B) A class can implement multiple interfaces
* C) A class cannot inherit from any class
* D) All classes must inherit from the Object class

**Answer:** B) A class can implement multiple interfaces

### Question 6:

What is the main difference between an abstract class and an interface in Java?

* A) Abstract classes can have method implementations, while interfaces cannot (before Java 8)
* B) Interfaces can be instantiated, while abstract classes cannot
* C) Abstract classes cannot have constructors, while interfaces can
* D) None of the above

### Question 7:

Which of the following concepts allows objects of different classes to be treated as objects of a common super class?

* A) Encapsulation
* B) Inheritance
* C) Polymorphism
* D) Abstraction

### Question 8:

Which of the following is true about encapsulation in Java?

* A) It allows data to be hidden from other classes
* B) It bundles the data and the methods that operate on the data into a single unit
* C) It allows for better control of how data is accessed or modified
* D) All of the above

### Question 9:

Which of the following is true about method overriding in Java?

* A) The method must have the same name as in the parent class
* B) The method must have the same parameter list as in the parent class
* C) The method must have the same return type as in the parent class
* D) All of the above

### Question 10:

What is the output of the following code?

java

class Parent {

void display() {

System.out.println("Parent class");

}

}

class Child extends Parent {

void display() {

System.out.println("Child class");

}

}

public class Main {

public static void main(String[] args) {

Parent obj = new Child();

obj.display();

}

}

* A) Parent class
* B) Child class
* C) Compile-time error
* D) Runtime error