

Arrays with methods in Java Day 5

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Problem Statements:9

1. Write a Java program to print the elements of an array.?
2. Write a Java program to print the maximum elements in an array.?
3. Write a Java program to print the sum of elements of an array.?
4. Write a Java program to print all the even elements of an array.?
5. Write a Java program to print all the odd elements of an array.?
6. Write a Java program to find the sum of the even elements of an array.?
7. Write a Java program to find the sum of the odd elements of an array.?
8. Write a Java program to find the product of an array.?
9. Write a Java program to print the reverse of an array.?
10. Write a Java Program to Check if an Element Exists in an Array.
11. Write a Java Program to Find Duplicate Elements in an Array.
12. Write a program to create an integer array of a given size with user-provided elements and display the count of even and odd values separately.
13. Write a program to create an integer array of a given size and display the maximum element in the array.
14. Write a program to create an integer array of a given size and display the minimum element in the array.
15. Write a program to calculate and display the sum of all the elements in an integer array provided by the user.
16. Write a program to identify and print the prime numbers in a given array of integers.
17. Write a program to count and display the occurrences of each element in a given array of integers.
18. Write a Java program to print the distinct elements in an array of integers provided by the user.

- 19.** Write a program to print the distinct odd elements from an array of integers provided by the user.
- 20.** Write a program to identify and display the elements of an integer array that belong to the Fibonacci series, considering 0 and 1 as the starting numbers of the series.

1. Print the elements of an array

```
public class ArrayOperations {  
  
    public static void printArray(int[] arr) {  
        for (int i = 0; i < arr.length; i++) {  
            System.out.print(arr[i] + " ");  
        }  
        System.out.println();  
    }  
  
    public static void main(String[] args) {  
        int[] array = {10, 20, 30, 40, 50};  
        printArray(array);  
    }  
}
```

2. Print the maximum element in an array

```
public class ArrayOperations {  
  
    public static int findMax(int[] arr) {  
        int max = arr[0];  
        for (int i = 1; i < arr.length; i++) {  
            if (arr[i] > max) {  
                max = arr[i];  
            }  
        }  
        return max;  
    }  
  
    public static void main(String[] args) {  
        int[] array = {10, 20, 30, 40, 50};
```

```
        System.out.println("Maximum Element: " + findMax(array));
    }
}
```

3. Print the sum of elements of an array

```
public class ArrayOperations {

    public static int calculateSum(int[] arr) {
        int sum = 0;
        for (int i = 0; i < arr.length; i++) {
            sum += arr[i];
        }
        return sum;
    }

    public static void main(String[] args) {
        int[] array = {10, 20, 30, 40, 50};
        System.out.println("Sum of Elements: " + calculateSum(array));
    }
}
```

4. Print all the even elements of an array

```
public class ArrayOperations {

    public static void printEvenElements(int[] arr) {
        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 == 0) {
                System.out.print(arr[i] + " ");
            }
        }
        System.out.println();
    }

    public static void main(String[] args) {
        int[] array = {10, 15, 20, 25, 30};
        printEvenElements(array);
    }
}
```

5. Print all the odd elements of an array

```
public class ArrayOperations {

    public static void printOddElements(int[] arr) {
        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 != 0) {
                System.out.print(arr[i] + " ");
            }
        }
        System.out.println();
    }

    public static void main(String[] args) {
        int[] array = {10, 15, 20, 25, 30};
        printOddElements(array);
    }
}
```

6. Find the sum of the even elements of an array

```
public class ArrayOperations {

    public static int sumEvenElements(int[] arr) {
        int sum = 0;
        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 == 0) {
                sum += arr[i];
            }
        }
        return sum;
    }

    public static void main(String[] args) {
        int[] array = {10, 15, 20, 25, 30};
        System.out.println("Sum of Even Elements: " + sumEvenElements(array));
    }
}
```

7. Find the sum of the odd elements of an array

```
public class ArrayOperations {

    public static int sumOddElements(int[] arr) {
        int sum = 0;
```

```

        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 != 0) {
                sum += arr[i];
            }
        }
        return sum;
    }

    public static void main(String[] args) {
        int[] array = {10, 15, 20, 25, 30};
        System.out.println("Sum of Odd Elements: " + sumOddElements(array));
    }
}

```

8. Find the product of elements of an array

```

public class ArrayOperations {

    public static int productOfElements(int[] arr) {
        int product = 1;
        for (int i = 0; i < arr.length; i++) {
            product *= arr[i];
        }
        return product;
    }

    public static void main(String[] args) {
        int[] array = {1, 2, 3, 4};
        System.out.println("Product of Elements: " + productOfElements(array));
    }
}

```

9. Print the reverse of an array

```

public class ArrayOperations {

    public static void printReversedArray(int[] arr) {
        for (int i = arr.length - 1; i >= 0; i--) {
            System.out.print(arr[i] + " ");
        }
        System.out.println();
    }
}

```

```

public static void main(String[] args) {
    int[] array = {10, 20, 30, 40, 50};
    printReversedArray(array);
}
}

```

10. Print Prime Numbers

```

import java.util.Scanner;

class Main {
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 4, 5, 6, 7, 8, 9, 11, 13};
        printPrimeNumbers(arr);
    }

    public static void printPrimeNumbers(int[] arr) {
        System.out.println("Prime numbers in the array:");
        for (int i = 0; i < arr.length; i++) {
            boolean isPrime = true;
            if (arr[i] <= 1) {
                isPrime = false;
            } else {
                for (int j = 2; j <= Math.sqrt(arr[i]); j++) {
                    if (arr[i] % j == 0) {
                        isPrime = false;
                        break;
                    }
                }
            }
            if (isPrime) {
                System.out.print(arr[i] + " ");
            }
        }
    }
}

```

11. Count Occurrences of Each Element

```

import java.util.Scanner;

class Main {
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 2, 1, 3, 2, 1, 5};
        countOccurrences(arr);
    }
}

```

```

    }

    public static void countOccurrences(int[] arr) {
        for (int i = 0; i < arr.length; i++) {
            int count = 0;
            for (int j = 0; j < arr.length; j++) {
                if (arr[i] == arr[j] && i > j) {
                    break;
                }
                if (arr[i] == arr[j]) {
                    count++;
                }
            }
            if (count > 0) {
                System.out.println(arr[i] + " occurs " + count + " times.");
            }
        }
    }
}

```

12. Print Distinct Elements

```

class PrintDistinctElements {
    public static void main(String[] args) {
        int[] arr = {10, 20, 20, 30, 10, 50, 10};
        printDistinctElements(arr);
    }

    public static void printDistinctElements(int[] arr) {
        for (int i = 0; i < arr.length; i++) {
            boolean isDistinct = true;
            for (int j = 0; j < i; j++) {
                if (arr[i] == arr[j]) {
                    isDistinct = false;
                    break;
                }
            }
            if (isDistinct) {
                System.out.print(arr[i] + " ");
            }
        }
    }
}

```

13. Print Distinct Odd Elements

```

class PrintDistinctOddElements {
    public static void main(String[] args) {
        int[] arr = {1, 2, 3, 3, 5, 1, 7, 5};
        printDistinctOddElements(arr);
    }

    public static void printDistinctOddElements(int[] arr) {
        for (int i = 0; i < arr.length; i++) {
            boolean isDistinct = true;
            boolean isOdd = arr[i] % 2 != 0; // Check if the current element is odd
            if (isOdd) {
                for (int j = 0; j < i; j++) {
                    if (arr[i] == arr[j]) {
                        isDistinct = false;
                        break;
                    }
                }
            }
            if (isOdd && isDistinct) {
                System.out.print(arr[i] + " ");
            }
        }
    }
}

```

14. Print Elements in Fibonacci Series

```

class Main {
    public static void main(String[] args) {
        int[] arr = {0, 1, 2, 3, 4, 5, 8, 13, 21};
        printFibonacciElements(arr);
    }

    public static void printFibonacciElements(int[] arr) {
        System.out.print("Elements in the Fibonacci series: ");
        for (int i = 0; i < arr.length; i++) {
            int a = 0, b = 1, next = 0;
            while (next <= arr[i]) {
                if (next == arr[i]) {
                    System.out.print(arr[i] + " ");
                    break;
                }
                next = a + b;
                a = b;
            }
        }
    }
}

```



```
    b = next;
  }
}
}
```