# Arrays in Java Day 3

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**7. Write a program to identify and print the prime numbers in a given array of integers.**

**Input**

Enter the size of the array: 6

Enter the elements of the array:

10 11 12 13 14 15

**Output**

Prime numbers:

11 3

**8. Write a program to count and display the occurrences of each element in a given array of integers.**

**Input**

Enter the size of the array: 5

Enter the elements of the array:

4 5 4 6 5

**Output**

Occurrences of elements:

5 occurs 2 times.

5 occurs 2 times.

6 occurs 1 times.

**9. Write a Java program to print the distinct elements in an array of integers provided by the user.**

**Input**

Enter the size of the array: 5

Enter the elements of the array:

3 3 4 5 5

**Output**

Distinct elements:

3 4 5

**10. Write a program to print the distinct odd elements from an array of integers provided by the user.**

**Input**

Enter the size of the array: 6

Enter the elements of the array:

5 7 7 8 10 11

**Output**

Distinct odd elements:

3 7 11

**11. 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.**

**Input**

Enter the size of the array: 7

Enter the elements of the array:

0 1 2 3 4 5 21

**Output**

Elements in the Fibonacci series:

0 1 2 3 5 21

**7. Print Prime Numbers**

```
class Main {
    public static void main(String[] args) {
        // Example array (replace with your own values)
        int[] arr= {1,2, 3, 4, 5, 6, 7, 8, 9, 11, 13};
        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] + " ");
            }
        }
    }
}
```

**Or**
**Using Scanner class**

```
import java.util.Scanner;
class FindPrimeNumbers{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the size of the array: ");
        int n = scanner.nextInt();
        int[] array = new int[n];
        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < n; i++) {
            array[i] = scanner.nextInt();
```

```
        }

        System.out.println("Prime numbers in the array:");
        for (int num : array) {
            boolean isPrime = true;
            if (num <= 1) {
                isPrime = false;
            } else {
                for (int i = 2; i <= Math.sqrt(num); i++) {
                    if (num % i == 0) {
                        isPrime = false;
                        break;
                    }
                }
            }

            if (isPrime) {
                System.out.print(num + " ");
            }
        }
    }
}
```

---

## 8. Count Occurrences of Each Element

```
class Main{

    public static void main(String [] args){

      int arr[]={1,2,3,2,1,3,2,1,5};

      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.");
        }
    }
  }
}
```

**Or**

**Using Scanner class**

```
import java.util.Scanner;
class Main {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        // Input the size of the array
        System.out.print("Enter the size of the array: ");
        int size = scanner.nextInt();
        // Create the array and input its elements
        int[] arr = new int[size];
        System.out.println("Enter " + size + " elements:");
        for (int i = 0; i < size; i++) {
            arr[i] = scanner.nextInt();
```

```
        }

        // Process the array to count occurrences
        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; // Avoid processing duplicates
                }
                if (arr[i] == arr[j]) {
                    count++;
                }
            }
            if (count > 0) {
                System.out.println(arr[i] + " occurs " + count + " times.");
            }
        }
    }
}
```

## 9. Print Distinct Elements

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

**Or**

**Using Scanner Class**

```
import java.util.Scanner;
class PrintDistinctElementsWithScanner {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the size of the array: ");
        int size = scanner.nextInt();
        int[] arr = new int[size];
        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < size; i++) {
            arr[i] = scanner.nextInt();
        }
        System.out.println("Distinct elements in the array:");
        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] + " ");
            }
```

```
        }
    }
}
```

---

**10. Print Distinct Odd Elements**

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

```
}
```

**Or**

**Using Scanner Class**

```
import java.util.Scanner;
class PrintDistinctOddElements {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the size of the array: ");
        int size = scanner.nextInt();
        int[] arr = new int[size];
        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < size; i++) {
            arr[i] = scanner.nextInt();
        }
        System.out.println("Distinct odd elements in the array:");
        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] + " ");
        }
    }
  }
}
```

---

### 11. Print Elements in Fibonacci Series

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

```
        }
    }
  }
}
```

**Or**

**Using Scanner Class**

```
import java.util.Scanner;
class FibonacciFromInputWithScanner {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the size of the array: ");
        int size = scanner.nextInt();
        int[] arr = new int[size];
        System.out.println("Enter the elements of the array:");
        for (int i = 0; i < size; i++) {
            arr[i] = scanner.nextInt();
        }
        System.out.print("Elements in the Fibonacci series: ");
        for (int num : arr) {
            boolean isFibonacci = false;
            int a = 0, b = 1, next = 0;
            while (next <= num) {
                if (next == num) {
                    isFibonacci = true;
                    break;
```

```
            }
            next = a + b;
            a = b;
            b = next;
        }
        if (isFibonacci) {
            System.out.print(num + " ");
        }
    }
  }
}
```