## 📝 DAY 9 – Number Programs Using Arrays

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⭐ Concept Introduction

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In this day, you teach how arrays help us perform number operations easily like:

Finding even/odd numbers

Finding sum of even/odd numbers

Counting positive/negative numbers

Reversing array elements

Searching elements

All operations use loops + arrays.

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⭐⭐ CLASS PROGRAM – 1

Program: Print only even numbers in an array

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Pseudo Code

```
Start
Create array arr
Loop i from 0 to n-1:
   If arr[i] % 2 == 0:
      Print arr[i]
```

End

Flow

1. Traverse array

2. Check even condition

3. Print even elements

Variables Used

arr[] → stores numbers

i → iterator

Program

```
class EvenArray {
    public static void main(String args[]) {

        int arr[] = {10, 21, 32, 43, 54, 65};

        System.out.println("Even numbers:");

        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 == 0)
                System.out.println(arr[i]);
        }
    }
}
```

Output

```
Even numbers:
10
32
54
```

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⭐ ⭐ CLASS PROGRAM – 2

Program: Count positive and negative numbers in an array

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Pseudo Code

```
Start
pos = 0
neg = 0
Loop i:
   If arr[i] >= 0:
      pos++
   Else:
      neg++
Print pos, neg
End
```

Flow

Traverse array

Count positive and negative separately

Variables Used

arr[] → elements

pos → positive count

neg → negative count

Program

```
class PosNegCount {
   public static void main(String args[]) {
```

```
        int arr[] = {5, -3, 10, -8, 20, -1};
        int pos = 0, neg = 0;

        for (int i = 0; i < arr.length; i++) {
            if (arr[i] >= 0)
                pos++;
            else
                neg++;
        }

        System.out.println("Positive Count = " + pos);
        System.out.println("Negative Count = " + neg);
    }
}
```

Output

```
Positive Count = 3
Negative Count = 3
```

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⭐ ⭐ CLASS PROGRAM – 3

Program: Reverse elements of an array

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Pseudo Code

```
Start
Loop i from n-1 to 0:
    Print arr[i]
End
```

Flow

Start at last index

Print until first index

Variables Used

arr[] → array

i → reverse iterator

Program

```
class ReverseArray {
    public static void main(String args[]) {

        int arr[] = {10, 20, 30, 40, 50};

        System.out.println("Reversed:");

        for (int i = arr.length - 1; i >= 0; i--) {
            System.out.println(arr[i]);
        }
    }
}
```

Output

```
Reversed:
50
40
30
20
10
```

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⭐ ⭐ CLASS PROGRAM – 4

Program: Find sum of even and odd numbers in an array

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Pseudo Code

```
Start
evenSum = 0
oddSum = 0
Loop i:
   If arr[i] % 2 == 0:
      evenSum += arr[i]
   Else:
      oddSum += arr[i]
Print evenSum, oddSum
End
```

Flow

Traverse array

Add even values separately

Add odd values separately

Variables Used

evenSum → sum of even numbers

oddSum → sum of odd numbers

Program

```
class SumEvenOdd {
   public static void main(String args[]) {

      int arr[] = {15, 22, 7, 18, 9};

      int evenSum = 0, oddSum = 0;

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

         if (arr[i] % 2 == 0)
            evenSum += arr[i];
         else
            oddSum += arr[i];
      }
```

```
        System.out.println("Even Sum = " + evenSum);
        System.out.println("Odd Sum = " + oddSum);
    }
}
```

Output

```
Even Sum = 40
Odd Sum = 31
```

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⭐ ⭐ ⭐ ASSIGNMENT PROGRAMS – 4

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⭐ Assignment – 1

Program: Print only odd numbers in an array

```
class OddArray {
    public static void main(String args[]) {

        int arr[] = {11, 20, 33, 44, 55};

        for (int i = 0; i < arr.length; i++) {
            if (arr[i] % 2 != 0)
                System.out.println(arr[i]);
        }
    }
}
```

Output

```
11
33
55
```

⭐ Assignment – 2

Program: Count how many numbers are divisible by 5

```
class DivisibleBy5 {
   public static void main(String args[]) {

      int arr[] = {5, 12, 25, 18, 40};
      int count = 0;

      for (int i = 0; i < arr.length; i++) {
         if (arr[i] % 5 == 0)
            count++;
      }

      System.out.println("Count = " + count);
   }
}
```

Output

```
Count = 3
```

⭐ Assignment – 3

Program: Find second largest element in array

```
class SecondLargest {
   public static void main(String args[]) {

      int arr[] = {50, 20, 90, 40, 70};

      int max = arr[0];
      int second = -1;

      for (int i = 1; i < arr.length; i++) {
         if (arr[i] > max) {
            second = max;
            max = arr[i];
         } else if (arr[i] > second && arr[i] != max) {
            second = arr[i];
         }
      }
```

```
        System.out.println("Second Largest = " + second);
    }
}
```

Output

```
Second Largest = 70
```

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⭐ Assignment – 4

Program: Linear search (find element and print index)

```
class LinearSearch {
    public static void main(String args[]) {

        int arr[] = {4, 9, 2, 7, 3};
        int key = 7;
        boolean found = false;

        for (int i = 0; i < arr.length; i++) {
            if (arr[i] == key) {
                System.out.println("Found at index " + i);
                found = true;
                break;
            }
        }

        if (!found)
            System.out.println("Not Found");
    }
}
```

Output

```
Found at index 3
```