DAY 3

Array

1.Write a program to find the sum of all elements in an integer array

```
public class Sum_of_Elements {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr= {1,2,3,4,5,6,7,8,9};
		int sum=0;
		for(int i=0;i<arr.length;i++) {
			sum+=arr[i];
		}
		System.out.println("Sum is :"+sum);
	}
}
```

2. Write a program to count even and odd numbers from an array

```
public class count_even_odd {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,2,3,4,5,6,7,8,9};
		int c_odd=0,c_even=0;
		for(int i=0;i<arr.length;i++) {
			if(arr[i]%2==0) {
				c_even++;
			}else {
				c_odd++;
			}
		}
		System.out.println("No:of Odd  : "+c_odd);
		System.out.println("No:of Even : "+c_even);
	}
}
```

3. find maximum and minimum elements from an array.

```
public class Max_min {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,2,3,4,5,6,7,8,9,10};
		int max=arr[0],min=arr[0];
		for(int i=0;i<arr.length;i++) {
			if(arr[i]>max)max=arr[i];
			if(arr[i]<min)min=arr[i];
		}
		System.out.println("Max: " + max + ", Min: " + min);
	}
}
```

4.write a program to find out second highest element from an array

```
public class Second_highest {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,13,18,1,6,7,3,9,16,17};
		int max1 =arr[0];
		int max2 = max1;
		for(int i=0;i<arr.length;i++) {
			if(arr[i]>max1) {
				max2=max1;
				max1=arr[i];
			}else if(arr[i]>max2 && arr[i]!=max1) {
				max2 =arr[i];
			}
		}
		System.out.println("Second highest :" +max2);
	}
}
```

5.write a program to search for a number entered by the user in an array

```
public class Search_num {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr= {1,4,5,2,7,5,51};
		int target = 2;
		boolean found = false;
		for(int i=0;i<arr.length;i++) {
			if(arr[i]==target) {
				System.out.println("Found at index: " + i);
				 found = true;
				break;
			}
		}
		if (!found) System.out.println("Not found");
	}
}
```

6. write a program to print an array in reverse order

```
public class printReverse {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr= {1,2,3,4,5,6,7,8,9};
		for(int i=arr.length-1;i>=0;i--) {
			System.out.println(arr[i]);
		}
	}
}
```

7. remove duplicate elements from an array

```
public class Remove_duplicate {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,2,3,3,4,3,6,7,8,9,9};
		for (int i = 0; i < arr.length; i++) {
	boolean isDuplicate = false;
	for (int j = 0; j < i; j++) {
	  if (arr[i] == arr[j]) {
	    isDuplicate = true;
	    break;
	  }
	}
	if (!isDuplicate) System.out.print(arr[i] + " ");
      }
      System.out.println();
	}
}
```

8.copy all elements from one array to another

```
public class copyArray {
	public static void main(String[] args) {
		int[] arr1= {1,2,3,7,5,6,7,8,9};
		int[] arr2 = new int[arr1.length];
		for(int i=0;i<arr1.length;i++) {
			arr2[i]=arr1[i];
		}
		for(int i=0;i<arr2.length;i++){
			System.out.print(arr2[i]+" ");
		}
	}
}
```

9.Sort an array in ascending order

```
public class SortArray {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,4,2,5,3,6,9,8,7};
		for(int i=0;i<arr.length;i++) {
			for(int j=0;j<arr.length-i-1;j++) {
				if(arr[j]>arr[j+1]) {
					int temp =arr[j];
					arr[j]=arr[j+1];
					arr[j+1]=temp;
				}
			}
		}
		for(int i=0;i<arr.length;i++) {
			System.out.println(arr[i]);
		}
	}
}
```

10.print only prime numbers from array

```
public class PrintPrime {
	public static void main(String[] args) {
		// TODO Auto-generated method stub
		int[] arr = {1,3,2,4,5,6,7,8,9,11,13};
		for (int i : arr) {
	if (i <= 1) continue;
	boolean prime = true;
	for (int j = 2; j * j <= i; j++)
	  if (i % j == 0) {
	    prime = false;
	    break;
	  }
```

```
            if (prime) System.out.print(i + " ");
        }
        System.out.println();}
}
```

11. find out frequency of each element

```
public class Frequency {
            public static void main(String[] args) {
                        // TODO Auto-generated method stub
                        int[] arr = {1,2,3,3,4,3,6,7,8,9,9};
                        int n =arr.length;
                        boolean[] visited = new boolean[n];
        for (int i = 0; i < n; i++) {
            if (visited[i]) continue;
            int count = 1;
            for (int j = i + 1; j < n; j++) {
                if (arr[i] == arr[j]) {
                    visited[j] = true;
                    count++;
                }
            }
            System.out.println(arr[i] + " occurs " + count + " times");
        }
             }
}
```

12. Rotate array elements(left or right)

```
public class Rotate {
            public static void main(String[] args) {
                        // TODO Auto-generated method stub
                        int[] arr = {1,2,3,3,4,3,6,7,8,9,9};
                        int n =arr.length;
                        int[] rotated = new int[n];
        for (int i = 0; i < n; i++)
```

```
        rotated[(i + 1) % n] = arr[i];
    System.out.print("Rotated right by 1: ");
    for (int i : rotated) System.out.print(i + " ");
    System.out.println();
        }
}
```

13. merge two arrays and sort them

```
public class merge_sort {
        public static void main(String[] args) {
                int[] arr1 = {1,3,4,7};
                int[] arr2 = {7,8,3,8};
                int n =arr1.length;
                int m = arr2.length;
    int[] merged = new int[n + m];
    for (int i = 0; i < n; i++) merged[i] = arr1[i];
    for (int i = 0; i < m; i++) merged[n + i] = arr2[i];
    for (int i = 0; i < merged.length - 1; i++)
       for (int j = i + 1; j < merged.length; j++)
          if (merged[i] > merged[j]) {
             int temp = merged[i];
             merged[i] = merged[j];
             merged[j] = temp;
          }
    System.out.print("Merged & sorted: ");
    for (int i : merged) System.out.print(i + " ");
    System.out.println();
        }
}
```

14. check if array is palindrome or not

```
public class Palindrome {
        public static void main(String[] args) {
                // TODO Auto-generated method stub
```

```
                int[] arr = {1,2,3,4,3,2,1};
                int n =arr.length;
                boolean isPalindrome = true;
    for (int i = 0; i < n / 2; i++) {
      if (arr[i] != arr[n - 1 - i]) {
        isPalindrome = false;
        break;
      }
    }
    System.out.println(isPalindrome);
     }
}
```

15. segregate even and odd numbers

```
public class segregate_even_odd {
        public static void main(String[] args) {
                // TODO Auto-generated method stub
                int[] arr1 = {4, 5, 2, 2, 7, 4, 9};
    int[] arr2 = {1, 3, 6};
    System.out.print("Even numbers: ");
    for (int i : arr1)
      if (i % 2 == 0)
                System.out.print(i + " ");
    System.out.print("\nOdd numbers: ");
    for (int i : arr1)
      if (i % 2 != 0)
                System.out.print(i + " ");
    System.out.println();
        }
}
```