Problem 1. Write a Java program to find the sum of all odd numbers in an array.

Code:

```java
package SumOfOdd;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Pleas! Enter the Array size:");
        int size = sc.nextInt();

        int[] array = new int[size];

        for(int i=0; i<size ; i++ ){
            array[i]=i;
        }

        int sum=0;

        for(int i=0; i<size ; i++){
            if(array[i]%2!=0){
                sum=sum+array[i];
            }
        }

        System.out.println("Sum of Odd number is-->" + sum );
    }

}
```

Output

Lab4 (run) | Lab4 (run) #2

```
run:
Pleas! Enter the Array size:10
Sum of Odd number is-->25
BUILD SUCCESSFUL (total time: 5 seconds)
```

Problem 2. Write a Java program that takes two arrays as input, calculate the index wise sum of these arrays, and store the result in a third array.

Code:

```java
package SumOfIndexNumber;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Pleas! Enter the Array size:");
        int size = sc.nextInt();

        int[] array1 = new int[size];
        int[] array2 = new int[size];
        int[] array3 = new int[size];

        System.out.print("Enter first array element--> ");
        for(int i=0; i<size ; i++ ){
            array1[i] = sc.nextInt();
        }

        System.out.print("Enter Second array element--> ");
        for(int i=0; i<size ; i++ ){
            array2[i] = sc.nextInt();
        }

        System.out.print("Sum of array element--> ");
        for(int i=0; i<size ; i++){
            array3[i]=array1[i]+array2[i];
            System.out.print(array3[i] + " " );
        }

    }
}
```

SumOfIndexNumber.Main

Output - Lab4 (run)

```
run:
Pleas! Enter the Array size:6
Enter first array element--> 1 4 5 8 9 6
Enter Second array element--> 3 5 6 8 9 4
Sum of array element--> 4 9 11 16 18 10 BUILD SUCCESSFUL (
```

Problem 3. Write a Java program to search an element in an array.

Code:

```java
package SearchElement;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Pleas! Enter the Array size:");
        int size = sc.nextInt();

        int[] array = new int[size];

        for(int i=0; i<size ; i++ ){
            array[i]=i+6;
        }

        System.out.print("Pleas! Enter the Element you wont to Search:");
        int ele = sc.nextInt();

        boolean found = false;

        System.out.println("The element is have ");
        for(int i=0; i<size ; i++){
            if(ele==array[i]){
            System.out.println("index [" + i + "] ,");
            found = true;
            }
        }

        if(!found)System.out.println("NoWhere.");

    }
}
```

Output - Lab4 (run)

```
run:
Pleas! Enter the Array size:10
Pleas! Enter the Element you wont to Search:6
The element is have
index [0] ,
BUILD SUCCESSFUL (total time: 14 seconds)
```

Problem 4. Write a Java program to reverse the elements in an array without using a second array.

Code:

```java
package ReverseElements;

import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Pleass! Enter the Array size:");
        int size = sc.nextInt();

        int[] array = new int[size];

        for(int i=0; i<size ; i++ ){
            array[i]=i;
        }

        System.out.print("Array normal order: ");
        for(int i=0; i<size ; i++ ){
            System.out.print(array[i] + " ,");
        }

        int temp;

        for(int i=0; i<size/2 ; i++ ){
            temp=array[i];
            array[i]=array[size-i-1];
            array[size-i-1]=temp;
        }

        System.out.println();

        System.out.print("Array Reverse order: ");
        for(int i=0; i<size ; i++ ){
            System.out.print(array[i] + " ,");
        }

    }
}
```

Output - Lab4 (run)

```
run:
Pleass! Enter the Array size:8
Array normal order: 0 ,1 ,2 ,3 ,4 ,5 ,6 ,7 ,
Array Reverse order: 7 ,6 ,5 ,4 ,3 ,2 ,1 ,0 ,BUILD SUCCESS
```

Problem 5. Write a Java program to find the second highest element of an array.

Code:

```java
package SecondHighElement;

import java.util.Arrays;
import java.util.Scanner;

public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Pleass! Enter the Array size:");
        int size = sc.nextInt();

        int[] array = new int[size];

        for(int i=0; i<size ; i++ ){
            array[i] =sc.nextInt();
        }

        Arrays.sort(array);

        System.out.println("The Second Highest element is:" + array[size-2]);
    }
}
```

SecondHighElement.Main

Output - Lab4 (run)

```
run:
Pleass! Enter the Array size:10
5 9 7 3 6 9 1 4 22 5 6
The Second Highest element is:9
BUILD SUCCESSFUL (total time: 16 seconds)
```

Problem 6. Write a Java program that calculates the average of an array, excluding the highest and lowest values in the array.

Code:

```
1   package Average;
2
3   import java.util.Scanner;
4
5   public class Main{
6       public static void main(String[] args) {
7           Scanner sc = new Scanner(System.in);
8
9           System.out.print("Pleas! Enter the Array size:");
10          int size = sc.nextInt();
11
12          int[] array = new int[size];
13
14          for(int i=0; i<size ; i++ ){
15              array[i] = sc.nextInt();
16          }
17
18          int sum=0;
19
20          for(int i=1; i<size-1 ; i++){
21                  sum=sum+array[i];
22          }
23
24          float average = (float)sum/(size-2);
25
26          System.out.println("Average of is-->" + average );
27      }
28  }
```

Output - Lab4 (run)

```
run:
Pleas! Enter the Array size:10
1 5 8 9 6 3 1 8 6 3
Average of is-->5.75
BUILD SUCCESSFUL (total time: 19 seconds)
```

Problem 7. Write a Java program to calculate the sum of all the prime numbers in a 20 array.

Code:

```
1   package SumOfPrime;
2
3   public class Main {
4       public static boolean isPrime(int num){
5           if (num <= 1) {
6               return false;
7           }
8           for (int i = 2; i <= Math.sqrt(num); i++) {
9               if (num % i == 0) {
10                  return false;
11              }
12          }
13          return true;
14      }
15
16      public static void main(String[] args) {
17          int[] array = new int[20];
18
19          for(int i=0; i<20 ; i++ ){
20              array[i]=i;
21          }
22
23          int sum=2;
24
25          for(int i=1; i<20 ; i=i+2){
26              if(isPrime(array[i])){
27                  sum=sum+array[i];
28              }
29          }
30
31          System.out.println("Sum of PRIME number is-->" + sum );
32      }
33  }
```

Output - Lab4 (run)

```
run:
Sum of PRIME number is-->77
BUILD SUCCESSFUL (total time: 0 seconds)
```