Day 4 Classwork

1. **Sum of diagonal elements**


```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
            Scanner sc = new Scanner(System.in);
int  n=3;
int sum=0;
int a[][] = new int[n][n];
for(int i=0;i<n;i++){
   for(int j=0;j<n;j++){
     a[i][j]=sc.nextInt();
     if(i==j){
        sum+=a[i][j];
     }
   }
}


System.out.println(sum);
}
}
```

2. **Sum of even indexes**

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
int  n=3;
int sum=0;
int a[][] = new int[n][n];
for(int i=0;i<n;i++){
   for(int j=0;j<n;j++){
     a[i][j]=sc.nextInt();
     if(i%2==0){
        sum+=a[i][j];
     }
   }
```

```
        }


System.out.println(sum);
        }
}
```

3. Sum of even elements in an array

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int r=sc.nextInt();
                int c=sc.nextInt();
                int a[][] =  new int[r][c];
                int sum = 0;
                for(int i=0;i<r;i++){
                   for(int j=0;j<c;j++){
                      a[i][j]=sc.nextInt();
                      int elem = a[i][j];
                      if(elem%2==0){
                         sum+=elem;
                      }
                   }
                }
                System.out.println(sum);
        }
}
```

4. Sum of upper triangle matrix

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int r=sc.nextInt();
                int c=sc.nextInt();
                int a[][] =  new int[r][c];
                int sum = 0;
                for(int i=0;i<r;i++){
                   for(int j=0;j<c;j++){
```

```
                a[i][j]=sc.nextInt();
                if(i<=j)
                {
                    sum+=a[i][j];
                }
            }
        }
        System.out.println(sum);
    }
}
```

5. **First and Last index of target elements**

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

        int n = sc.nextInt();
                int a[] = new int[n];
        for(int i=0;i<n;i++){
           a[i]=sc.nextInt();

        }
        int search = sc.nextInt();

        int left =0;int right =n-1;
        int start=0, end=0;
        for(int i=0;i<n;i++){

           if(a[left]!=search) left++;
           else if(a[right]!=search) right--;
           else {
              start = left ;
              end = right;
           }
        }
        System.out.println(start +" "+ end);
        }
    }
```

6. **Sum of all num in array**

```java
 import java.util.*;

public class Main
{
        public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
    int sum =0;
        int n = sc.nextInt();
                int a[] = new int[n];
        for(int i=0;i<n;i++){
           a[i]=sc.nextInt();
           sum+=a[i];
        }

        System.out.println(sum);
        }
}
```

7. Pair of elements with given sum

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
    int search = sc.nextInt();


        int n = sc.nextInt();
                int a[] = new int[n];
        for(int i=0;i<n;i++){
           a[i]=sc.nextInt();

        }

        for(int i=0;i<n;i++){
           for(int j=i;j<n;j++){
              if(a[i]+a[j]==search){
                 System.out.println(a[i]+"+"+a[j]+"="+search);
              }
           }
        }
```

```
//      System.out.println(sum);
        }
}
```

8. Count of pair of elements with given sum

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int num = sc.nextInt();
                int n = sc.nextInt();
                int c=0;
                int[] a = new int[n];
                for(int i=0;i<n;i++){
                   a[i]=sc.nextInt();
                }
                for(int j=0;j<n;j++){
                   for(int k=j;k<n;k++){
                      if(a[j]+a[k]==num){
                         c++;
                      }
                   }
                }
                if(c>0){
                   System.out.println("Array has "+c+" pairs");
                }
                else{
                   System.out.println("No pairs");
                }

        }
}
```

9. Min and Max element in an array

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
```

```
            int[] a = new int[n];
            int min = Integer.MAX_VALUE;
     int max = Integer.MIN_VALUE;
            for(int i=0;i<n;i++){
                a[i]=sc.nextInt();
            }

            for(int j=0;j<n;j++){
                if(a[j]<min){
                    min=a[j];
                }
                if(a[j]>max){
                    max=a[j];
                }
            }
            System.out.print(min+" "+max);


        }
}
```

10. If all even the sum it all else product it all

```
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                int[] a = new int[n];
                int sum=0,prod=1;
                for(int i=0;i<n;i++){
                    a[i]=sc.nextInt();
                    sum+=a[i];
                    prod*=a[i];
                }
                if(sum%2==0)
                System.out.println(sum);
                else
                System.out.println(prod);


        }
}
```

11. Matrix of Index values

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int n = sc.nextInt();
                int[][] a = new int[n][n];
                int sum=0,prod=1;
                for(int i=0;i<n;i++){
                  for(int j=0;j<n;j++){
                      a[i][j]= (i+j);
                  }
                }
                for(int i=0;i<n;i++){
                  for(int j=0;j<n;j++){
                      System.out.print(a[i][j]+" ");
                  }
                  System.out.println();
                }

        }
}
```

12. Sum of Lower triangle

```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
                Scanner sc = new Scanner(System.in);
                int r=sc.nextInt();
                int c=sc.nextInt();
                int a[][] =  new int[r][c];
                int sum = 0;
                for(int i=0;i<r;i++){
                  for(int j=0;j<c;j++){
                    a[i][j]=sc.nextInt();
                    if(i>=j)
                    {
                        sum+=a[i][j];
                    }
```

```java
                    }
                }
                System.out.println(sum);
            }
        }
```

13.
```java
import java.util.*;
public class Main
{
        public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a = sc.nextInt();
        int b =sc .nextInt();
        int n = sc.nextInt();
        for(int i=0;i<n;i++){
          if(i%2==0){
             a*=2;
          }
          else{

             b*=2;
          }

        }
        System.out.println(a+b);
        }
}
```