

Lab 1:Extra PROGRAMS

1.Accept an array of size n from the user. Find the sum of even indices (i.e., 0,2,4....) and sum of odd indices (1,3,5....) and print the same

```
import java.util.*;

class array{

    public static void main(String args[]){

        int ar[],n,o[],e[],temp1=0,temp2=0,i;

        Scanner in = new Scanner(System.in);

        System.out.print("Enter number of elements ");

        n = in.nextInt();

        ar = new int[n];

        int m = n/2 + 1;

        o = new int[m];

        e = new int[m];

        System.out.print("Enter "+n+" elements : ");

        for(i = 0;i < n; i++)

            ar[i] = in.nextInt();

        for(i = 0;i < n; i++)

        {

            if(i % 2 == 0)

                e[temp1++] = ar[i];

            else

                o[temp2++] = ar[i];

        }

        System.out.print("Elements at even index : ");

        for(i = 0;i < temp1; i++)

            System.out.print(e[i]+" ");

        System.out.println();

        System.out.print("Elements at odd index : ");

        for(i = 0;i < temp2; i++)

            System.out.print(o[i]+" ");
```

```

}

}

C:\java\week3\array.java (covid 19) - Sublime Text (UNREGISTERED)
File Edit Selection Find View Goto Tools Project Preferences Help

array.java
1 import java.util.*;
2 class array{
3     public static void main(String args[]){
4         int ar[],n,o[],e[],temp1=0,temp2=0,i;
5         Scanner in = new Scanner(System.in);
6         System.out.print("Enter number of elements
7         n = in.nextInt();
8         ar = new int[n];
9         int m = n/2 + 1;
10        o = new int[m];
11        e = new int[m];
12        System.out.print("Enter "+n+" elements : ")
13        for(i = 0;i < n; i++)
14            ar[i] = in.nextInt();
15        for(i = 0;i < n; i++)
16        {
17            if(i % 2 == 0)
18                e[temp1++] = ar[i];
19            else
20                o[temp2++] = ar[i];
21        }
22        System.out.print("Elements at even index :
23        for(i = 0;i < temp1; i++)
24            System.out.print(e[i]+" ");
25        System.out.println();
26        System.out.print("Elements at odd index :
27        for(i = 0;i < temp2; i++)
28            System.out.print(o[i]+" ");
29    }
30 }
31 }

Select Command Prompt
C:\java\week3>javac array.java
C:\java\week3>java array
Enter number of elements 7
Enter 7 elements : 0 1 2 6 7 11 10
Elements at even index : 0 2 7 10
Elements at odd index : 1 6 11
C:\java\week3>

```

2. Accept an array of n integers. Find the number of positive numbers, negative numbers and zeros.

```

import java.util.*;

class array1{

    public static void main(String args[]){

        int ar[],count0=0,countp=0,countn=0,i,n;

        Scanner in = new Scanner(System.in);

        System.out.print("Enter number of elements ");

        n = in.nextInt();

        ar = new int[n];

        System.out.print("Enter "+n+" elements : ");

        for(i = 0;i < n; i++)

            ar[i] = in.nextInt();

        for(i = 0;i < n; i++)

        {

```

```

        if(ar[i] == 0)

            count0++;

        else if(ar[i] < 0)

            countn++;

        else

            countp++;

    }

    System.out.println("Count of 0: "+count0);

    System.out.println("Count of positive numbers: "+countp);

    System.out.println("Count of negative numbers: "+countn);

}

}

```

C:\java\week3\array1.java (covid 19) - Sublime Text (UNREGISTERED)

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```

1  import java.util.*;
2  class array1{
3      public static void main(String args[]){
4          int ar[],count0=0,countp=0,countn=0,i,n;
5          Scanner in = new Scanner(System.in);
6          System.out.print("Enter number of elements
7          n = in.nextInt();
8          ar = new int[n];
9          System.out.print("Enter "+n+" elements : ")
10         for(i = 0; i < n; i++)
11             ar[i] = in.nextInt();
12         for(i = 0; i < n; i++)
13         {
14             if(ar[i] == 0)
15                 count0++;
16             else if(ar[i] < 0)
17                 countn++;
18             else
19                 countp++;
20         }
21         System.out.println("Count of 0: "+count0);
22         System.out.println("Count of positive numb
23         System.out.println("Count of negative numb
24     }
25 }

```

Command Prompt

```

C:\java\week3>javac array1.java
C:\java\week3>java array1
Enter number of elements 6
Enter 6 elements : 1 2 -6 0 0 -11
Count of 0: 2
Count of positive numbers: 2
Count of negative numbers: 2

C:\java\week3>java array1
Enter number of elements 9
Enter 9 elements : 1 0 0 0 0 0 0 0 78
Count of 0: 7
Count of positive numbers: 2
Count of negative numbers: 0

C:\java\week3>

```

Line 19, Column 26

Windows Ink Workspace Java

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3. Consider a super market bill. Accept a double array holding rate per item of say x items and an int array showing the quantity purchased by a customer. Calculate the total bill amount and the final bill amount after giving discounts as per the following slabs. If the total bill amount ≥ 10000 , discount=5% If the total bill amount ≥ 7500 and < 10000 , discount=3% If the total bill amount ≥ 5000 , discount=2%

```

import java.util.*;

class bill{

    public static void main(String args[]){

```

```

int x,q[],i;

double rate[],total=0.0,fin = 0.0;

Scanner in = new Scanner(System.in);

System.out.print("Enter number of item :");

x = in.nextInt();

q = new int[x];

rate = new double[x];

System.out.print("Enter rate of "+x+" item:");

for(i = 0;i < x; i++)

    rate[i] = in.nextDouble();

System.out.print("Enter quantity of each item : ");

for(i = 0;i < x; i++)

{

    q[i] = in.nextInt();

    total = total + rate[i]*q[i];

}

if (total >= 10000)

    fin = total - 0.05*total;

else if (total >= 7500)

    fin = total - 0.03*total;

else

    fin = total -0.02*total;

System.out.println("Total Amount :"+total);

System.out.println("Total Amount :"+fin);

}

}

```

```

1 import java.util.*;
2 class bill{
3     public static void main(String args[]){
4         int x,q[],i;
5         double rate[],total=0.0,fin = 0.0;
6         Scanner in = new Scanner(System.in);
7         System.out.print("Enter number of item :");
8         x = in.nextInt();
9         q = new int[x];
10        rate = new double[x];
11        System.out.print("Enter rate of "+x+" item :");
12        for(i = 0;i < x; i++){
13            rate[i] = in.nextDouble();
14        }
15        System.out.print("Enter quantity of each item :");
16        for(i = 0;i < x; i++){
17            q[i] = in.nextInt();
18            total = total + rate[i]*q[i];
19        }
20        if (total >= 10000)
21            fin = total - 0.05*total;
22        else if (total >= 7500)
23            fin = total - 0.03*total;
24        else
25            fin = total - 0.02*total;
26        System.out.println("Total Amount : "+total);
27        System.out.println("Total Amount : "+fin);
28    }
29 }
30 }

```

```

C:\java\week3>java bill
Enter number of item :4
Enter rate of 4 item:10 30.8 5 98
Enter quantity of each item : 9 2 10 1
Total Amount :299.6
Total Amount :293.608

C:\java\week3>java bill
Enter number of item :5
Enter rate of 5 item:100 150 1000 20.5 10
Enter quantity of each item : 10 10 5 5 100
Total Amount :8602.5
Total Amount :8344.425

C:\java\week3>

```

4. Accept an array A of n elements. Create two new arrays where the first one say B that holds all the odd numbers from array A and the second say C holds the even numbers from array A. Display the sum, average, max and min of array C.

```

import java.util.*;

class evenarray{

    public static void main(String args[]){

        int ar[],n,o[],e[],temp1=0,temp2=0,i,sum = 0;

        Scanner in = new Scanner(System.in);

        System.out.print("Enter number of elements ");

        n = in.nextInt();

        ar = new int[n];

        int m = n/2 + 1;

        o = new int[m];

        e = new int[m];

        System.out.print("Enter "+n+" elements : ");

        for(i = 0;i < n; i++)

            ar[i] = in.nextInt();

        for(i = 0;i < n; i++)

        {

```

```

        if(ar[i] % 2 == 0)
            e[temp1++] = ar[i];
    else
        o[temp2++] = ar[i];
    }

    System.out.print("Even elements in array : ");

    for(i = 0; i < temp1; i++)
        System.out.print(e[i]+" ");

    System.out.println();

    System.out.print("Odd elements in array : ");

    for(i = 0; i < temp2; i++)
        System.out.print(o[i]+" ");


    int min = e[0];
    int max = e[0];

    for(i = 0; i < temp1; i++)
    {
        sum = sum + e[i];

        if (e[i]>max) max = e[i];

        if (e[i]<min) min = e[i];
    }

    float avg = sum/temp1;

    System.out.println("\nSum of even array :"+sum);

    System.out.println("Average of even array :"+avg);

    System.out.println("Maximum value in even array :"+max);

    System.out.println("Minimum value in even array :"+min);

    }
}

```

The screenshot shows the Sublime Text editor with a Java file named `evenarray.java` open. The code processes an array of 9 elements: 12, 11, 14, 68, 7, 5, 0, 2, 9. It identifies even elements (12, 14, 68, 0, 2), calculates their sum (96), average (19.0), maximum (68), and minimum (0). A Command Prompt window is overlaid on the right, showing the execution of the program.

```
22 System.out.print("Even elements in array : ");
23 for(i = 0; i < temp1; i++)
24     System.out.print(e[i] + " ");
25 System.out.println();
26 System.out.print("Odd elements in array : ");
27 for(i = 0; i < temp2; i++)
28     System.out.print(o[i] + " ");
29
30 int min = e[0];
31 int max = e[0];
32 for(i = 0; i < temp1; i++)
33 {
34     sum = sum + e[i];
35     if (e[i] > max) max = e[i];
36     if (e[i] < min) min = e[i];
37 }
38 float avg = sum/temp1;
39 System.out.println("\nSum of even array : "+sum);
40 System.out.println("Average of even array : "+avg);
41 System.out.println("Maximum value in even array : "+max);
42 System.out.println("Minimum value in even array : "+min);
43 }
44 }
```

Command Prompt Output:

```
C:\java\week3>
C:\java\week3>javac evenarray.java
C:\java\week3>java evenarray
Enter number of elements 9
Enter 9 elements : 12 11 14 68 7 5 0 2 9
Even elements in array : 12 14 68 0 2
Odd elements in array : 11 7 5 9
Sum of even array :96
Average of even array :19.0
Maximum value in even array :68
Minimum value in even array :0
C:\java\week3>
```

Line 39, Column 31

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Java

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