

100. The marks obtained by 50 students in a subject are tabulated as follows :

Name	Marks
.....	.....
.....	.....
.....	.....

Write a program to input the names and marks of the students in the subject. Calculate and display :

(i) The subject average marks (subject average marks = subject total/50)

(ii) The highest marks in the subject and the name of the student.

(The maximum marks in the subject are 100)

Ans. import java.io.\*;  
public class test

```
{
    public static void main(String [] args) throws IOException
    {
        String n, m, nm = "";
        int mk, g = 0, sm = 0;
        BufferedReader b = new BufferedReader(new InputStreamReader(System.in));
        for(int I = 0; I <= 50; I++)
        {
            System.out.println("Enter Name");
            n = b.readLine();
            System.out.println("Enter marks");
            mk = Integer.parseInt(b.readLine());
            sm = sm + mk;
            if(mk > g)
            {
                g = mk;
                nm = n;
            }
        }
        av = sm/50;
        System.out.println("Average marks " + av);
        System.out.println("Highest marks are " + g + " Student Name " + nm);
    }
}
```

101. Write a program to accept 15 integers from the keyboard, assuming that no integer entered is a zero. Perform bubble sort on the integers and then print them in ascending order.

Ans. import java.io.\*;  
public class test

```
{
    public static void main(String args[]) throws IOException
    {
        int n[] = new int[15], l, I, t;
        BufferedReader b = new BufferedReader(new InputStreamReader(System.in));
        for(I = 0; I <= 14; I++)
        {
            System.out.println("Enter a Number ");
            n[I] = Integer.parseInt(b.readLine());
        }
        for(I = 0; I < 14; I++)
```

```

    {
        for(int j = I + 1; j <= 14; j++)
        {
            if(n[I] > n[j])
            {
                t = n[I];
                n[I] = n[j];
                n[j] = t;
            }
        }
    }
    for(I = 0; I <= 14; I++)
    {
        System.out.println(n[I]);
    }
}
}

```

102. Write a program to input forty words in an array. Arrange these words in descending order of alphabets, using selection sort technique. Print the sorted array.

Ans. import java.util.\*; // importing package  
class selectSort

```

{
    String A[] = new String[40];
    int i, j, min;
    String t;
    void display()
    {
        Scanner sc = new Scanner(System.in);
        for(i = 0; i < 40; i++)
        {
            System.out.println("Enter a name");
            A[i] = sc.next();
        }
        for(i = 0; i < 40; i++)
        {
            min = i;
            for(j = i + 1; j < 40; j++)
            {
                if(A[i].compareTo(A[j]) < 0)
                {
                    min = j;
                }
            }
            t = A[i];
            A[i] = A[min];
            A[min] = t;
        }
        for(i = 0; i < 40; i++)
        {
            System.out.println(A[i]);
        }
    }
}

```

```

    }
}
} // class ending

```

Name	Type	Description
A[]	String	To store forty words
i, j	int	Loop variable
t	String	Temporary variable to store a string
min	int	To store index value of smaller string of the array

103. WAP to accept 15 integers from the console. Sort the list in ascending order using :

- (i) Selection Sort Method.
- (ii) Bubble Sorting Method.

Ans. (i) `import java.io.*;`  
`public class SelectionSorting`  
`{`  
`public static void main(String args[]) throws IOException`  
`{`  
`int arr[] = new int[20];`  
`BufferedReader buf = new BufferedReader(new InputStreamReader(System.in));`  
`System.out.println("Enter 15 numbers :");`  
`for(int i = 0; i < 15; i++)`  
`{`  
`String h = buf.readLine();`  
`arr[i] = Integer.parseInt(h);`  
`}`  
`int n = 15;`  
`int min, minPosition = 0;`  
`for(int i = 0; i < n - 1; i++)`  
`{`  
`min = arr[i];`  
`for(int j = i + 1; j < n; j++)`  
`{`  
`if(min > arr[j])`  
`{`  
`min = arr[j];`  
`minPosition = j;`  
`}`  
`}`  
`int t = arr[i];`  
`arr[i] = min;`  
`arr[minPosition] = t;`  
`}`  
`System.out.println("The sorted values in ascending order are :");`  
`for(int k = 0; k < n; k++)`  
`{`  
`System.out.println(arr[k]);`  
`}`  
`}`  
`}`

```
(ii) import java.io.*;
public class BubbleSorting
{
    public static void main(String args[]) throws IOException
    {
        int arr[] = new int[20];
        BufferedReader buf = new BufferedReader(new InputStreamReader(System.in));
        System.out.println("Enter 15 numbers :");
        for(int i = 0; i < 15; i++)
        {
            String h = buf.readLine();
            arr[i] = Integer.parseInt(h);
        }
        int n = 15;
        for(int i = 0; i < n - 1; i++)
        {
            for(int j = 0; j < n - 1; j++)
            {
                if(arr[j] > arr[j + 1])
                {
                    int t = arr[j];
                    arr[j] = arr[j + 1];
                    arr[j + 1] = t;
                }
            }
        }
        System.out.println("The numbers in ascending order are :");
        for(int k = 0; k < n; k++)
            System.out.println(arr[k]);
    }
}
```

104. A company keeps a linear array year (k) that contains the number of employees born in the year k. WAP to perform the following tasks :

- (i) To print each year in which no employee is born.
- (ii) To find and print the number of years in which no employee is born.
- (iii) To find the number of employees who will be atleast 60 years old at the end of the year 2004.

```
Ans. import java.io.*;
public class test2
{
    public static main(String args[]) throws IOException
    {
        int year[] = new int[1000];
        System.out.println("Please enter the minimum year in which an employee can be born of :");
        BufferedReader buf = new BufferedReader(new InputStreamReader(System.in));
        String n = buf.readLine();
        int num = Integer.parseInt(n);
        System.out.println("Please enter the maximum year in which an employee can be born of :");
        String n1 = buf.readLine();
        int num1 = Integer.parseInt(n1);
        String n2;
```

```
for(int k = num; k <= num1; k++)
{
    System.out.println("Please enter the number of employees born in the year" + k);
    n2 = buf.readLine();
    year[k] = Integer.parseInt(n2);
}
int c = 0, d = 0;
int yr = 2004 - 60;
int S = 0;
System.out.println("The years in which no employee was born are :");
for(int k = num; k <= num1; k++)
{
    if(year[k] == 0)
    {
        c++;
        System.out.println(year[k]);
    }
    if(k <= yr)
        S = S + year[k];
}
System.out.println("The number of years in which no employee was born :"+c);
System.out.println("The number of employees who will be at least 60 yrs old in year 2004 are
: " + S);
}
```