69. Write a program to accept the year of graduation from school as an integer value from the user. Using the Binary Search technique on the sorted array of integers given below :
Output the message "Record exists". If the value input is located in the array. If not, output the message "Record does not exist".
{1982, 1987, 1993, 1996, 1999, 2003, 2006, 2007, 2009, 2010}

Ans.
```
import java.io.*;
class Search
{
        int A[] = {1982, 1987, 1993, 1996, 1999, 2003, 2006, 2007, 2009, 2010};
        int n, l, h, mid, flag = 0;
        void display()throws IOException
        {
            BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
            System.out.println("Enter year");
            n = Integer.parseInt(br.readLine());
            l = 0;
            h = A.length - 1;
            while(l <= h)
            {
                    mid = (l + h)/2;
                    if(n > A[mid])
            {
                    l = mid + 1;
            }
            else if(n < A[mid])
            {
                    h = mid - 1;
            }
            else
            {
                    flag = 1;
                    break;
            }
        }
        if(flag == 1)
        {
                System.out.println("Record exists");
        }
        else
        {
                System.out.println("Record does not exists");
        }
        }
```

70. Write a program to input 10 integer elements in an array and sort them in descending order using the bubble sort technique.

Ans.
```
import java.io.*;
class Arrange
{
        int A[] = new int[10];
        int i, j, t;
        void display()throws IOException
        {
            BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
            for(i = 0; i < 10; i++)
```

```
        {
            System.out.println("Enter a number");
            A[i] = Integer.parseInt(br.readLine());
        }
        for(i = 0; i < 10; i++)
        {
            for(j = 0; j < 9 - i; j++)
            {
                if(A[j] < A[j + 1])
                {
                    t = A[j];
                    A[j] = A[j + 1];
                    A[j + 1] = t;
                }
            }
        }
        for(i = 0; i < 10; i++)
        {
            System.out.println(A[i]);
        }
    }
}
```

71. Write a program to accept the names of 10 cities in a single dimension string array and their STD (Subscribers Trunk Dialing) codes in another single dimension integer array. Search for a name of a city input by the user in the list. if found, display "Search Successful" and print the name of the city along with its STD code, or else display the message "Search Unsuccessful, No such city in the list".

Ans.

```
import java.io.*;
public class STD
{
    public static void main(String args[]) throws IOException
    {
    int S[] = new int [10];
    String n[] = new String [10];
    String sn;
    BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
    int pos = -1, i;
    for(i = 0; i < 10; i++)
    {
        System.out.println("Enter City Name and STD");
        n[i] = br.readLine();
        S[i] = Integer.parseInt(br.readLine());
    }
    System.out.println("Enter city name to search");
    sn = br.readLine();
    for(i = 0; i <= 9; i++)
    {
        if(n[i].equalsIgnoreCase(sn))
        {
        pos = i;
        break;
        }
```

```
        }
        if(pos != - 1)
                System.out.println("STD of the entered city = "+S[pos]);
        else
                System.out.println("Search Unsuccessful, No such city in the list");
        }
}
```

72. Write a program to input and store the weight of ten people. Sort and display them in descending order using the bubble sort technique.

Ans.

```
import java.io.*;
class Sort
{
        int A[] = new int[10];
        int i, j, t;
        void display()throws IOException
        {
            BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
            for(i = 0; i < 10; i++)
        {
            System.out.println("Enter Weight");
            A[i] = Integer.parseInt(br.readLine());
        }
        for(i = 0; i < 10; i++)
        {
            for(j = i + 1; j < 10; j++)
            {
                if(A[i] < A[j])
                {
                t = A[i];
                A[i] = A[j];
                A[j] = t;
                }
            }
        }
        for(i = 0; i < 10; i++)
        {
        System.out.println(A[i]);
        }
    }
}
```

73. Write a program to perform binary search on a list of integers given below, to search for an element input by the user, if it is found display the element along with its position, otherwise display the message "Search element not found".

5, 7, 9, 11, 15, 20, 30, 45, 89, 97

Ans.

```
import java.io.*;
public class BSearch
{
        int A[] = {5, 7, 9, 11, 15, 20, 30, 45, 89, 97};
        int low, high, mid, flag = 0;
        void display(int n)
```

```
        {
            low = 0;
            high = A.length - 1;
            while(low <= high)
            {
                mid = (low + high)/2;
                if(n > A[mid])
            {
                low = mid + 1;
            }
            else if(n < A[mid])
            {
                high = mid - 1;
            }
            else
            {
            flag = 1;
            break;
            }
        }
        if(flag == 1)
        {
        System.out.println(n + " Found at position " + (mid + 1));
        }
        else
        {
        System.out.println("Search element not found");
        }
    }
}
```

and produce a third array