Java Lab Assessment 4

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1.Program to find element from an sorted array using binary search (java.til.package)

```java
import java.util.*;

//Program to find element from an sorted array using binary search
(java.til.package)

public class binarysearch {
   public static void main(String[] args)
   {
       int[] sortedarr= {1,3,5,7,9,11,12,13};
       Scanner sc =new Scanner(System.in);
       System.out.println("Enter the number you want to search: ");
       int n= sc.nextInt();

       int index=(Arrays.binarySearch(sortedarr, n));
       if(index>=0)
       {
           System.out.println("Number found at index position: "+index);
       }
       else
       {
           System.out.println("Number not found");
       }
       sc.close();
   }

}
```

Output:

Enter the number you want to search:

5

Number found at index position: 2

2.Program to delete duplicate elements from an array of size 5.

```java
import java.util.Arrays;
```

```java
public class deldupe {
   public static void main(String[] args)
   {
       int[] arr={1,2,2,3,4};
       int size=arr.length;
       for(int i=0;i<size-1;i++)
       {
           for(int j=i+1;j<size;j++)
           {
               if(arr[i]==arr[j])
               {
                   arr[j]=arr[size-1];
                   size--;
                   j--;

               }
           }
       }
       int[] newarr=new int[size];
       System.arraycopy(arr, 0, newarr, 0, size);
       System.out.println("Original array: "+Arrays.toString(arr));
       System.out.println("New array: "+Arrays.toString(newarr));
   }

}
```

Output:
Original array: [1, 2, 4, 3, 4]
New array: [1, 2, 4, 3]

3.Program that reverses an array and stores it in the same array.

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

//Program that reverses an array and stores it in the same array.
public class reverse {
   public static void main(String[] args)
   {

       Scanner sc = new Scanner(System.in);
       System.out.println("Enter the number of elements in the array: ");
       int n =sc.nextInt();
```

```
        int[] arr= new int[n];

        System.out.println("Enter array elements: ");
        for(int i=0;i<n;i++)
        {
            arr[i]=sc.nextInt();
        }

        System.out.println("Original Array: "+Arrays.toString(arr));

        System.out.println("Reversed Array: ");
        for(int i=0;i<n/2;i++)
        {
            int temp=arr[i];
            arr[i]=arr[n-i-1];
            arr[n-i-1]=temp;

        }
        System.out.println(Arrays.toString(arr));

        sc.close();
    }

}
```

Output:

Enter the number of elements in the array:

3

Enter array elements:

1

2

3

Original Array: [1, 2, 3]

Reversed Array:

[3, 2, 1]