

Questuon 1:

```
import java.io.*;
```

```
public class Main
```

```
{
```

```
    public static void main(String[] args)throws IOException
```

```
    {
```

```
        BufferedReader br=new BufferedReader (new InputStreamReader(System.in));
```

```
        System.out.println("Program by Manasa\nJava1\nSAP ID:51834754");
```

```
        System.out.print("Enter a number : ");
```

```
        int n = Integer.parseInt(br.readLine());
```

```
        int copy = n, a = 0, sum = 0;
```

```
        String b = Integer.toString(n);
```

```
        int len = b.length();
```

```
        while(copy>0)
```

```
        {
```

```
            a = copy % 10;
```

```
            sum = sum + (int)Math.pow(a,len);
```

```
            len--;
```

```
            copy = copy / 10;
```

```
        }
```

```
        if(sum == n)
```

```
            System.out.println(n+" is a Disarium Number.");
```

```
        else
```

```
System.out.println(n+" is not a Disarium Number.");
```

```
}
```

```
}
```

```
1 import java.io.*;
2 public class Main
3 {
4     public static void main(String[] args)throws IO
5     {
6         BufferedReader br=new BufferedReader (n
7         System.out.println("Program by Manasa\n
8         System.out.print("Enter a number : ");
9         int n = Integer.parseInt(br.readLine())
10        int copy = n, a = 0, sum = 0;
11        String b = Integer.toString(n);
12        int len = b.length();
13
14        while(copy>0)
15        {
16            a = copy % 10;
17            sum = sum + (int)Math.pow(a,len);
18            len--;
19            copy = copy / 10;
20        }
21
22        if(sum == n)
23            System.out.println(n+" is a Disariu
24        else
25            System.out.println(n+" is not a Dis
26        }
27    }
```

× Terminal

```
Program by Manasa
Java1
SAP ID:51834754
Enter a number : 12
12 is not a Disarium Number.

Process finished.
```

Question 2 :

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

```
public class Main
```

```
{
```

```
    private static void sortBinaryArray(int[] inputArray)
```

```
{  
    int zeroCount = 0;  
  
    System.out.println("Program by Manasa\nJAVA1 \nSAP ID:51834754");  
    System.out.println("Input Array Before Sorting : "+Arrays.toString(inputArray));  
  
    for (int n = 0; n < inputArray.length; n++)  
    {  
        if (inputArray[n] == 0)  
        {  
            zeroCount++;  
        }  
    }  
  
    for (int n = 0; n < zeroCount; n++)  
    {  
        inputArray[n] = 0;  
    }  
  
    for (int n = zeroCount; n < inputArray.length; n++)  
    {  
        inputArray[n] = 1;
```

```
}
```

```
System.out.println("Input Array After Sorting : "+Arrays.toString(inputArray));
```

```
}
```

```
public static void main(String[] args)
```

```
{
```

```
    sortBinaryArray(new int[] {0, 5, 7, 1,
```

```
    6, 4, 9, 1});
```

```
}
```

```
}
```

```
1 import java.util.Arrays;
2
3 public class Main
4 {
5     private static void sortBinaryArray(int[] inputAr
6     {
7         int zeroCount = 0;
8
9         System.out.println("Program by Manasa\nJAVA1 \n
10        System.out.println("Input Array Before Sorting
11
12
13        for (int n = 0; n < inputArray.length; n++)
14        {
15            if (inputArray[n] == 0)
16            {
17                zeroCount++;
18            }
19        }
20
21
22        for (int n = 0; n < zeroCount; n++)
23        {
24            inputArray[n] = 0;
25        }
26
27
28        for (int n = zeroCount; n < inputArray.length;
29        {
30            inputArray[n] = 1;
31        }
32    }
33 }
```

× Terminal

```
Program by Manasa
JAVA1
SAP ID:51834754
Input Array Before Sorting : [0, 5, 7, 1, 6,
Input Array After Sorting : [0, 1, 1, 1, 1, 1
Process finished.
```

Question 3:

```
public class Main
```

```
{
```

```
static int replaceDigit(int a, int numbertobereplaced,
```

```
int replacingnumber)
```

```
{
```

```
int result = 0, multiply = 1;
```

```
while (a % 10 > 0)
```

```
{
```

```
int remainder = a % 10;
```

```
if (remainder == numbertobereplaced)
```

```
    result = result + replacingnumber * multiply;
```

```
else
```

```
    result = result + remainder * multiply;
```

```
multiply *= 10;
```

```
a = a / 10;
```

```
}
```

```
return result;
```

```
}
```

```
public static void main(String[] args)
```

```
{
```

```
    int a = 7375, numbertobereplaced = 3, replacingnumber = 5;
```

```
    System.out.println("Program By Manasa\nJava1\nSAP ID:51834754");
```

```
    System.out.println(replaceDigit(a, numbertobereplaced, replacingnumber));
```

```
}
```

```
}
```

```

1 public class Main
2 {
3     static int replaceDigit(int a, int numbertobereplaced,
4                             int replacingnumber)
5     {
6         int result = 0, multiply = 1;
7
8         while (a % 10 > 0)
9         {
10             int remainder = a % 10;
11
12             if (remainder == numbertobereplaced)
13                 result = result + replacingnumber * multiply;
14
15             else
16                 result = result + remainder * multiply;
17
18             multiply *= 10;
19             a = a / 10;
20         }
21         return result;
22     }
23 }
24
25 public static void main(String[] args)
26 {
27     int a = 7375, numbertobereplaced = 3, replacingnumber = 4;
28     System.out.println("Program By Manasa\nJava1\nSAP ID:51834754\n7575");
29     System.out.println(replaceDigit(a, numbertobereplaced, replacingnumber));
30 }
31 }

```

× Terminal

```

Program By Manasa
Java1
SAP ID:51834754
7575

```

Process finished.

Question 5:

```
class Binary{
```

```
    public static void binarySearch(int arr[], int first, int last, int key){
```

```
        int mid = (first + last)/2;
```

```
        while( first <= last ){
```

```
            if ( arr[mid] < key ){
```

```
                first = mid + 1;
```

```
            }else if ( arr[mid] == key ){
```

```
                System.out.println("Element is found at index: " + mid);
```

```
        break;
    }else{
        last = mid - 1;
    }
    mid = (first + last)/2;
}
if ( first > last ){
    System.out.println("Element is not found!");
}
}

public static void main(String args[]){
    System.out.println("program by Manasa\nJava1\nSap:51834754");

    int arr[] = {7,20,3,41,8,9};

    int key = 3;

    int last=arr.length-1;

    binarySearch(arr,0,last,key);
}
}
```



```
1 class Binary{
2     public static void binarySearch(int arr[], int first, int last, int key){
3         int mid = (first + last)/2;
4         while( first <= last ){
5             if ( arr[mid] < key ){
6                 first = mid + 1;
7             }else if ( arr[mid] == key ){
8                 System.out.println("Element is found at index: " + mid);
9                 break;
10            }else{
11                last = mid - 1;
12            }
13            mid = (first + last)/2;
14        }
15        if ( first > last ){
16            System.out.println("Element is not found!");
17        }
18    }
19    public static void main(String args[]){
20        System.out.println("program by Manasa\nJava1\nSap:51834754");
21        int arr[] = {7,20,3,41,8,9};
22        int key = 3;
23        int last=arr.length-1;
24        binarySearch(arr,0,last,key);
25    }
26 }
```

× Terminal



```
program by Manasa
Java1
Sap:51834754
Element is found at index: 2

Process finished.
```