

ASSIGNMENT:

```
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("Author: T Vyjayanthi\nSAP ID:51834774");
```

```
    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;
```

```
}
```

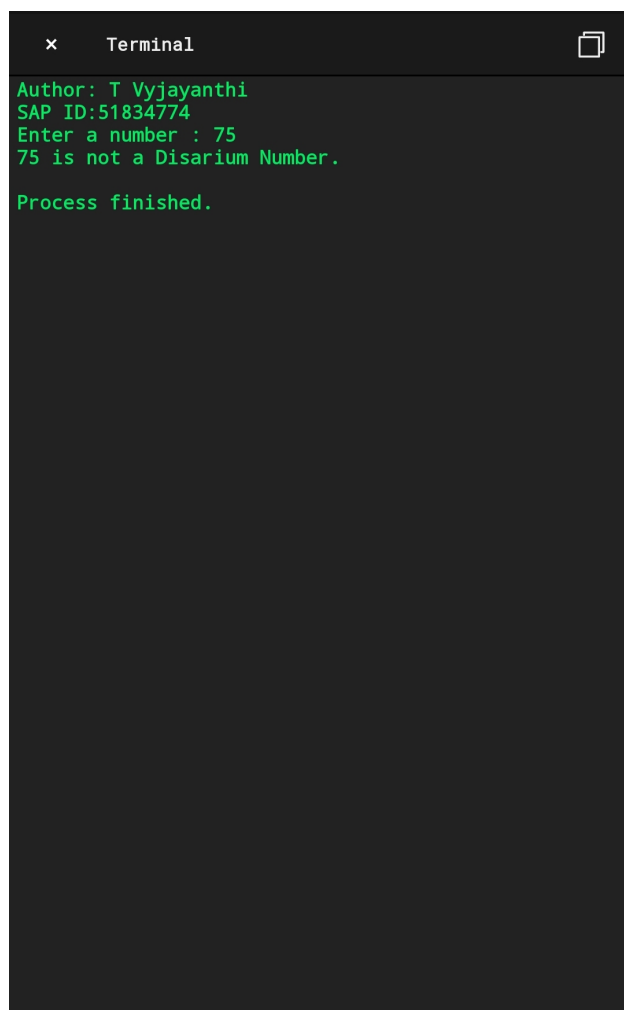
```
if(sum == n)
```

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

```
else
```

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

OUTPUT:

A terminal window with a dark background and a title bar that says "Terminal". The text inside the terminal is green and shows the following output:

```
Author: T Vyjayanthi  
SAP ID:51834774  
Enter a number : 75  
75 is not a Disarium Number.  
Process finished.
```

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

```
public class Main
```

```
{
```

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

```
    {
```

```
        int zeroCount = 0;
```

```
        System.out.println("Author: T. VYJAYANTHI\nSAP ID:51834774");
```

```
        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[] {1, 0, 1, 1, 0, 1, 0, 0});  
}  
}
```

OUTPUT:

```
× Terminal
Author: T. VYJAYANTHI
SAP ID:51834774
Input Array Before Sorting : [1, 0, 1, 1, 0, 1, 0, 0]
Input Array After Sorting : [0, 0, 0, 0, 1, 1, 1, 1]
Process finished.
```

```
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 = 125, numbertobereplaced = 1, replacingnumber = 5;
```

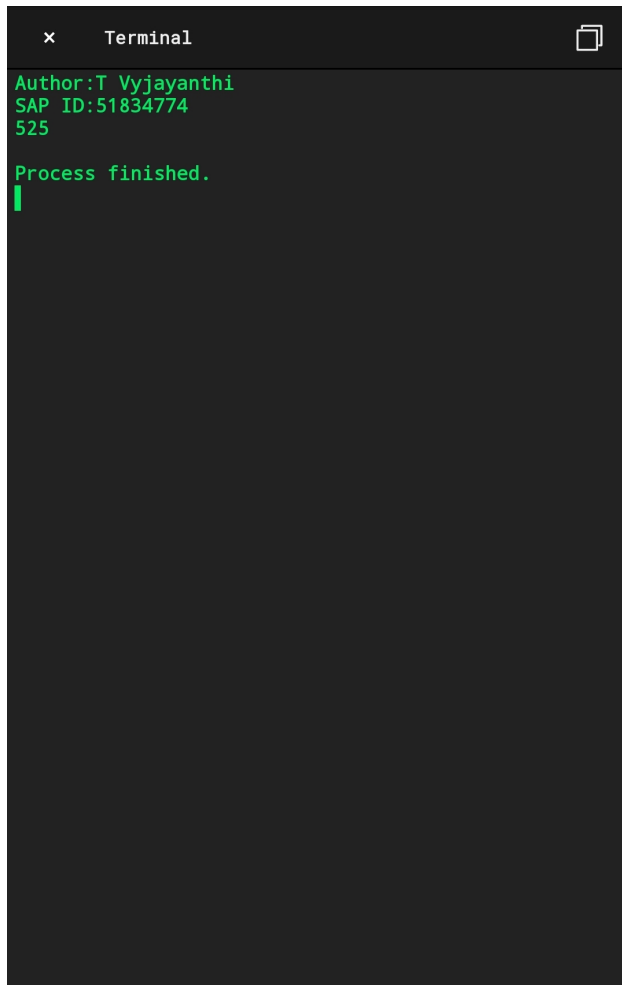
```
    System.out.println("Author:TVjyayanthi \nSAP ID:51834774");
```

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

```
}
```

```
}
```

OUTPUT:

A screenshot of a terminal window with a dark background. The title bar at the top shows a close button (x), the word "Terminal", and a copy icon. The terminal content is displayed in green text. It shows three lines: "Author:T Vyjayanthi", "SAP ID:51834774", and "525". After a blank line, it shows "Process finished." followed by a green cursor line.

```
x    Terminal    [copy icon]
Author:T Vyjayanthi
SAP ID:51834774
525

Process finished.
|
```

```
5.public class Main
{
    public static int binarySearch(int[] M, int left, int right, int n)
    {
        if (left > right) {
            return -1;
        }
    }
}
```

```
int mid = (left + right) / 2;
```

```
if (n == M[mid]) {
```

```
    return mid;
```

```
}
```

```
else if (n < M[mid]) {
```

```
    return binarySearch(M, left, mid - 1, n);
```

```
}
```

```
else {
```

```
    return binarySearch(M, mid + 1, right, n);
```

```
}
```

```
}
```

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

```
{
```

```
    int[] M = { 6, 5, 18, 21, 23, 25 };
```

```
    int key = 18;
```

```
    int left = 0;
```

```
    int right = M.length - 1;
```



```
int index = binarySearch(M, left, right, key);

System.out.println("Author:T. VYJAYANTHI\nSAP ID: 51834774");

if (index != -1) {

    System.out.println("Element found at index " + index);

} else {

    System.out.println("Element not found in the array");

}

}

}
```

OUTPUT:

```
× Terminal
Author:T. VYJAYANTHI
SAP ID: 51834774
Element found at index 2
Process finished.
```