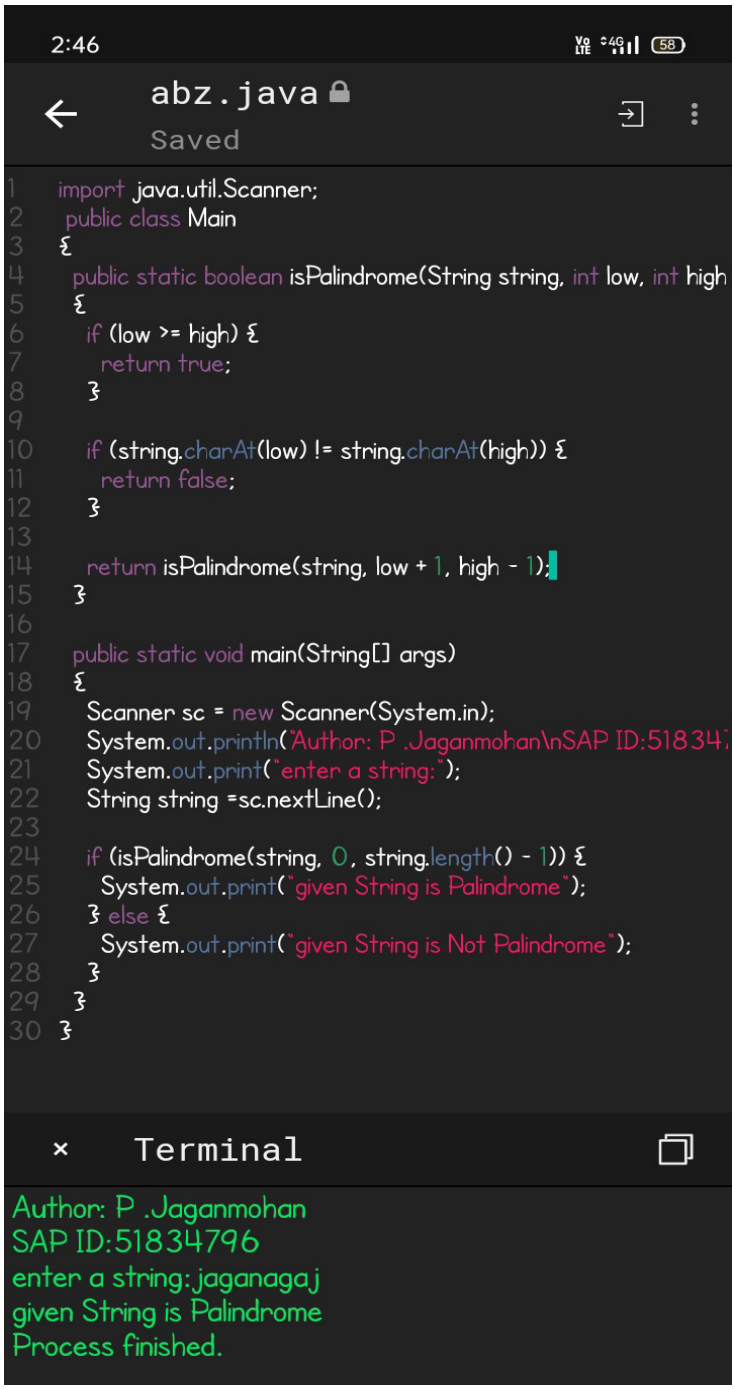
1.

```
import java.util.Scanner;
import java.util.InputMismatchException;
class Calculator
{

   public void add(float a,float b, float c)
   {
      System.out.println(a+"+"+b+"+"+c+"="+(a+b+c));
   }
   public void add(float a,float b)
   {
      System.out.println(a+"+"+b+"="+(a+b));
   }


   public void subtract(float a,float b, float c)
   {
      System.out.println(a+"-"+b+"-"+c+"="+(a-b-c));
   }
   public void subtract(float a,float b)
   {
      System.out.println(a+"-"+b+"="+(a-b));
   }


   public void product(float a,float b)
   {
      System.out.println(a+"*"+b+"="+(a*b));
   }


   public void division(float a,float b)
   {
      System.out.println(a+"/"+b+"="+(a/b));
   }
}
public class Main
{
   public static void main (String[] args) {
      Calculator cal=new Calculator();
      Scanner sc=new Scanner(System.in);
      System.out.println("Author: P. jaganmohan\nSAP ID:5183
      try
      {
         System.out.println("1. ADD\n2. SUBTRACt\n3. MULTI
         int op=sc.nextInt();
         switch(op)
         {
            case 0:
              System.out.println("Exit...");
              System.exit(0);
              break;
```

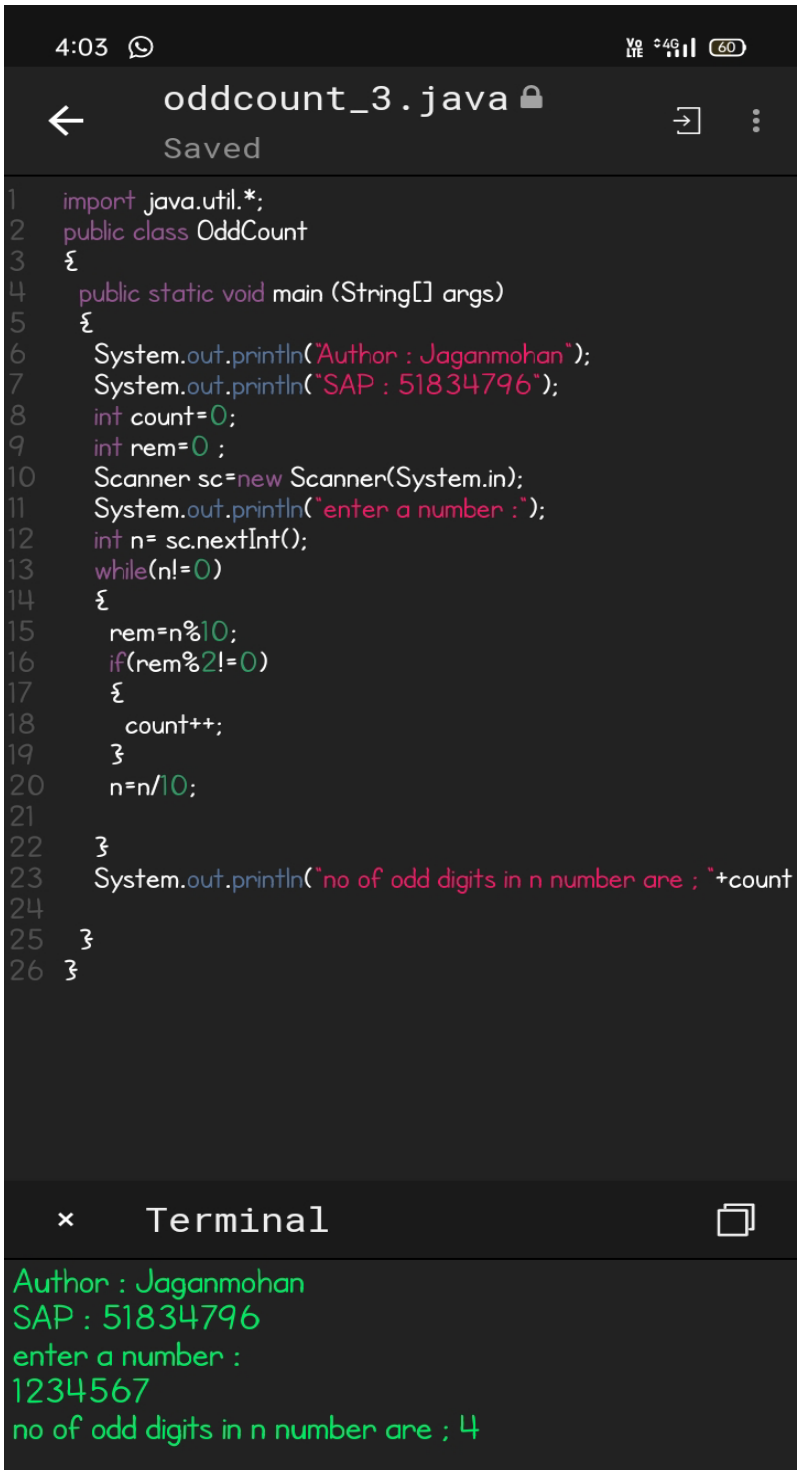
```
                break;
            case 1:
                System.out.print("Enter operand 1: ");
                float add1=sc.nextFloat();
                System.out.print("Enter operand 2: ");
                float add2=sc.nextFloat();
                System.out.print("Enter operand 3(if you want. e
                float add3=sc.nextFloat();
                if(add3==0)
                {
                    cal.add(add1, add2);
                }
                else
                {
                    cal.add(add1, add2, add3);
                }
                break;
            case 2:
                System.out.print("Enter operand 1: ");
                float sub1=sc.nextFloat();
                System.out.print("Enter operand 2: ");
                float sub2=sc.nextFloat();
                System.out.print("Enter operand 3(if you want. e
                float sub3=sc.nextFloat();
                if(sub3==0)
                {
                    cal.subtract(sub1, sub2);
                }
                else
                {
                    cal.subtract(sub1, sub2, sub3);
                }
                break;
            case 3:
                System.out.print("Enter operand 1: ");
                float mul1=sc.nextFloat();
                System.out.print("Enter operand 2: ");
                float mul2=sc.nextFloat();
                cal.product(mul1,mul2);
                break;
            case 4:
                System.out.print("Enter operand 1: ");
                float div1=sc.nextFloat();
                System.out.print("Enter operand 2: ");
                float div2=sc.nextFloat();
                if(div2==0)
                {
                    throw new ArithmeticException("Number canno
                }
                cal.division(div1,div2);
                break;
            default:
                System.out.println("Invalid choice: ");
        }
    }
    catch(InputMismatchException ime)
    {
        System.out.println("You have entered input of wrong da
    }
    catch(ArithmeticException ae)
    {
        System.out.println(ae.getMessage());
    }
  }
}
```

```
Author: P. jaganmohan
SAP ID:51834796
1. ADD
2. SUBTRACt
3. MULTIPLICATION
4. DIVISION
5. EXIT
Enter your choice:
1
Enter operand 1: 45
Enter operand 2: 54
Enter operand 3(if you want. else enter 0): 76
45.0+54.0+76.0=175.0

Process finished.
```

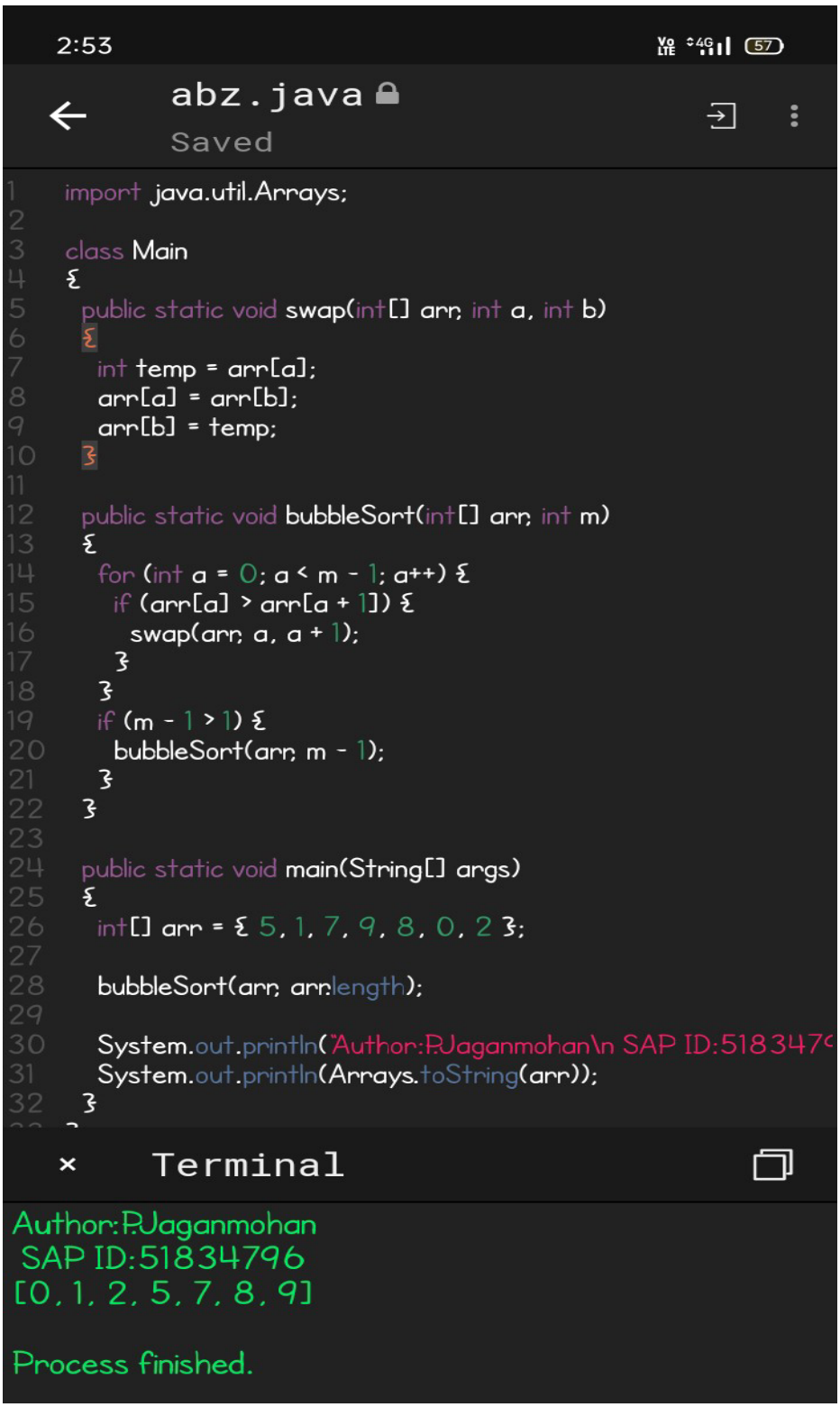
2.


2:46
abz.java
Saved
import java.util.Scanner;
public class Main
{
public static boolean isPalindrome(String string, int low, int high
{
if (low >= high) {
return true;
}
if (string.charAt(low) != string.charAt(high)) {
return false;
}
return isPalindrome(string, low + 1, high - 1);
}
public static void main(String[] args)
{
Scanner sc = new Scanner(System.in);
System.out.println("Author: P .Jaganmohan\nSAP ID:518347
System.out.print("enter a string:");
String string =sc.nextLine();
if (isPalindrome(string, 0, string.length() - 1)) {
System.out.print("given String is Palindrome");
} else {
System.out.print("given String is Not Palindrome");
}
}
}
Terminal
Author: P .Jaganmohan
SAP ID:51834796
enter a string:jaganagaj
given String is Palindrome
Process finished.

3.


4:03
oddcount_3.java
Saved
import java.util.*;
public class OddCount
{
public static void main (String[] args)
{
System.out.println("Author : Jaganmohan");
System.out.println("SAP : 51834796");
int count=0;
int rem=0 ;
Scanner sc=new Scanner(System.in);
System.out.println("enter a number :");
int n= sc.nextInt();
while(n!=0)
{
rem=n%10;
if(rem%2!=0)
{
count++;
}
n=n/10;
}
System.out.println("no of odd digits in n number are ; "+count
}
}
Terminal
Author : Jaganmohan
SAP : 51834796
enter a number :
1234567
no of odd digits in n number are ; 4

5.


2:53
abz.java
Saved
import java.util.Arrays;
class Main
{
public static void swap(int[] arr, int a, int b)
{
int temp = arr[a];
arr[a] = arr[b];
arr[b] = temp;
}
public static void bubbleSort(int[] arr, int m)
{
for (int a = 0; a < m - 1; a++) {
if (arr[a] > arr[a + 1]) {
swap(arr, a, a + 1);
}
}
if (m - 1 > 1) {
bubbleSort(arr, m - 1);
}
}
public static void main(String[] args)
{
int[] arr = { 5, 1, 7, 9, 8, 0, 2 };
bubbleSort(arr, arr.length);
System.out.println("Author:P.Jaganmohan\n SAP ID:5183479
System.out.println(Arrays.toString(arr));
}
Terminal
Author:P.Jaganmohan
SAP ID:51834796
[0, 1, 2, 5, 7, 8, 9]
Process finished.