

```

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: D.Aditya Varma \nSAP ID:51834693");
        try
        {
            System.out.println("1. ADD\n2. SUBTRACT\n3. MULTIPLICATION\n4. DIVISION\n5.
EXIT\nEnter your choice: ");
            int op=sc.nextInt();
            switch(op)
            {
                case 0:
                    System.out.println("Exit...");
                    System.exit(0);

```

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        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. else enter 0): ");
    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. else enter 0): ");
    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 cannot be divided by zero!!");
    }
    cal.division(div1,div2);
    break;
default:

```

```

        System.out.println("Invalid choice: ");
    }
}
catch(InputMismatchException ime)
{
    System.out.println("You have entered input of wrong datatype!!");
}
catch(ArithmeticException ae)
{
    System.out.println(ae.getMessage());
}
}
}
input screen:

```

```

1 import java.util.Scanner;
2 import java.util.InputMismatchException;
3 class Calculator
4 {
5     public void add(float a, float b, float c)
6     {
7         System.out.println(a+"+b"+"c"="(a+b)+c");
8     }
9     public void add(float a, float b)
10    {
11        System.out.println(a+"+b"="(a+b)");
12    }
13
14    public void subtract(float a, float b, float c)
15    {
16        System.out.println(a+"-b"+"c"="(a-b)+c");
17    }
18    public void subtract(float a, float b)
19    {
20        System.out.println(a+"-b"="(a-b)");
21    }
22
23    public void product(float a, float b)
24    {
25        System.out.println(a+"*b"="(a*b)");
26    }
27
28    public void division(float a, float b)
29    {
30        System.out.println(a+"/"+b"="(a/b)");
31    }
32
33    public class Main
34    {
35        public static void main (String[] args) {
36            Calculator cal = new Calculator();
37            Scanner sc = new Scanner(System.in);
38            System.out.println("Author: D.Adiya Varma |uSAP ID:51834693");
39            try {
40                System.out.println("\n ADD=0, SUBTRACT=1, MULTIPLICATION=2, DIVISION=3. EXIT=4 Enter your choice: ");
41                int op = sc.nextInt();
42                switch(op)
43                {
44                    case 0:
45                        System.out.println("Exit...");
46                        System.exit(0);
47                        break;
48                    case 1:
49                        System.out.print("Enter operand 1: ");
50                        float add1 = sc.nextFloat();
51                        System.out.print("Enter operand 2: ");
52                        float add2 = sc.nextFloat();
53                        System.out.print("Enter operand 3(if you want, else enter 0): ");
54                        float add3 = sc.nextFloat();
55                        if(add3==0)
56                        {
57                            cal.add(add1, add2);
58                        }
59                        else
60                        {
61                            cal.add(add1, add2, add3);
62                        }
63                        break;
64                    case 2:
65                        System.out.print("Enter operand 1: ");
66                        float sub1 = sc.nextFloat();
67                        System.out.print("Enter operand 2: ");
68                        float sub2 = sc.nextFloat();
69                        System.out.print("Enter operand 3(if you want, else enter 0): ");
70                        float sub3 = sc.nextFloat();
71                        if(sub3==0)
72                        {
73                            cal.subtract(sub1, sub2);
74                        }
75                        else
76                        {
77                            cal.subtract(sub1, sub2, sub3);
78                        }
79                        break;
80                    case 3:
81                        System.out.print("Enter operand 1: ");
82                        float mul1 = sc.nextFloat();
83                        System.out.print("Enter operand 2: ");
84                        float mul2 = sc.nextFloat();
85                        cal.product(mul1, mul2);
86                        break;
87                    case 4:
88                        System.out.print("Enter operand 1: ");
89                        float div1 = sc.nextFloat();
90                        System.out.print("Enter operand 2: ");
91                        float div2 = sc.nextFloat();
92                        if(div2==0)
93                        {
94                            throw new ArithmeticException("Number cannot be divided by zero!!");
95                        }
96                        cal.division(div1, div2);
97                        break;
98                    default:
99                        System.out.println("Invalid choice: ");
100                }
101            } catch(InputMismatchException ime)
102            {
103                System.out.println("You have entered input of wrong datatype!!");
104            }
105            catch(ArithmeticException ae)
106            {
107                System.out.println(ae.getMessage());
108            }
109        }
110    }
111 }

```

```

57    System.out.print("Enter operand 2: ");
58    float add2 = sc.nextFloat();
59    System.out.print("Enter operand 3(if you want, else enter 0): ");
60    float add3 = sc.nextFloat();
61    if(add3==0)
62    {
63        cal.add(add1, add2);
64    }
65    else
66    {
67        cal.add(add1, add2, add3);
68    }
69    break;
70    case 2:
71        System.out.print("Enter operand 1: ");
72        float sub1 = sc.nextFloat();
73        System.out.print("Enter operand 2: ");
74        float sub2 = sc.nextFloat();
75        System.out.print("Enter operand 3(if you want, else enter 0): ");
76        float sub3 = sc.nextFloat();
77        if(sub3==0)
78        {
79            cal.subtract(sub1, sub2);
80        }
81        else
82        {
83            cal.subtract(sub1, sub2, sub3);
84        }
85        break;
86    case 3:
87        System.out.print("Enter operand 1: ");
88        float mul1 = sc.nextFloat();
89        System.out.print("Enter operand 2: ");
90        float mul2 = sc.nextFloat();
91        cal.product(mul1, mul2);
92        break;
93    case 4:
94        System.out.print("Enter operand 1: ");
95        float div1 = sc.nextFloat();
96        System.out.print("Enter operand 2: ");
97        float div2 = sc.nextFloat();
98        if(div2==0)
99        {
100            throw new ArithmeticException("Number cannot be divided by zero!!");
101        }
102        cal.division(div1, div2);
103        break;
104    default:
105        System.out.println("Invalid choice: ");
106    }
107    catch(InputMismatchException ime)
108    {
109        System.out.println("You have entered input of wrong datatype!!");
110    }
111    catch(ArithmeticException ae)
112    {
113        System.out.println(ae.getMessage());
114    }
115 }
116 }

```

Output Screen:

2)

```
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)  
    {
```

```

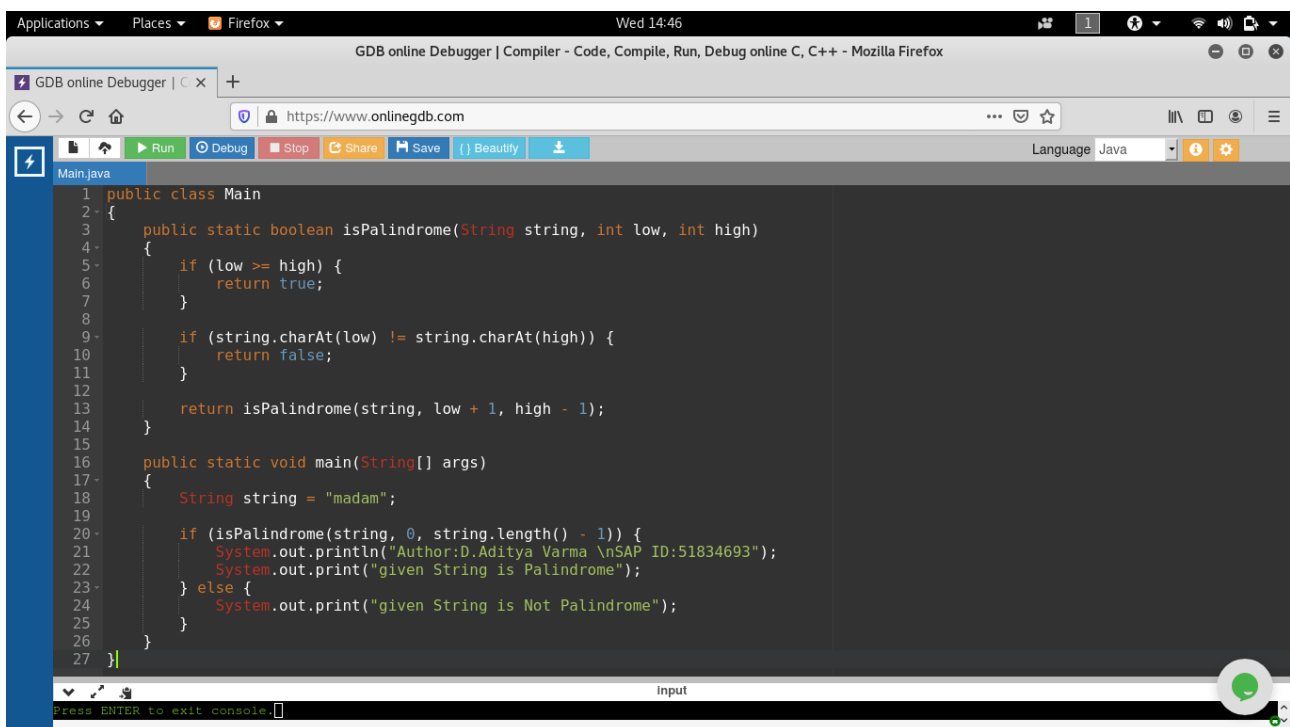
String string = "madam";

if (isPalindrome(string, 0, string.length() - 1)) {
    System.out.println("Author:D.Aditya Varma \nSAP ID:51834693");
    System.out.print("given String is Palindrome");
} else {
    System.out.print("given String is Not Palindrome");
}

}
}

```

Input Screen:



The screenshot shows the GDB online Debugger interface in a Firefox browser. The code editor displays the following Java code:

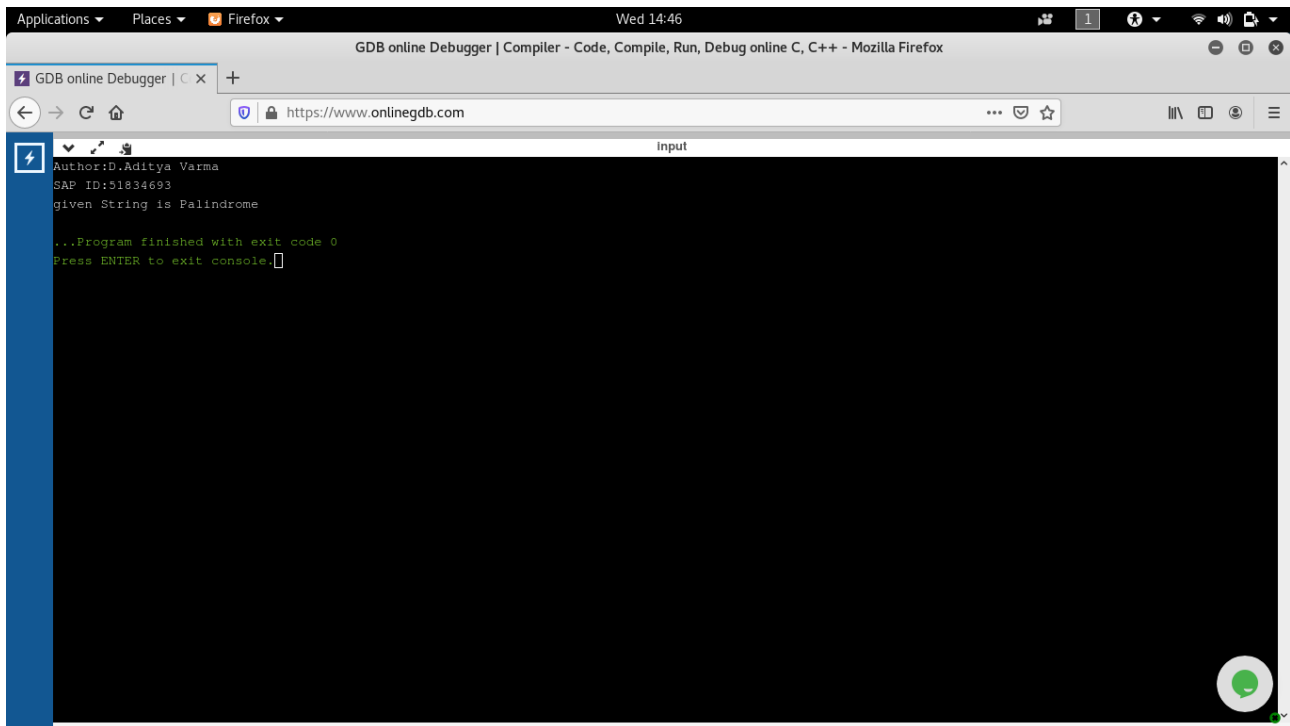
```

1 public class Main
2 {
3     public static boolean isPalindrome(String string, int low, int high)
4     {
5         if (low >= high) {
6             return true;
7         }
8
9         if (string.charAt(low) != string.charAt(high)) {
10            return false;
11        }
12
13        return isPalindrome(string, low + 1, high - 1);
14    }
15
16    public static void main(String[] args)
17    {
18        String string = "madam";
19
20        if (isPalindrome(string, 0, string.length() - 1)) {
21            System.out.println("Author:D.Aditya Varma \nSAP ID:51834693");
22            System.out.print("given String is Palindrome");
23        } else {
24            System.out.print("given String is Not Palindrome");
25        }
26    }
27 }

```

The interface includes a toolbar with buttons for Run, Debug, Stop, Share, and Save. The console at the bottom shows the input "Press ENTER to exit console:" and the output "Author:D.Aditya Varma \nSAP ID:51834693" followed by "given String is Palindrome".

Output Screen:



3)

```
import java.util.*;

public class Main
{
    public static void main (String[] args)
    {
        System.out.println("Author :D.Aditya Varma \n SAP ID:51834693");
        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 number are ; "+count);

}

}

```

Input Screen:

The screenshot shows the GDB online Debugger interface in a Mozilla Firefox browser. The browser's address bar displays the URL <https://www.onlinegdb.com>. The page title is "GDB online Debugger | Compiler - Code, Compile, Run, Debug online C, C++ - Mozilla Firefox". The interface includes a toolbar with buttons for Run, Debug, Stop, Share, Save, and Beautify. The code editor displays a Java program named "Main.java" with the following code:

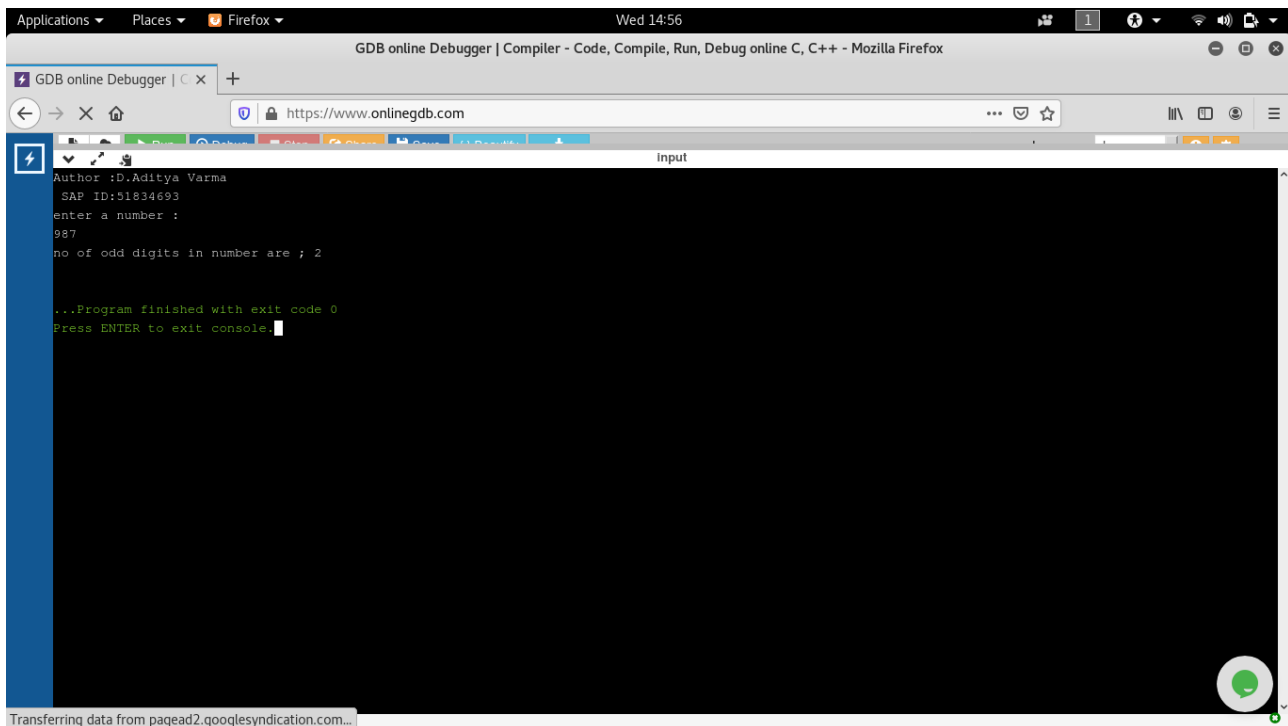
```

1 import java.util.*;
2 public class Main
3 {
4     public static void main (String[] args)
5     {
6         System.out.println("Author :D.Aditya Varma \n SAP ID:51834693");
7         int count=0;
8         int rem=0 ;
9         Scanner sc=new Scanner(System.in);
10        System.out.println("enter a number :");
11        int n= sc.nextInt();
12        while(n>0)
13        {
14            rem=n%10;
15            if(rem%2!=0)
16            {
17                count++;
18            }
19            n=n/10;
20        }
21        System.out.println("no of odd digits in number are ; "+count);
22    }
23 }
24 }
25 }

```

The language is set to "Java". At the bottom of the interface, there is a status bar that reads "Transferring data from pagead2.googlesyndication.com...".

Output Screen:



5)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:D.Aditya Varma\n SAP ID:51834693");
    System.out.println(Arrays.toString(arr));
}
}

```

Input Screen:

Output Screen:

```
Author:D.Aditya Varma
SAP ID:51834693
[0, 1, 2, 5, 7, 8, 9]

...Program finished with exit code 0
Press ENTER to exit console.
```