

```
1 import java.util.Scanner;
2 import java.lang.Math;
3 import java.util.InputMismatchException;
4 class Calculator
5 {
6     int add(int no1,int no2)
7     {
8         return no1+no2;
9     }
10    double add(double no1,double no2)
11    {
12        return no1+no2;
13    }
14    float add(float no1,float no2)
15    {
16        return no1+no2;
17    }
18    int sub(int no1,int no2)
19    {
20        return no1-no2;
21    }
22    double sub(double no1,double no2)
23    {
24        return no1-no2;
25    }
26    float sub(float no1,float no2)
27    {
28        return no1-no2;
29    }
30    int mul(int no1,int no2)
31    {
32        return no1*no2;
33    }
34    double mul(double no1,double no2)
35    {
36        return no1*no2;
37    }
38    float mul(float no1,float no2)
39    {
40        return no1*no2;
41    }
42    int div(int no1,int no2)
43    {
44        return no1/no2;
45    }
46    double div(double no1,double no2)
47    {
48        return no1/no2;
49    }
50    float div(float no1,float no2)
51    {
52        return no1/no2;
53    }
54    long power(int no1,int no2) throws Exception
55    {
56        if(no1<0 || no2<0)
57        {
58            throw new Exception("no1 or no2 can't be negative");
59        }
60        if(no1==0 || no2==0)
61        {
62            throw new Exception("no1 or no2 can't be zero");
63        }
64        return (long)Math.pow(no1,no2);
65    }
66 }
```

```

67 class Dcoder
68 {
69     public static void main(String args[])
70     {
71         Scanner sc=new Scanner(System.in);
72         Calculator c=new Calculator();
73         System.out.println("Author : J.Sri Sai Manc");
74         System.out.println("SAP ID : 51834596");
75         try
76         {
77             while(true)
78             {
79
80                 System.out.println("Choose your option\n1");
81                 int option=sc.nextInt();
82                 switch(option)
83                 {
84                     case 1 :
85                         System.out.println("Enter first number");
86                         double first=sc.nextInt();
87                         System.out.println("Enter second number");
88                         double second=sc.nextInt();
89                         System.out.println(first+second);
90                         break;
91                     case 2 :
92                         System.out.println("Enter first number");
93                         first=sc.nextInt();
94                         System.out.println("Enter second number");
95                         second=sc.nextInt();
96                         System.out.println(first-second);
97                         break;
98                     case 3 :
99                         System.out.println("Enter first number");
100                        first=sc.nextInt();
101                        System.out.println("Enter second number");
102                        second=sc.nextInt();
103                        if(first==0 && second==0)
104                        {
105                            throw new Exception("Both numbers cannot be zero");
106                        }
107                        System.out.println(first*second);
108                        break;
109                     case 4 :
110                         System.out.println("Enter first number");
111                         first=sc.nextInt();
112                         System.out.println("Enter second number");
113                         second=sc.nextInt();
114                         if(second==0)
115                         {
116                             throw new Exception("You cannot divide by zero");
117                         }
118                         System.out.println(first/second);
119                         break;
120                     case 5 :
121                         System.out.println("Enter the base number");
122                         int base=sc.nextInt();
123                         System.out.println("Enter the exponent");
124                         int exp=sc.nextInt();
125                         System.out.println(c.power(base,exp));
126                         break;
127                     case 6 :
128                         System.exit(0);
129                     default :
130                         System.out.println("Invalid input");
131                     }
132                 }
133             }
134         catch(InputMismatchException ime)
135         {
136             System.out.println("Invalid input");
137         }
138         catch(ArithmeticException ae)
139         {
140             System.out.println(ae.getMessage());
141         }
142         catch(Exception e)
143         {
144             System.out.println(e.getMessage());
145         }
146     }
147 }
```

```
X Terminal
Author : J.Sri Sai Manoj
SAP ID : 51834596
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
1
Enter first number :
55
Enter second number :
45
100.0
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
2
Enter first number :
20
Enter second number :
10
10.0
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
3
Enter first number :
3
Enter second number :
3
9.0
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
4
Enter first number :
10
Enter second number :
5
2.0
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
5
Enter the base number :
2
Enter the exponent :
3
8
Choose your option
1.add
2.subtract
3.multiply
4.Division
5.power
6.exit
```

```
1 import java.util.Scanner;
2 class Palindrome
3 {
4     public static boolean isPal(String str)
5     {
6         if(str.length() == 0 || str.length() ==
7             return true;
8         if(str.charAt(0) == str.charAt(str.length() - 1))
9             return isPal(str.substring(1, str.length() - 1));
10        return false;
11    }
12    public static void main(String[] args)
13    {
14        Scanner scanner = new Scanner(System.in);
15        System.out.println("Author : J.Sri Sai M.");
16        System.out.println("SAP ID : 51834596");
17        System.out.println("Enter the String:");
18        String string = scanner.nextLine();
19        string = string.toLowerCase();
20        System.out.println("Output: ");
21        if(isPal(string))
22            System.out.println(string + " is a palindrome");
23        else
24            System.out.println(string + " is not a palindrome");
25    }
26 }
```

## X Terminal



```
Author : J.Sri Sai Manoj  
SAP ID : 51834596  
Enter the String:  
Madam  
Output:  
madam is a palindrome
```

Process finished.

```
1 import java.util.*;
2 public class OddNumbers
3 {
4     public static void main (String[] args)
5     {
6         System.out.println("Author : J Sri Sai Manoj");
7         System.out.println("SAP ID : 51834596");
8         int count=0;
9         int rem=0 ;
10        Scanner sc=new Scanner(System.in);
11        System.out.println("Enter a number: ");
12        int n= sc.nextInt();
13        while(n>0)
14        {
15            rem=n%10;
16            if(rem%2!=0)
17            {
18                count++;
19            }
20            n=n/10;
21        }
22        System.out.println("Odd numbers in given number are: "+count);
23    }
24 }
25 }
```

## X Terminal



```
Author : J Sri Sai Manoj
SAP ID : 51834596
Enter a number:
912873465
Odd numbers in given number are: 5
```

```
Process finished.
```

```
1 class Pattern
2 {
3     public static void main(String args[])
4     {
5         System.out.println("Author : J Sri Sai Manoj");
6         System.out.println("SAP ID: 51834596");
7         int k=1;
8         for(int i=1;i<=5;i++)
9         {
10             for(int j=1;j<=i;j++)
11             {
12                 if(j==1)
13                 {
14                     k=j;
15                 }
16                 if(i!=4)
17                 {
18                     if(i%2==0)
19                     {
20                         if(j%2!=0)
21                         {
22                             k=j+1;
23                             System.out.print(k);
24                             k=k-1;
25                         }
26                         else
27                         {
28                             System.out.print(k);
29                         }
30                     }
31                 else
32                 {
33                     if(j%2==0)
34                     {
35                         k=j+1;
36                         System.out.print(k);
37                         k=k-1;
38                     }
39                     else
40                     {
41                         System.out.print(k);
42                     }
43                 }
44             }
45         else
46         {
47             System.out.print(j);
48         }
49     }
50     System.out.println();
51 }
52 }
53 }
```

## X Terminal



Author : J Sri Sai Manoj

SAP ID: 51834596

1

21

132

1234

13254

Process finished.

```
1 class BubbleSort
2 {
3     public static void main (String[] args)
4     {
5         System.out.println("Author : J Sri Sai Manoj");
6         System.out.println("SAP ID: 51834596");
7         int a[] = {12, 16, 3, 20, 33, 42, 19};
8         for(int j = 0; j<a.length; j++)
9         {
10             boolean swapped = false;
11             int i = 0;
12             while(i<7-1)
13             {
14                 if (a[i] > a[i+1])
15                 {
16                     int temp = a[i];
17                     a[i] = a[i+1];
18                     a[i+1] = temp;
19                     swapped = true;
20                 }
21                 i++;
22             }
23             if (!swapped)
24                 break;
25         }
26         System.out.println("After Bubble Sorting:");
27         for(int x : a)
28         {
29             System.out.print(x+" ");
30         }
31     }
32 }
```

## X Terminal



```
Author : J Sri Sai Manoj
SAP ID: 51834596
After Bubble Sorting:
3 12 16 19 20 33 42
Process finished.
```