CSE1007: Java Programming

SLOT: L53+L54

Faculty: JAISANKAR N

LAB Assessment- 1

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1. **Write a Java program to perform basic arithmetic operations of two numbers.**

   Method 1:

```
import java.util.*;
public class Prog1
{
  public static void main(String args[])
  {
    int first, second, add, subtract, multiply;
    float divide;
    Scanner scanner = new Scanner(System.in);
    System.out.print("Enter Two Numbers : ");
       first = scanner.nextInt();
       second = scanner.nextInt();

    add = first + second;
    subtract = first - second;
    multiply = first * second;
    divide = (float) first / second;

    System.out.println("Sum = " + add);
    System.out.println("Difference = " + subtract);
    System.out.println("Multiplication = " + multiply);
    System.out.println("Division = " + divide);
  }
```

```
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog1.java

C:\vit\kandra ksheeraj\AS-1>java Prog1
Enter Two Numbers : 5
2
Sum = 7
Difference = 3
Multiplication = 10
Division = 2.5

C:\vit\kandra ksheeraj\AS-1>java Prog1
Enter Two Numbers : 4
9
Sum = 13
Difference = -5
Multiplication = 36
Division = 0.44444445
```

Method 2:

```
import java.util.*;
public class Prog2s1
{
   public static void main(String[] args) {
      double num1;
      double num2;
      double ans;
      char op;
      Scanner reader = new Scanner(System.in);
      System.out.print("Enter two numbers: ");
       num1 = reader.nextDouble();
       num2 = reader.nextDouble();
System.out.print("\nEnter an operator (+, -, *, /): ");
      op = reader.next().charAt(0);
      switch(op) {
         case '+': ans = num1 + num2;
            break;
         case '-': ans = num1 - num2;
            break;
         case '*': ans = num1 * num2;
            break;
```

```
          case '/': ans = num1 / num2;
             break;
      default: System.out.printf("Error! Enter correct
operator");
          return;
       }
System.out.print("\nThe result is given as follows:\n");
System.out.printf(num1 + " " + op + " " + num2 + " = " +
ans);
    }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog2s1.java

C:\vit\kandra ksheeraj\AS-1>java Prog2s1
Enter two numbers: 5
8

Enter an operator (+, -, *, /): +

The result is given as follows:
5.0 + 8.0 = 13.0
C:\vit\kandra ksheeraj\AS-1>java Prog2s1
Enter two numbers: 9
8

Enter an operator (+, -, *, /): -

The result is given as follows:
9.0 - 8.0 = 1.0
C:\vit\kandra ksheeraj\AS-1>java Prog2s1
Enter two numbers: 4
6

Enter an operator (+, -, *, /): *

The result is given as follows:
4.0 * 6.0 = 24.0
C:\vit\kandra ksheeraj\AS-1>java Prog2s1
Enter two numbers: 9
3

Enter an operator (+, -, *, /): /

The result is given as follows:
9.0 / 3.0 = 3.0
```

2. Write a Java program to perform operation (Addition, Subtraction, Multiplication, Division) without using third variable

```
import java.util.*;
public class Prog2
{
   public static void main(String[] args) {
        Scanner sc=new Scanner(System.in);
   System.out.println("Enter a");
        int  a =sc.nextInt();
   System.out.println("Enter b");
        int  b =sc.nextInt();
   System.out.println("Addition");
        System.out.println(a+b);
   System.out.println("Subtraction");
        System.out.println(a-b);
   System.out.println("Multiplication");
        System.out.println(a*b);
   System.out.println("Division");
        System.out.println(a/b);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog2.java

C:\vit\kandra ksheeraj\AS-1>java Prog2
Enter a
14
Enter b
2
Addition
16
Subtraction
12
Multiplication
28
Division
7

C:\vit\kandra ksheeraj\AS-1>java Prog2
Enter a
5
Enter b
15
Addition
20
Subtraction
-10
Multiplication
75
Division
0
```

3. **Write a Java program to perform Multiplication of two numbers without using * operator**

```
import java.util.*;
public class Prog3
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);

        System.out.print("Enter Two Numbers : ");
        int  a =sc.nextInt();
        int  b =sc.nextInt();

        int c=0;
        for(int i=0;i<b; i++){
             c=c+a;
        }
        System.out.println(c);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog3.java

C:\vit\kandra ksheeraj\AS-1>java Prog3
Enter Two Numbers : 5
8
40

C:\vit\kandra ksheeraj\AS-1>java Prog3
Enter Two Numbers : 4
6
24
```

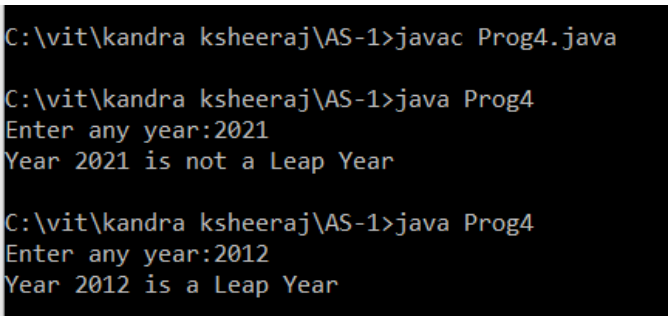
4. **Write a Java program to check the year is leap year or not**

```
import java.util.*;

public class Prog4
{
   public static void main(String[] args) {
        Scanner s = new Scanner(System.in);
```

```
 System.out.print("Enter any year:");
 int year = s.nextInt();
 boolean flag = false;
 if(year % 400 == 0)
 {
  flag = true;
 }
 else if (year % 100 == 0)
 {
  flag = false;
 }
 else if(year % 4 == 0)
 {
  flag = true;
 }
 else
 {
  flag = false;
 }
 if(flag)
 {
  System.out.println("Year "+year+" is a Leap Year");
 }
 else
 {
  System.out.println("Year "+year+" is not a Leap
Year");
 }
  }
}
```

Sample Output:



5. Write a Java program to print multiplication Table (1 to 15)

```
import java.util.*;
public class Prog5
{
  public static void main(String[] args) {
   for(int i=1;i<16;i++){
   System.out.printf("\n");
     for(int j=1;j<11;j++){
        System.out.printf("%d * %d = %d\n",i,j,i*j);
        }
     }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog5.java

C:\vit\kandra ksheeraj\AS-1>java Prog5

1 * 1 = 1
1 * 2 = 2
1 * 3 = 3
1 * 4 = 4
1 * 5 = 5
1 * 6 = 6
1 * 7 = 7
1 * 8 = 8
1 * 9 = 9
1 * 10 = 10

2 * 1 = 2
2 * 2 = 4
2 * 3 = 6
2 * 4 = 8
2 * 5 = 10
2 * 6 = 12
2 * 7 = 14
2 * 8 = 16
2 * 9 = 18
2 * 10 = 20

3 * 1 = 3
3 * 2 = 6
3 * 3 = 9
3 * 4 = 12
3 * 5 = 15
3 * 6 = 18
3 * 7 = 21
3 * 8 = 24
3 * 9 = 27
3 * 10 = 30
```

```
13 * 1 = 13
13 * 2 = 26
13 * 3 = 39
13 * 4 = 52
13 * 5 = 65
13 * 6 = 78
13 * 7 = 91
13 * 8 = 104
13 * 9 = 117
13 * 10 = 130

14 * 1 = 14
14 * 2 = 28
14 * 3 = 42
14 * 4 = 56
14 * 5 = 70
14 * 6 = 84
14 * 7 = 98
14 * 8 = 112
14 * 9 = 126
14 * 10 = 140

15 * 1 = 15
15 * 2 = 30
15 * 3 = 45
15 * 4 = 60
15 * 5 = 75
15 * 6 = 90
15 * 7 = 105
15 * 8 = 120
15 * 9 = 135
15 * 10 = 150
```

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6. Write a Java Program to print ASCII Table

```
import java.util.*;
public class Prog6
{
  public static void main(String[] args) {
   for(int i=0;i<128;i++) {
     System.out.printf("%c : %d\n",i,i);
   }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog6.java

C:\vit\kandra ksheeraj\AS-1>java Prog6
  : 0
 : 1
 : 2
 : 3
 : 4
 : 5
 : 6
  : 7
  : 8
         : 9

  : 10
 : 11
 : 12
  : 13
 : 14
 : 15
 : 16
 : 17
 : 18
 : 19
 : 20
 : 21
 : 22
 : 23
 : 24
 : 25
 : 26
 : 27
 : 28
 : 29
 : 30
 : 31
   : 32
! : 33
" : 34
# : 35
$ : 36
% : 37
& : 38
' : 39
```

```
A : 65
B : 66
C : 67
D : 68
E : 69
F : 70
G : 71
H : 72
I : 73
J : 74
K : 75
L : 76
M : 77
N : 78
O : 79
P : 80
Q : 81
R : 82
S : 83
T : 84
U : 85
V : 86
W : 87
X : 88
Y : 89
Z : 90
```

```
a : 97
b : 98
c : 99
d : 100
e : 101
f : 102
g : 103
h : 104
i : 105
j : 106
k : 107
l : 108
m : 109
n : 110
o : 111
p : 112
q : 113
r : 114
s : 115
t : 116
u : 117
v : 118
w : 119
x : 120
y : 121
z : 122
{ : 123
| : 124
} : 125
~ : 126
 : 127
```

7. **Write a Java program to Calculate and Display the sum of 4 digits number**

```
import java.util.*;
public class Prog7
{
public static void main(String[] args) {
   Scanner sc = new Scanner(System.in);
   System.out.println("Enter n: ");
        int n=sc.nextInt();
        int sum=0;
        while(n!=0) {
             sum=sum+n%10;
             n=n/10;
 }
   System.out.println("sum : ");
   System.out.println(sum);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog7.java

C:\vit\kandra ksheeraj\AS-1>java Prog7
Enter n:
1761
sum :
15

C:\vit\kandra ksheeraj\AS-1>java Prog7
Enter n:
8999
sum :
35
```

8. **Write a Java program to Obtain the sum of first and last digit of four digit number**

```
import java.util.*;
public class Prog8
{
   public static void main(String[] args) {
```

```
      System.out.println("Enter 4 digit number: ");
   Scanner sc = new Scanner(System.in);
   int n=sc.nextInt();
   String s=Integer.toString(n);
System.out.println("sum : ");
System.out.println(Character.getNumericValue(s.charAt(0)
)+Character.getNumericValue(s.charAt(s.length()-1)));
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog8.java

C:\vit\kandra ksheeraj\AS-1>java Prog8
Enter 4 digit number:
1023
sum :
4

C:\vit\kandra ksheeraj\AS-1>java Prog8
Enter 4 digit number:
5999
sum :
14
```

9. **Write a Java program to check whether given number is Armstrong or not**

```
import java.util.*;
public class Prog9
{
   public static void main(String[] args) {
   Scanner sc = new Scanner(System.in);
   System.out.println("Enter n value:");
   int n=sc.nextInt();
   int temp=n;
   String s=Integer.toString(n);
   int l=s.length();
   int sum=0;
   while(n!=0) {
     sum=sum+(int)Math.pow(n%10,l);
     n=n/10;
```

```
    }
    if(temp==sum)
         System.out.println("Yes it is Amstrong");
    else
         System.out.println("Not Amstrong");
    }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog9.java

C:\vit\kandra ksheeraj\AS-1>java Prog9
Enter n value:
153
Yes it is Amstrong

C:\vit\kandra ksheeraj\AS-1>java Prog9
Enter n value:
120
Not Amstrong
```

10. Write a Java program to print Fibonacci Series

```
import java.util.*;
public class Prog10
{
  public static void main(String[] args) {
  Scanner sc = new Scanner(System.in);
   System.out.println("Enter n value:");
   int n1=0,n2=1,n3,i,count=sc.nextInt();
   System.out.println("Fibonacci series:");
   System.out.print(n1+" "+n2);
   for(i=2;i<count;++i)
   {
   n3=n1+n2;
   System.out.print(" "+n3);
    n1=n2;
   n2=n3;
   }
  }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog10.java

C:\vit\kandra ksheeraj\AS-1>java Prog10
Enter n value:
10
Fibonacci series:
0 1 1 2 3 5 8 13 21 34
C:\vit\kandra ksheeraj\AS-1>java Prog10
Enter n value:
16
Fibonacci series:
0 1 1 2 3 5 8 13 21 34 55 89 144 233 377 610
```

11. Write a Java program to print Factorial of Number

```
import java.util.*;
public class Prog11
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
      System.out.println("Enter n value:");
   int n=sc.nextInt();
   int fact=2;
   System.out.println("Factorial:");
   for(int i=3;i<=n;i++) {
        fact=fact*i;
   }
   System.out.println(fact);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog11.java

C:\vit\kandra ksheeraj\AS-1>java Prog11
Enter n value:
8
Factorial:
40320

C:\vit\kandra ksheeraj\AS-1>java Prog11
Enter n value:
5
Factorial:
120
```

12. Write a Java program to swap two numbers using third variable

```
import java.util.*;
public class Prog12
{
   public static void main(String[] args) {
   Scanner sc = new Scanner(System.in);
   System.out.println("Enter a");
        int a=sc.nextInt();
   System.out.println("Enter b");
        int b=sc.nextInt();
  int c;
   c=a;
   a=b;
   b=c;
System.out.println("a=");
   System.out.println(a);
System.out.println("b=");
   System.out.println(b);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog12.java

C:\vit\kandra ksheeraj\AS-1>java Prog12
Enter a
8
Enter b
1
a=
1
b=
8
```

13. Write a Java program to calculate the power of Number

```
import java.util.*;
public class Prog13
{
   public static void main(String[] args) {
```

```
   Scanner sc = new Scanner(System.in);
      System.out.println("Enter n value:");

         int n=sc.nextInt();
System.out.println("Enter power value:");
         int p=sc.nextInt();
         int ans=1;
         for(int i=0;i<p;i++){
         ans=ans*n;
   }
  System.out.println("Pth power of n");
   System.out.println(ans);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog13.java

C:\vit\kandra ksheeraj\AS-1>java Prog13
Enter n value:
8
Enter power value:
2
Pth power of n
64

C:\vit\kandra ksheeraj\AS-1>java Prog13
Enter n value:
5
Enter power value:
3
Pth power of n
125
```

14. Write a Java program to find sum of all digits between 10 and 50, which are divisible by 3

```
import java.util.*;
public class Prog14
{
   public static void main(String[] args) {
   int sum=0;
   for(int i=11;i<50;i++){
```

```
      if(i%3==0){
         sum=sum+i;
      }
      }
  System.out.println("sum of all digits between 10 and 50,
which are divisible by 3 is");

     System.out.println(sum);
     }
  }
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog14.java

C:\vit\kandra ksheeraj\AS-1>java Prog14
sum of all digits between 10 and 50, which are divisible by 3 is
390
```

15. Write a Java program to find out all odd numbers divisible by 5 from the range of integers 200 to 800

```
import java.util.*;
public class Prog15
{
   public static void main(String[] args) {
System.out.println("All odd numbers from 200 to 800
which are divisible by 5 is ");
   for(int i=201;i<800;i++){
        if(i%5==0 && i%2==1){
        System.out.print(" "+i);
     }
    }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog15.java

C:\vit\kandra ksheeraj\AS-1>java Prog15
All odd numbers from 200 to 800 which are divisible by 5 is
 205 215 225 235 245 255 265 275 285 295 305 315 325 335 345 355 365 375 385 395 405 415 425 435 445 455 465 475 485 495
 505 515 525 535 545 555 565 575 585 595 605 615 625 635 645 655 665 675 685 695 705 715 725 735 745 755 765 775 785 795
```

16. Write a Java Program to read the number and check whether it is divisible by 3 and 5

```
import java.util.*;
public class Prog16
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
   System.out.println("Enter n:");
   int n=sc.nextInt();
   if(n%3==0 && n%5==0){
   System.out.println("Yes,it is divisible by 3 and 5");
   }
 else{
   System.out.println("Not divisible by 3 and 5");
     }
    }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog16.java

C:\vit\kandra ksheeraj\AS-1>java Prog16
604
Not divisible by 3 and 5

C:\vit\kandra ksheeraj\AS-1>javac Prog16.java

C:\vit\kandra ksheeraj\AS-1>java Prog16
Enter n:
15
Yes,it is divisible by 3 and 5

C:\vit\kandra ksheeraj\AS-1>java Prog16
Enter n:
24
Not divisible by 3 and 5

C:\vit\kandra ksheeraj\AS-1>java Prog16
Enter n:
20
Not divisible by 3 and 5

C:\vit\kandra ksheeraj\AS-1>java Prog16
Enter n:
19
Not divisible by 3 and 5
```

17. Write a Java Program to display Subject Name based on room number. If the user enters 604 then display Java Programming, If the user enters 605 then display Python programming for any other input display Invalid input to the user

```
import java.util.*;
public class Prog17
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
      System.out.println("Enter room number:");
   int n=sc.nextInt();
   switch(n){
        case 604:System.out.println("Java programming");
        break;
        case 605:System.out.println("Python");
        break;
        default:System.out.println("Invalid");
        }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog17.java

C:\vit\kandra ksheeraj\AS-1>java Prog17
Enter room number:
604
Java programming

C:\vit\kandra ksheeraj\AS-1>java Prog17
Enter room number:
605
Python

C:\vit\kandra ksheeraj\AS-1>java Prog17
Enter room number:
620
Invalid
```

18. Write a Java Program to print the sum of first n numbers. If n is 3 then print the sum of 1+2+3 to the user. Get n from the user

```
import java.util.*;
public class Prog18
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
      System.out.println("Enter n value:");
   int n=sc.nextInt();
  System.out.println("Sum of numbers till n:");
   System.out.println(n*(n+1)/2);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog18.java

C:\vit\kandra ksheeraj\AS-1>java Prog18
Enter n value:
6
Sum of numbers till n:
21
```

19. Write a Java Program to print the sum of the series $1^2+2^2+3^2$ up to n terms

```
import java.util.*;
public class Prog19
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
   System.out.println("Enter n value:");
   int n=sc.nextInt();
  System.out.println("Sum of squares till n:");
   System.out.println(n*(n+1)*(2*n+1)/6);
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog19.java

C:\vit\kandra ksheeraj\AS-1>java Prog19
Enter n value:
4
Sum of squares till n:
30
```

20. Write a Java Program to print the multiplication table by getting the n from the user.

```
import java.util.*;
public class Prog20
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
      System.out.println("Enter n value:");
   int n=sc.nextInt();
   for(int i=1;i<11;i++){
        System.out.println(n+" * "+i+" = "+n*i);
   }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog20.java

C:\vit\kandra ksheeraj\AS-1>java Prog20
Enter n value:
7
7 * 1 = 7
7 * 2 = 14
7 * 3 = 21
7 * 4 = 28
7 * 5 = 35
7 * 6 = 42
7 * 7 = 49
7 * 8 = 56
7 * 9 = 63
7 * 10 = 70
```

21. Write a Java Program to provide the option of adding two numbers to the user until the user ends

```
import java.util.*;
public class Prog21
{
   public static void main(String[] args) {
   Scanner sc=new Scanner(System.in);
   while(true){
   System.out.println("Press 0 to end");
   System.out.println("Press 1 to add two numbers");
   int c=sc.nextInt();
        if(c==0){
        System.out.println("ended");
        break;
   }
System.out.println("Enter 1st number:");
    int a=sc.nextInt();
System.out.println("Enter 2nd number:");
   int b=sc.nextInt();
System.out.println("sum:",a+b);
     }
   }
}
```

Sample Output:

```
C:\vit\kandra ksheeraj\AS-1>javac Prog21.java

C:\vit\kandra ksheeraj\AS-1>java Prog21
Press 0 to end
Press 1 to add two numbers
1
Enter 1st number:
7
Enter 2nd number:
6
sum:
13
Press 0 to end
Press 1 to add two numbers
1
Enter 1st number:
14
Enter 2nd number:
5
sum:
19
Press 0 to end
Press 1 to add two numbers
0
ended
```