CSE 1007

JAVA Programming

LAB ASSESSMENT - 1

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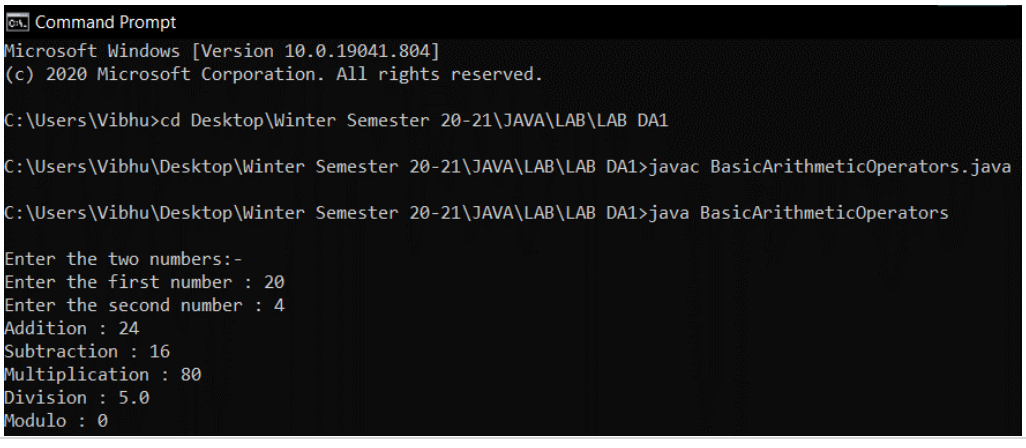
1. **Write a Java program to perform basic arithmetic operations of two numbers.**

Ans 1)

CODE:

```
import java.util.Scanner;
public class BasicArithmeticOperators
{
  public static void main(String args[])
  {
     Scanner s = new Scanner(System.in);
     System.out.println("");
     System.out.println("Enter the two numbers:-");
     System.out.print("Enter the first number : ");
     int x = s.nextInt();
     System.out.print("Enter the second number : ");
     int y = s.nextInt();

     int add;
     add = x + y;
     System.out.println("Addition : "+add);

     int sub;
     sub = x - y;
     System.out.println("Subtraction : "+sub);

     int mul;
     mul = x * y;
     System.out.println("Multiplication : "+mul);

     float div;
     div = (float) x / y;
     System.out.println("Division : "+div);

     int mod;
     mod = x % y;
     System.out.println("Modulo : "+mod);
  }
}
```

Output:



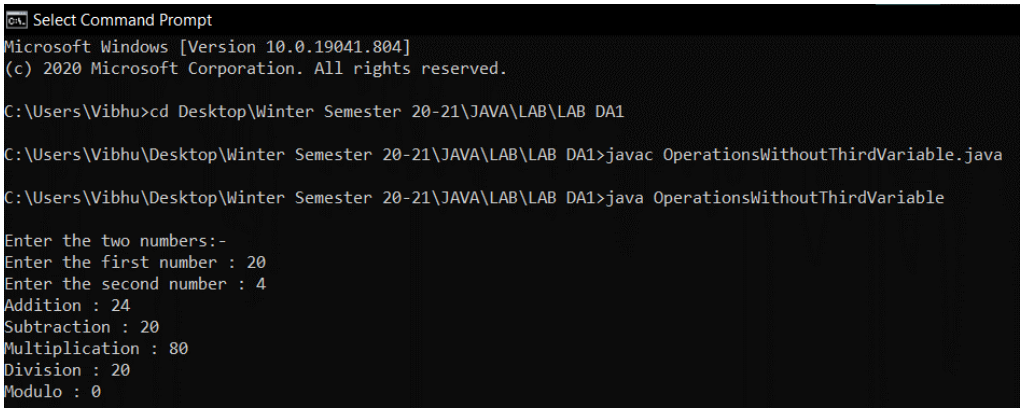
2. Write a Java program to perform operation (Addition, Subtraction, Multiplication, Division) without using third variable.

Ans 2)

CODE:

```
import java.util.Scanner;
public class OperationsWithoutThirdVariable
{
  public static void main(String args[])
  {
     Scanner s=new Scanner(System.in);
     System.out.println("");
     System.out.println("Enter the two numbers:-");
     System.out.print("Enter the first number: ");
     int x=s.nextInt();
     System.out.print("Enter the second number: ");
     int y=s.nextInt();

     x=x+y;
     System.out.println("Addition : "+x);

     x=x-y;
     System.out.println("Subtraction : "+x);

     x=x*y;
     System.out.println("Multiplication : "+x);

     x= x/y;
     System.out.println("Division : "+x);

     x=x%y;
     System.out.println("Modulo : "+x);
   }
}
```

Output:



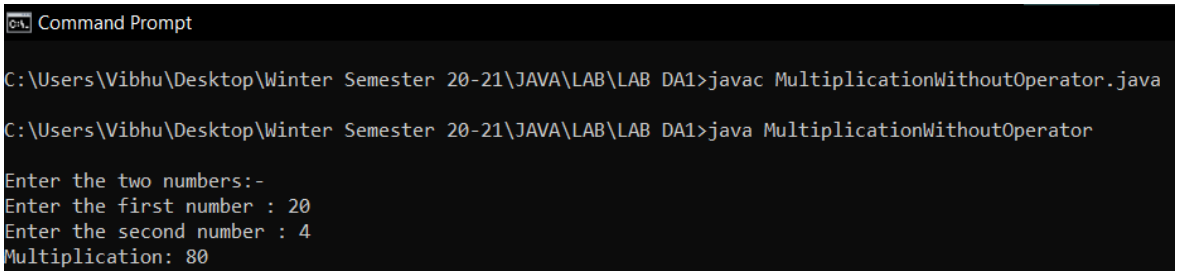
3. Write a Java program to perform Multiplication of two numbers without using * operator.

Ans 3)

CODE:

```
import java.util.Scanner;
public class MultiplicationWithoutOperator
{
  public static void main(String args[])
  {
     Scanner s=new Scanner(System.in);
     System.out.println("");
     System.out.println("Enter the two numbers:-");
     System.out.print("Enter the first number: ");
     int x=s.nextInt();
     System.out.print("Enter the second number: ");
     int y=s.nextInt();
     int z=0;

     while(x!=0)
     {
        z+=y;
        x--;
     }
     System.out.print("Multiplication: "+z);
  }
}
```

Output:



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

Ans 4)

CODE:

```
import java.util.Scanner;
public class LeapYear
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.print("");
      boolean leap=false;
      System.out.print("Enter the year: ");
```

```
        int x=s.nextInt();
        if(x%4==0)
        {
           leap=true;
           if(x%100==0 && x%400!=0)
           {
              leap=false;
           }
        }
        if(leap==true)
        {
           System.out.println(x+" is a leap year.");
        }
        else
        {
           System.out.println(x+" is not a leap year.");
        }
     }
}
```

Output:

```
Command Prompt

C:\Users\Vibhu\Desktop\Winter Semester 20-21\JAVA\LAB\LAB DA1>javac LeapYear.java

C:\Users\Vibhu\Desktop\Winter Semester 20-21\JAVA\LAB\LAB DA1>java LeapYear
Enter the year: 2100
2100 is not a leap year.
```

---

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

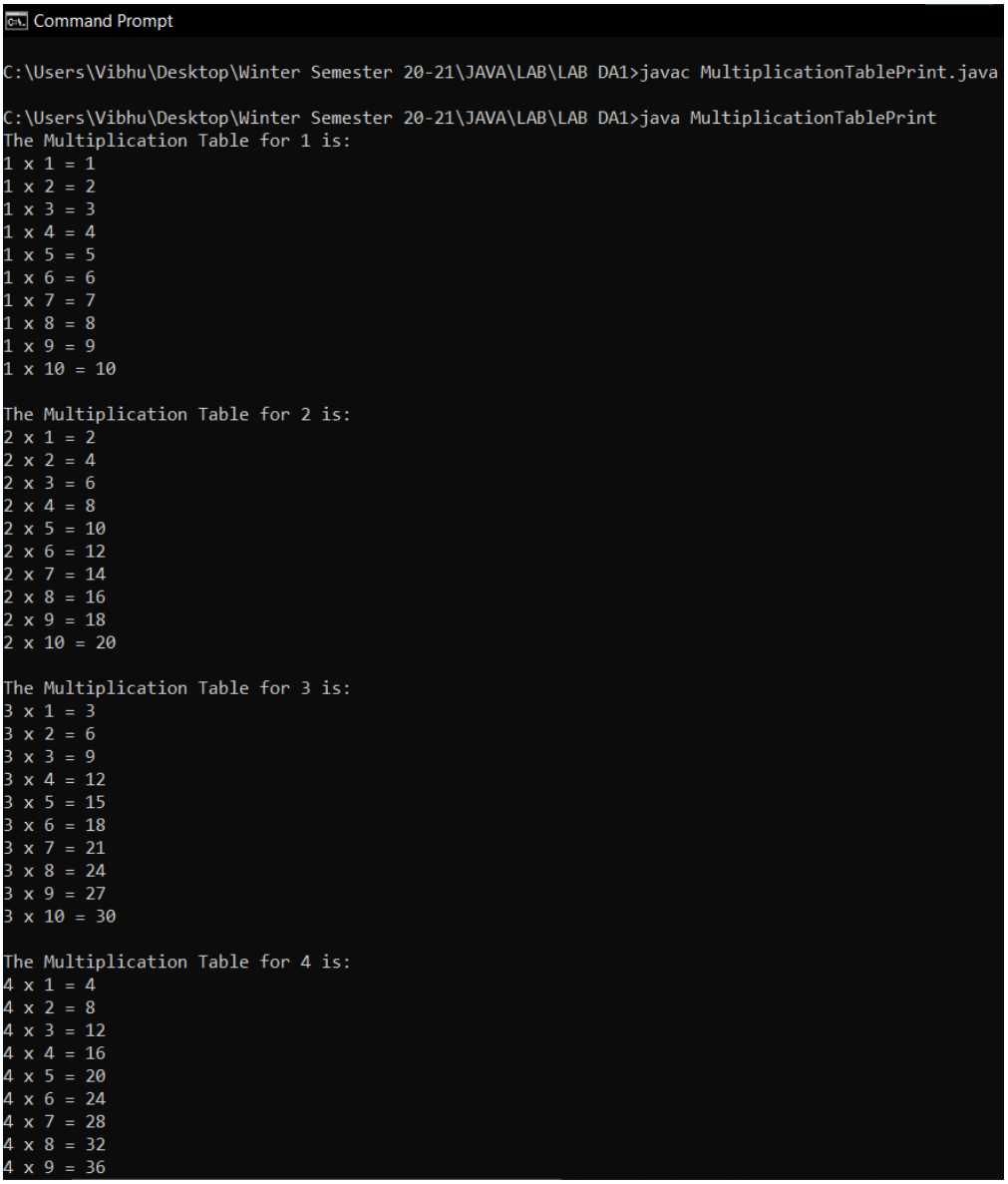
Ans 5)

CODE:

```
import java.util.Scanner;
public class MultiplicationTablePrint
{

   public static void main(String[] args)
   {
      for(int j=1;j<16;j++)
      {
         System.out.print("The Multiplication Table for "+j+" is:\n");
         for (int i=0;i<10;i++)
         {
            System.out.println(j+ " x " + (i+1) + " = " + (j * (i+1)));
         }
         System.out.print("\n");
      }
   }
}
```

Output:



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6. Write a Java Program to print ASCII Table.

Ans 6)

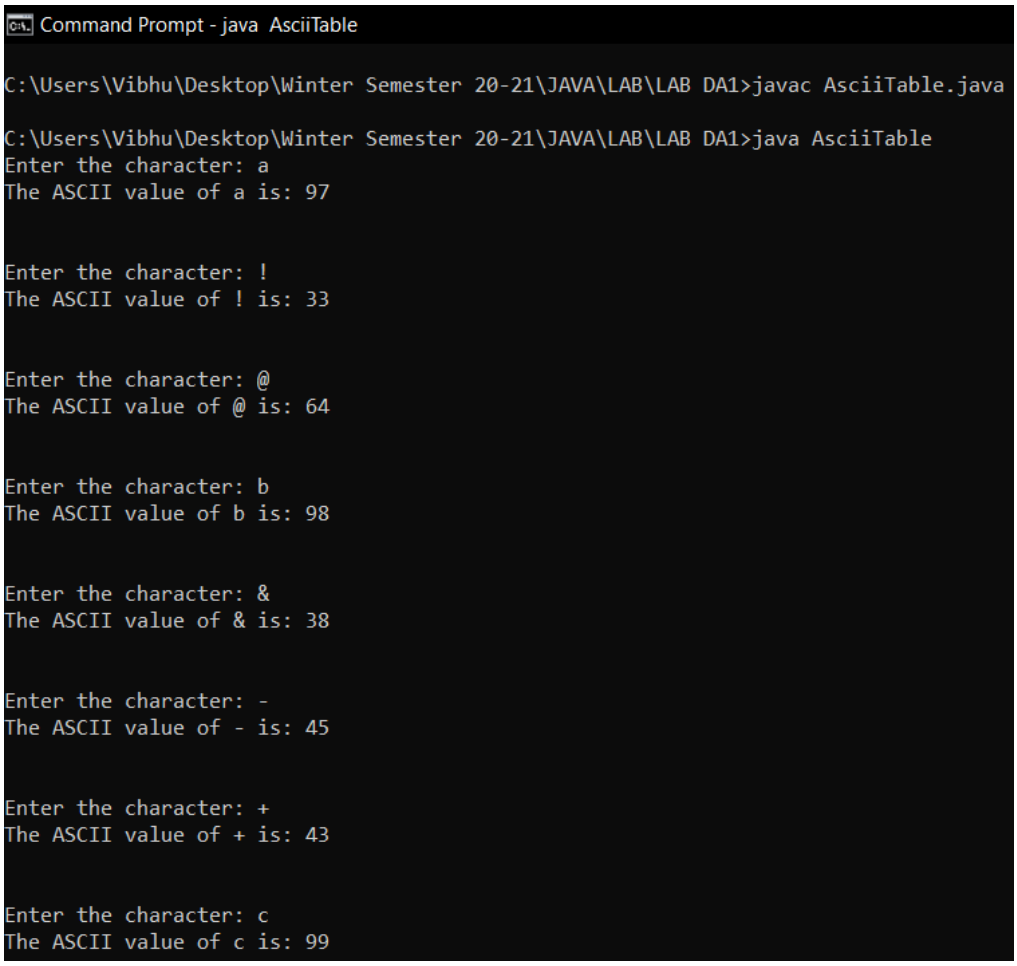
CODE:

```
import java.util.Scanner;
public class AsciiTable
{
   public static void main(String[] args)
   {
      Scanner s=new Scanner(System.in);
      while(true)
      {
         System.out.print("Enter the character: ");
         char c=s.next().charAt(0);
         int asciivalue=c;
```

```
            System.out.println("The ASCII value of " + c + " is: " + asciivalue);
        }

    }
}
```

Output:



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

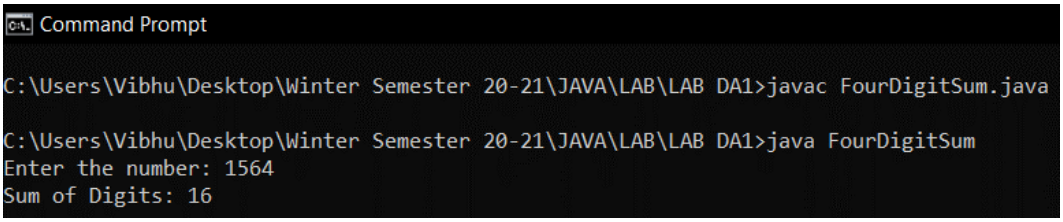
Ans 7)

CODE:

```
import java.util.Scanner;
public class FourDigitSum
{
   public static void main(String args[])
   {
      int m,n,sum=0;
      Scanner s=new Scanner(System.in);
      System.out.print("Enter the number: ");
      m=s.nextInt();
      while(m>0)
      {
```

```
            n=m%10;
            sum=sum+n;
            m=m/10;
        }
        System.out.println("Sum of Digits: "+sum);
    }
}
```

Output:



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

Ans 8)

CODE:

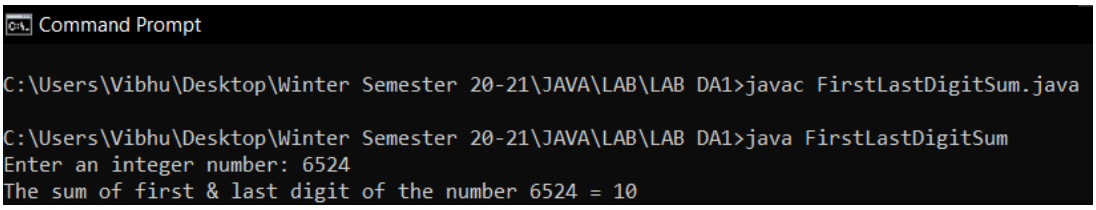
```
import java.util.Scanner;
public class FirstLastDigitSum
{
    private static int FirstLastDigitSum(int number)
    {
        int lastDigit, firstDigit, divisor;
        int totalDigits = 0;
        int sum = 0;
        lastDigit = number%10;
        totalDigits = findDigits(number);
        divisor = (int)Math.pow(10, totalDigits-1);
        firstDigit = number / divisor;
        sum = firstDigit + lastDigit;
        return sum;
    }

    private static int findDigits(int number)
    {
        int count = 0;
        while(number!=0)
        {
            count++;
            number = number/10;
        }
        return count;
    }

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

```
        int number = 0;
        int sum = 0;
        Scanner scan =  new Scanner(System.in);
        System.out.print("Enter an integer number: ");
        number = scan.nextInt();
        sum = FirstLastDigitSum(number);
        System.out.println("The sum of first & last"+" digit of the number "+number+" = "+sum);
        scan.close();
    }
}
```

Output:



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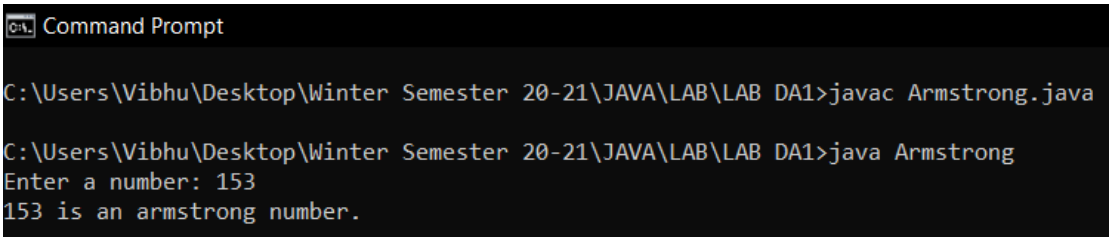
9. Write a Java program to check whether given number is Armstrong or not.

Ans 9)

CODE:

```
import java.util.Scanner;
public class Armstrong
{
    public static void main(String[] args)
    {
        Scanner s=new Scanner(System.in);
        int c=0,a,temp;
        System.out.print("Enter a number: ");
        int n=s.nextInt();
        temp=n;
        while(n>0)
        {
            a=n%10;
            n=n/10;
            c=c+(a*a*a);
        }
        if(temp==c)
            System.out.println(temp+" is an armstrong number.");
        else
            System.out.println(temp+" is not an armstrong number.");
    }
}
```

Output:



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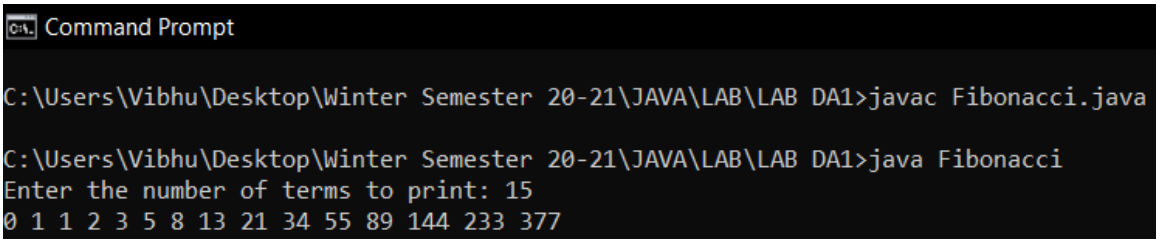
10. Write a Java program to print Fibonacci Series.

Ans 10)

CODE:

```
import java.util.Scanner;
public class Fibonacci
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      int n,n1=0,n2=1;
      System.out.print("Enter the number of terms to print: ");
      n=s.nextInt();
      System.out.print(n1+" "+n2+" ");
      for(int i=2;i<n;i++)
      {
         int n3=n1+n2;
         System.out.print(n3+" ");
         n1=n2;
         n2=n3;
      }
   }
}
```

Output:



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11. Write a Java program to print Factorial of Number.

Ans 11)

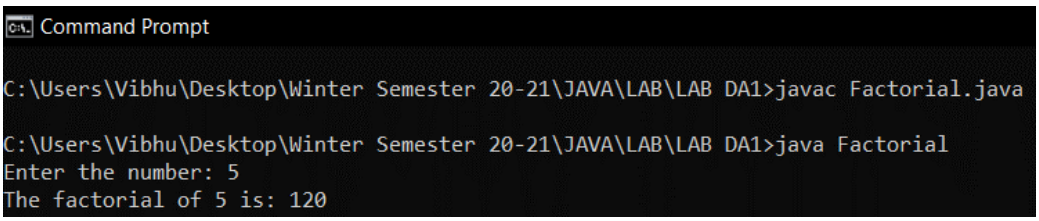
CODE:

```
import java.util.Scanner;
public class Factorial
{
```

```
    private static int Fact(int n)
    {
        int factorial=1;
        if(n==0 || n==1)
        {
            return 1;
        }
        for(int i=n;i>=2;i--)
        {
            factorial=factorial*i;
        }
        return factorial;
    }

    public static void main(String args[])
    {
        Scanner s=new Scanner(System.in);
        System.out.print("Enter the number: ");
        int n=s.nextInt();
        System.out.print("The factorial of "+n+" is: "+Fact(n));
    }
}
```

Output:



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

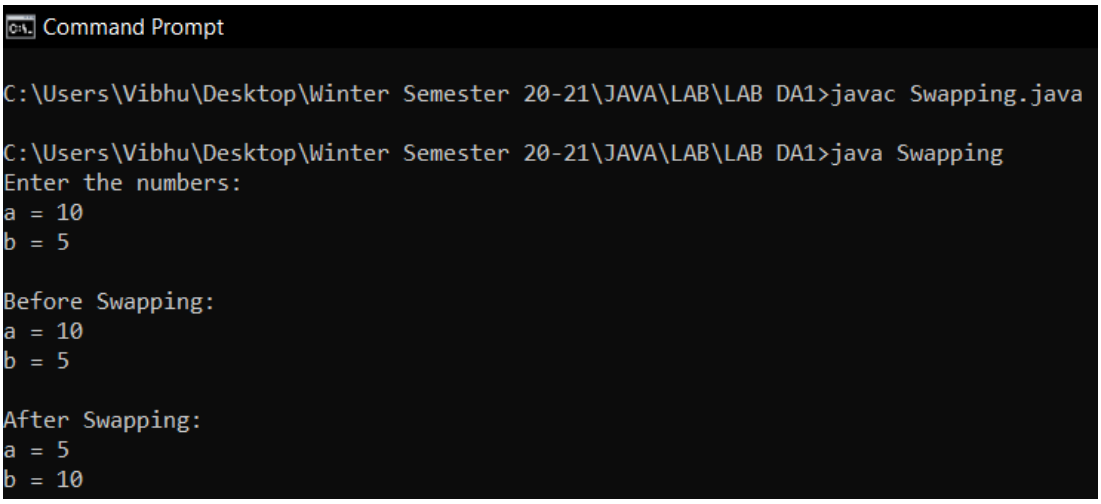
Ans 12)

CODE:

```
import java.util.Scanner;
public class Swapping
{
    public static void main(String args[])
    {
        Scanner s=new Scanner(System.in);
        System.out.println("Enter the numbers: ");
        System.out.print("a = ");
        int a=s.nextInt();
        System.out.print("b = ");
        int b=s.nextInt();
        System.out.print("\nBefore Swapping:\na = "+a+"\nb = "+b);
        int temp=a;
        a=b;
        b=temp;
        System.out.print("\n\nAfter Swapping:\na = "+a+"\nb = "+b);
```

```
    }
}
```

Output:



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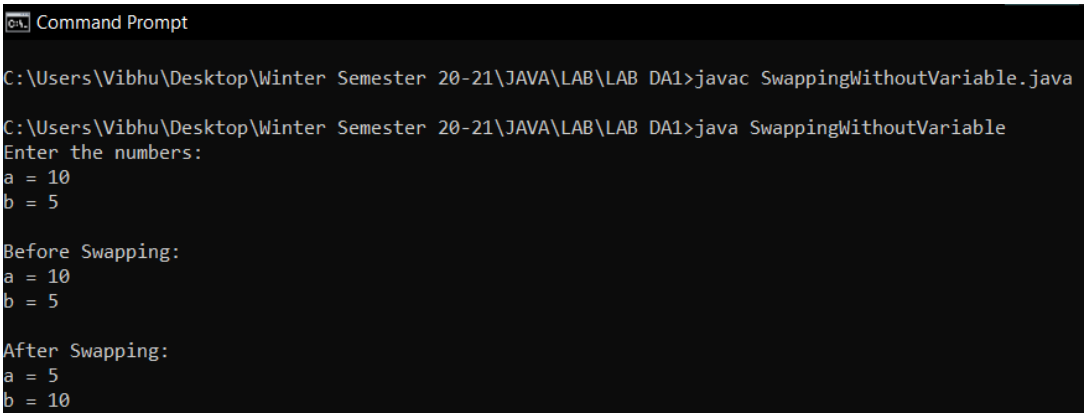
13. Write a Java program to swap two numbers without using third variable.

Ans 13)

CODE:

```
import java.util.Scanner;
public class SwappingWithoutVariable
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.println("Enter the numbers: ");
      System.out.print("a = ");
      int a=s.nextInt();
      System.out.print("b = ");
      int b=s.nextInt();
      System.out.print("\nBefore Swapping:\na = "+a+"\nb = "+b);
      a=a+b;
      b=a-b;
      a=a-b;
      System.out.print("\n\nAfter Swapping:\na = "+a+"\nb = "+b);
   }
}
```

Output:



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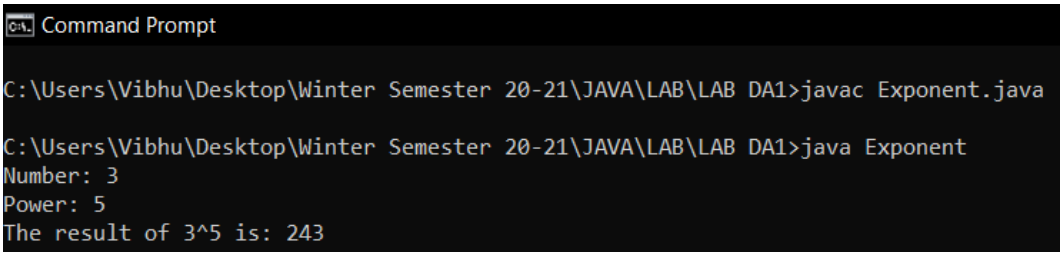
14. Write a Java program to calculate the power of Number.

Ans 14)

CODE:

```
import java.util.Scanner;
public class Exponent
{
   private static int power(int x,int n)
   {
      int res=1;
      while(n>0)
      {
         if(n%2!=0)
         {
            res*=x;
         }
         x=x*x;
         n=n/2;
      }
      return res;
   }
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.print("Number: ");
      int n=s.nextInt();
      System.out.print("Power: ");
      int p=s.nextInt();
      System.out.print("The result of "+n+"^"+p+" is: "+power(n,p));
   }
}
```

Output:



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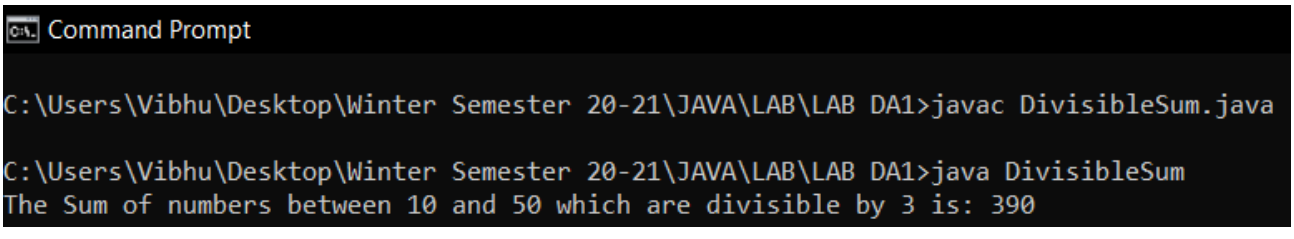
15. Write a Java program to find sum of all digits between 10 and 50, which are divisible by 3.

Ans 15)

CODE:

```
import java.util.*;
public class DivisibleSum
{
   private static int sumDivisibles(int A, int B, int M)
   {
      int sum = 0;
      for (int i = A; i <= B; i++)
      if (i % M == 0)
         sum += i;
      return sum;
   }
   public static void main(String[] args)
   {
      int A = 10, B = 50, M = 3;
      System.out.print("The Sum of numbers between 10 and 50 which are divisible by 3 is: "+sumDivis
ibles(A, B, M) +"\n");
   }
}
```

Output:



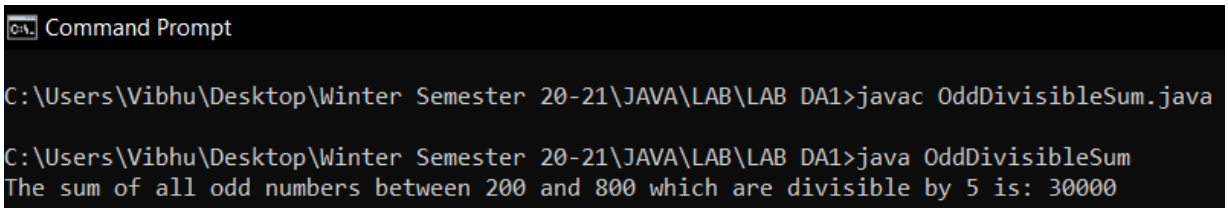
16. Write a Java program to find out all odd numbers divisible by 5 from the range of integers 200 to 800.

Ans 16)

CODE:

```
import java.util.*;
public class OddDivisibleSum
{
   private static int sumDivisibles(int A, int B, int M)
   {
      int sum = 0;
      for (int i = A; i <= B; i++)
      if (i % M == 0 && i%2==1)
         sum += i;
      return sum;
   }
   public static void main(String[] args)
   {
      int A = 200, B = 800, M = 5;
      System.out.print("The sum of all odd numbers between 200 and 800 which are divisible by 5 is: "
+sumDivisibles(A, B, M) +"\n");
   }
}
```

Output:



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

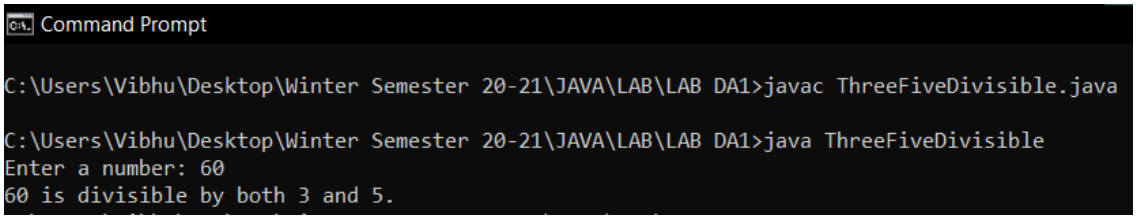
Ans 17)

CODE:

```
import java.util.Scanner;
public class ThreeFiveDivisible
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.print("Enter a number: ");
      int n=s.nextInt();
      if(n%3==0 && n%5==0)
      {
         System.out.print(n+" is divisible by both 3 and 5.");
      }
```

```
        else
        {
           System.out.print(n+" is not divisible by both 3 and 5.");
        }
     }
  }
```

Output:



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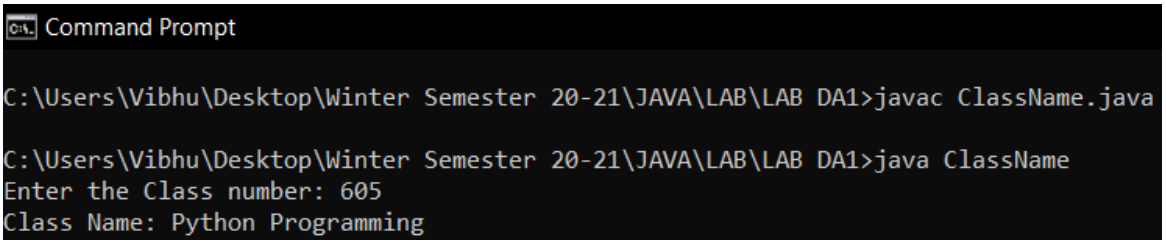
18. Write a Java Program to display Subject Name based on room number. If the user enters 604 then display Java Programming, If the user enters 605 then display Python programming for any other input display Invalid input to the user.

Ans 18)

CODE:

```
import java.util.Scanner;
public class ClassName
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.print("Enter the Class number: ");
      int n=s.nextInt();
      switch(n)
      {
         case 604:
            System.out.print("Java Programming");
            break;
         case 605:
            System.out.print("Python Programming");
            break;
         default:
            System.out.print("Invalid Input");
      }
   }
}
```

Output:



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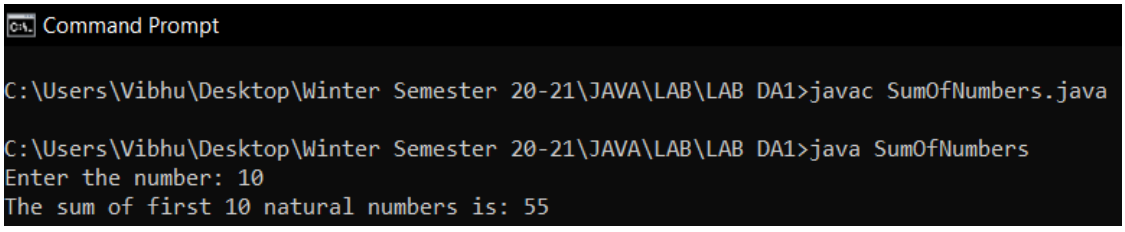
19. Write a Java Program to print the sum of first n numbers. If n is 3 then print the sum of 1+2+3 to the user. Get n from the user.

Ans 19)

CODE:

```
import java.util.Scanner;
public class SumOfNumbers
{
   public static void main(String args[])
   {
      Scanner s=new Scanner(System.in);
      System.out.print("Enter the number: ");
      int n=s.nextInt();
      int sum=n*(n+1)/2;
      System.out.print("The sum of first "+n+" natural numbers is: "+sum);
   }
}
```

Output:



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

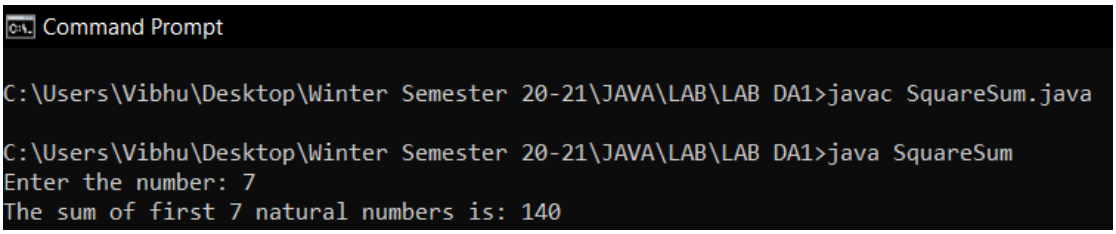
Ans 20)

CODE:

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

```
    {
        Scanner s=new Scanner(System.in);
        System.out.print("Enter the number: ");
        int n=s.nextInt();
        int sum=n*(n+1)*(2*n+1)/6;
        System.out.print("The sum of first "+n+" natural numbers is: "+sum);
    }
}
```

Output:



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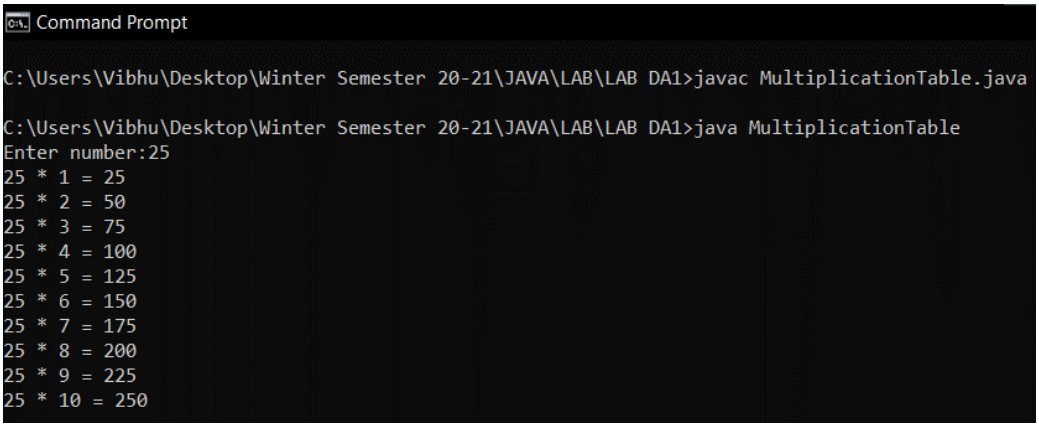
21. Write a Java Program to print the multiplication table by getting the n from the user.

Ans 21)

CODE:

```
import java.util.Scanner;
public class MultiplicationTable
{
    public static void main(String[] args)
    {
        Scanner s = new Scanner(System.in);
        System.out.print("Enter number:");
        int n=s.nextInt();
        for(int i=1;i<=10;i++)
        {
            System.out.println(n+" * "+i+" = "+n*i);
        }
    }
}
```

Output:



---

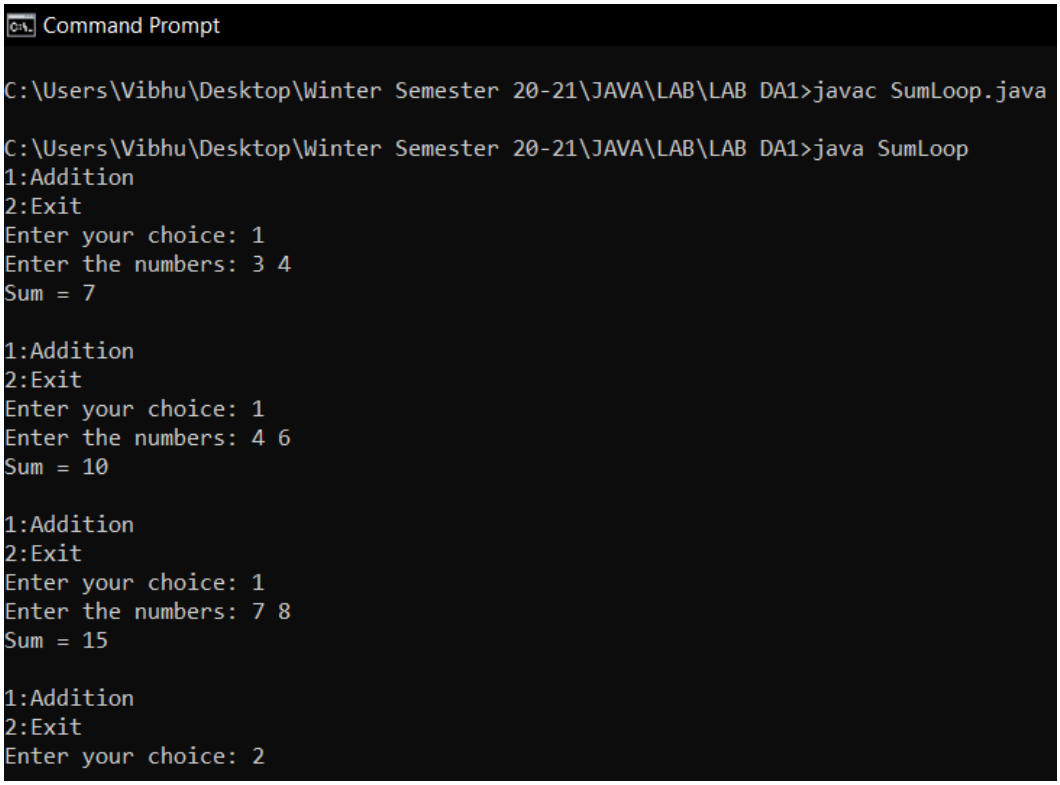
22. Write a Java Program to provide the option of adding two numbers to the user until the user exits.

Ans 22)

CODE:

```
import java.util.Scanner;
public class SumLoop
{
   public static void main(String[] args)
   {
      Scanner s = new Scanner(System.in);
      while(true)
      {
         System.out.print("1:Addition\n2:Exit\nEnter your choice: ");
         int choice=s.nextInt();
         switch(choice)
         {
            case 1:
               System.out.print("Enter the numbers: ");
               int a=s.nextInt();
               int b=s.nextInt();
               int sum=a+b;
               System.out.print("Sum = "+sum+"\n\n");
               break;
            case 2:
               System.exit(0);
         }
      }
   }
}
```

Output:


Command Prompt
C:\Users\Vibhu\Desktop\Winter Semester 20-21\JAVA\LAB\LAB DA1>javac SumLoop.java
C:\Users\Vibhu\Desktop\Winter Semester 20-21\JAVA\LAB\LAB DA1>java SumLoop
1:Addition
2:Exit
Enter your choice: 1
Enter the numbers: 3 4
Sum = 7
1:Addition
2:Exit
Enter your choice: 1
Enter the numbers: 4 6
Sum = 10
1:Addition
2:Exit
Enter your choice: 1
Enter the numbers: 7 8
Sum = 15
1:Addition
2:Exit
Enter your choice: 2