

Assignment 1

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all codes available here <https://github.com/yashkumarverma-bot/semester3/tree/master/java/da1>

Question1

```
import java.util.Scanner;
public class Arithmetic_Operators
{
    public static void main(String args[])
    {
        Scanner sc = new Scanner(System.in);
        while(true)
        {
            System.out.println();
            System.out.println("Enter the two numbers to perform operations
");
            System.out.print("Enter the first number : ");
            int x = sc.nextInt();
            System.out.print("Enter the second number : ");
            int y = sc.nextInt();
            System.out.println("Choose the operation you want to perform
");
            System.out.println("Choose 1 for ADDITION");
            System.out.println("Choose 2 for SUBTRACTION");
            System.out.println("Choose 3 for MULTIPLICATION");
            System.out.println("Choose 4 for DIVISION");
            System.out.println("Choose 5 for MODULUS");
            System.out.println("Choose 6 for EXIT");
            int n = sc.nextInt();
            switch(n)
            {
                case 1:
                    int add;
                    add = x + y;
                    System.out.println("Result : "+add);
                    break;

                case 2:
                    int sub;
                    sub = x - y;
                    System.out.println("Result : "+sub);
                    break;

                case 3:
                    int mul;
                    mul = x * y;
                    System.out.println("Result : "+mul);
```

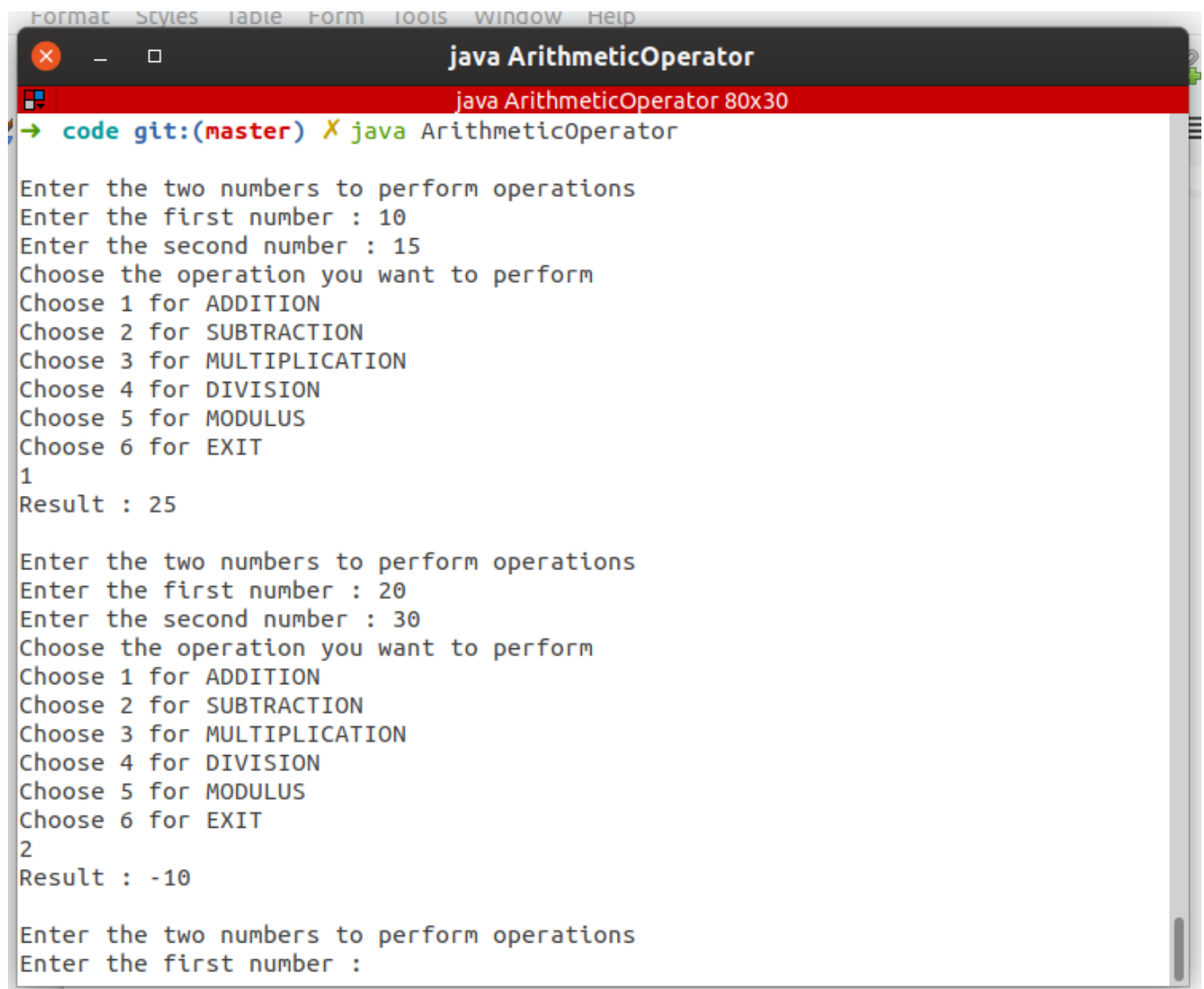
```
        break;

        case 4:
            float div;
            div = (float) x / y;
            System.out.print("Result : "+div);
            break;

        case 5:
            int mod;
            mod = x % y;
            System.out.println("Result : "+mod);
            break;

        case 6:
            System.exit(0);
    }
}
}
```

Output



```
Format Styles Table Form Tools Window Help
java ArithmeticOperator
java ArithmeticOperator 80x30
→ code git:(master) X java ArithmeticOperator

Enter the two numbers to perform operations
Enter the first number : 10
Enter the second number : 15
Choose the operation you want to perform
Choose 1 for ADDITION
Choose 2 for SUBTRACTION
Choose 3 for MULTIPLICATION
Choose 4 for DIVISION
Choose 5 for MODULUS
Choose 6 for EXIT
1
Result : 25

Enter the two numbers to perform operations
Enter the first number : 20
Enter the second number : 30
Choose the operation you want to perform
Choose 1 for ADDITION
Choose 2 for SUBTRACTION
Choose 3 for MULTIPLICATION
Choose 4 for DIVISION
Choose 5 for MODULUS
Choose 6 for EXIT
2
Result : -10

Enter the two numbers to perform operations
Enter the first number :
```

Question2

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

```
import java.util.Scanner;

public class ArithmeticOperator2 {
    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        while (true) {
            System.out.println("");
            System.out.println("Enter the two numbers to perform operations");

            System.out.print("Enter the first number : ");
            float x = sc.nextInt();
            System.out.print("Enter the second number : ");
            int y = sc.nextInt();
            System.out.println("Choose the operation you want to perform");

            System.out.println("Choose 1 for ADDITION");
            System.out.println("Choose 2 for SUBTRACTION");
            System.out.println("Choose 3 for MULTIPLICATION");
            System.out.println("Choose 4 for DIVISION");
            System.out.println("Choose 5 for MODULUS");
            System.out.println("Choose 6 for EXIT");
            int n = sc.nextInt();
            switch (n) {
                case 1:
                    x = x + y;
                    System.out.println("Result : " + x);
                    break;

                case 2:
                    x = x - y;
                    System.out.println("Result : " + x);
                    break;

                case 3:
                    x = x * y;
                    System.out.println("Result : " + x);
                    break;

                case 4:
                    x = (float) x / y;
                    System.out.print("Result : " + x);
                    break;

                case 5:
                    x = x % y;
                    System.out.println("Result : " + x);
                    break;
            }
        }
    }
}
```

```

        case 6:
            System.exit(0);
        }
    }
}

```

Output

```

java ArithmeticOperator2
Enter the two numbers to perform operations
Enter the first number : 20
Enter the second number : 30
Choose the operation you want to perform
Choose 1 for ADDITION
Choose 2 for SUBTRACTION
Choose 3 for MULTIPLICATION
Choose 4 for DIVISION
Choose 5 for MODULUS
Choose 6 for EXIT
1
Result : 50.0

Enter the two numbers to perform operations
Enter the first number : 3
Enter the second number : 10
Choose the operation you want to perform
Choose 1 for ADDITION
Choose 2 for SUBTRACTION
Choose 3 for MULTIPLICATION
Choose 4 for DIVISION
Choose 5 for MODULUS
Choose 6 for EXIT
2
Result : -7.0

```

Question3

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

```

import java.util.Scanner;

public class MultiplicationWithoutSign {
    static int multiply(int x, int y) {
        if (y == 0)
            return 0;
        if (y > 0)
            return (x + multiply(x, y - 1));
        if (y < 0)
            return -multiply(x, -y);
        return -1;
    }
}

```

```
}

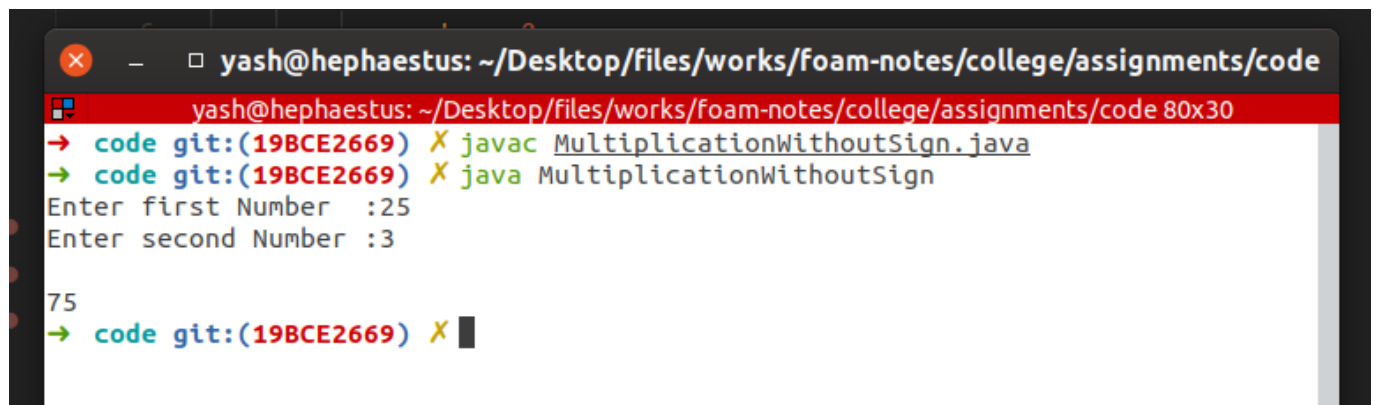
public static void main(String[] args) {

    Scanner sc = new Scanner(System.in);
    System.out.print("Enter first Number :");
    int n1 = sc.nextInt();
    System.out.print("Enter second Number :");
    int n2 = sc.nextInt();
    System.out.println();
    System.out.print(multiply(n1, n2));
    System.out.println();

}

}
```

Output



```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac MultiplicationWithoutSign.java
→ code git:(19BCE2669) X java MultiplicationWithoutSign
Enter first Number :25
Enter second Number :3

75
→ code git:(19BCE2669) X
```

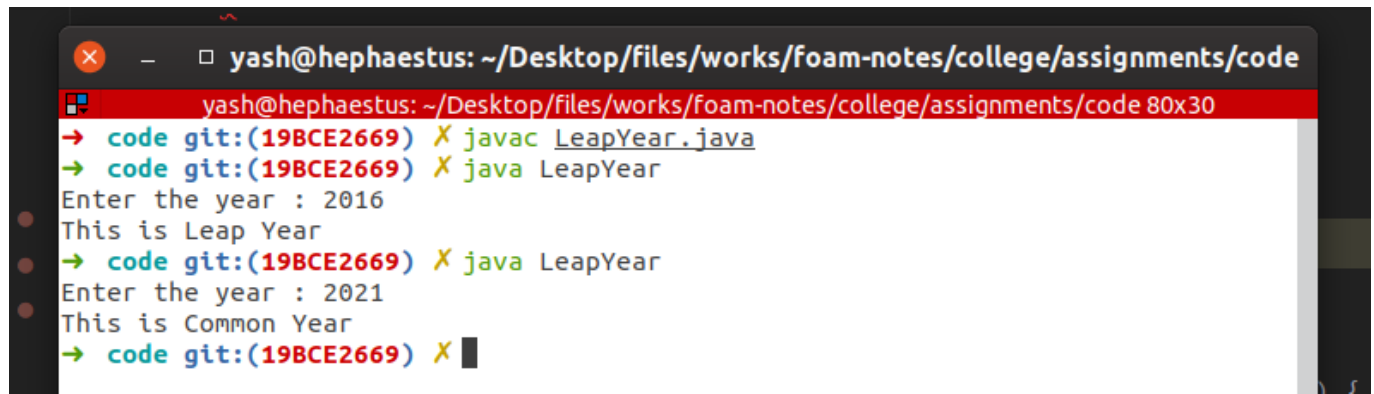
Question4

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

```
import java.util.Scanner;

public class LeapYear{
    public static void main(String args[]){
        Scanner sc=new Scanner(System.in);
        int year=sc.nextInt();
        if((year%4 == 0)&& (year % 100!=0) || (year%400 ==0)){
            System.out.println("This is Leap Year");
        }
        else{
            System.out.println("This is Common Year");
        }
    }
}
```

Output



```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac LeapYear.java
→ code git:(19BCE2669) X java LeapYear
Enter the year : 2016
This is Leap Year
→ code git:(19BCE2669) X java LeapYear
Enter the year : 2021
This is Common Year
→ code git:(19BCE2669) X
```

Question5

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

```
import java.util.Scanner;

public class MultiplicationTable {

    public static void main(String args[]) {
        /** starting from 1 to 15 */
        for (int i = 1; i <= 15; i++) {
            /** show till 10 multiplication rows */
            for (int j = 1; j <= 10; j++)
                System.out.println(i + " x " + j + " = " + i * j);

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

Output

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) ✗ javac MultiplicationTable.java
→ code git:(19BCE2669) ✗ java MultiplicationTable
1 x 1 = 1
1 x 2 = 2
1 x 3 = 3
1 x 4 = 4
1 x 5 = 5
1 x 6 = 6
1 x 7 = 7
1 x 8 = 8
1 x 9 = 9
1 x 10 = 10
2 x 1 = 2
2 x 2 = 4
2 x 3 = 6
2 x 4 = 8
2 x 5 = 10
2 x 6 = 12
2 x 7 = 14
2 x 8 = 16
2 x 9 = 18
2 x 10 = 20
3 x 1 = 3
3 x 2 = 6
3 x 3 = 9
3 x 4 = 12
3 x 5 = 15
3 x 6 = 18
```

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
13 x 5 = 65
13 x 6 = 78
13 x 7 = 91
13 x 8 = 104
13 x 9 = 117
13 x 10 = 130
14 x 1 = 14
14 x 2 = 28
14 x 3 = 42
14 x 4 = 56
14 x 5 = 70
14 x 6 = 84
14 x 7 = 98
14 x 8 = 112
14 x 9 = 126
14 x 10 = 140
15 x 1 = 15
15 x 2 = 30
15 x 3 = 45
15 x 4 = 60
15 x 5 = 75
15 x 6 = 90
15 x 7 = 105
```

```
15 x 8 = 120
15 x 9 = 135
15 x 10 = 150
```

```
→ code git:(19BCE2669) X
```

Question6

Write a Java Program to print ASCII Table.

```
public class AsciiTable {
    public static void main(String args[]) {
        int i;
        /** show all characters till 255 : the limit of ASCII */
        for (i = 0; i < 255; i++) {
            System.out.println("ASCII Character with value " + i + " is " +
(char) i);
        }
    }
}
```

Output


```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
ASCII Character with value 34 is "
ASCII Character with value 35 is #
ASCII Character with value 36 is $
ASCII Character with value 37 is %
ASCII Character with value 38 is &
ASCII Character with value 39 is '
ASCII Character with value 40 is (
ASCII Character with value 41 is )
ASCII Character with value 42 is *
ASCII Character with value 43 is +
ASCII Character with value 44 is ,
ASCII Character with value 45 is -
ASCII Character with value 46 is .
ASCII Character with value 47 is /
ASCII Character with value 48 is 0
ASCII Character with value 49 is 1
ASCII Character with value 50 is 2
ASCII Character with value 51 is 3
ASCII Character with value 52 is 4
ASCII Character with value 53 is 5
ASCII Character with value 54 is 6
ASCII Character with value 55 is 7
ASCII Character with value 56 is 8
ASCII Character with value 57 is 9
ASCII Character with value 58 is :
ASCII Character with value 59 is ;
ASCII Character with value 60 is <
ASCII Character with value 61 is =
ASCII Character with value 62 is >
ASCII Character with value 63 is ?
```

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
ASCII Character with value 88 is X
ASCII Character with value 89 is Y
ASCII Character with value 90 is Z
ASCII Character with value 91 is [
ASCII Character with value 92 is \
ASCII Character with value 93 is ]
ASCII Character with value 94 is ^
ASCII Character with value 95 is _
ASCII Character with value 96 is `
ASCII Character with value 97 is a
ASCII Character with value 98 is b
ASCII Character with value 99 is c
ASCII Character with value 100 is d
ASCII Character with value 101 is e
ASCII Character with value 102 is f
ASCII Character with value 103 is g
ASCII Character with value 104 is h
ASCII Character with value 105 is i
ASCII Character with value 106 is j
ASCII Character with value 107 is k
ASCII Character with value 108 is l
ASCII Character with value 109 is m
ASCII Character with value 110 is n
ASCII Character with value 111 is o
ASCII Character with value 112 is p
ASCII Character with value 113 is q
```

```
ASCII Character with value 114 is r
ASCII Character with value 115 is s
ASCII Character with value 116 is t
ASCII Character with value 117 is u
```

Question7

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

```
import java.util.Scanner;

public class SumOfFourDigit {
    public static void main(String[] args) {
        /** take input from user */
        Scanner handle = new Scanner(System.in);
        System.out.print("Enter first number : ");
        int number1 = handle.nextInt();
        System.out.print("Enter second number : ");
        int number2 = handle.nextInt();

        /** calculate sum */
        int sum = 0;
        sum += number1 + number2;

        /** show to ser */
        System.out.println("Sum of " + number1 + " and " + number2 + " is "
+ sum);
    }
}
```

Output

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac SumOfFourDigit.java
→ code git:(19BCE2669) X java SumOfFourDigit
Enter first number : 2547
Enter second number : 8965
Sum of 2547 and 8965 is 11512
→ code git:(19BCE2669) X
```

Question8

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

```
import java.util.Scanner;

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

```

Scanner s = new Scanner(System.in);
System.out.print("Enter a 4 digit number : ");
int n = s.nextInt();
int first = n / 1000;
int last = n % 10;
int sum = first + last;
System.out.println("First digit is : " + first);
System.out.println("Last digit is : " + last);
System.out.println("Sum is : " + sum);
}
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac SumOfFirstAndLastDigit.java
→ code git:(19BCE2669) X java SumOfFirstAndLastDigit
Enter a 4 digit number : 1452
First digit is :1
Last digit is :2
Sum is : 3
→ code git:(19BCE2669) X

```

Question 9

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

```

import java.util.Scanner;

public class ArmStrongNumber {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int k = 0, a, temp;

        System.out.print("Enter a number to check if it's ArmStrong or not
: ");

        int n = sc.nextInt();
        temp = n;

        while (n > 0) {
            a = n % 10;
            n = n / 10;
            k = k + (a * a * a);
        }

        if (temp == k) {
            System.out.println("Number is Armstrong");
        } else {
            System.out.println("Number is not Armstrong");
        }
    }
}

```

```

    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac ArmStrongNumber.java
→ code git:(19BCE2669) X java ArmStrongNumber
Enter a number to check if it's ArmStrong or not : 407
Number is Armstrong
→ code git:(19BCE2669) X java ArmStrongNumber
Enter a number to check if it's ArmStrong or not : 1234
Number is not Armstrong
→ code git:(19BCE2669) X █

```

Question10

Write a Java program to print Fibonacci Series.

```

import java.util.Scanner;

public class Fibbonaci {
    public static void main(String[] args) {
        int number, first = 0, third = 0, second = 1;
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter the number : ");
        number = sc.nextInt();

        System.out.println("First " + number + "fibbonacci number are \n" +
            first + "\n" + second);

        for (int i = 0; i < number - 2; i++) {
            third = first + second;
            System.out.println(third);
            first = second;
            second = third;
        }
    }
}

```

Output

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac Fibonacci.java
→ code git:(19BCE2669) X java Fibonacci
Enter the number : 10
First 10 fibonacci number are
0
1
1
2
3
5
8
13
21
34
→ code git:(19BCE2669) X
```

Question11

Write a Java program to print Factorial of Number

```
import java.util.Scanner;

public class Factorial {
    public static void main(String[] args) {
        int number, k, factorial;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number : ");
        number = sc.nextInt();

        factorial = 1;
        for (k = 1; k <= number; k++) {
            factorial = factorial * k;
        }
        System.out.println("Factorial is " + factorial);
    }
}
```

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac Factorial.java
→ code git:(19BCE2669) X java Factorial
Enter the number : 5
Factorial is 120
→ code git:(19BCE2669) X
```

Question12

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

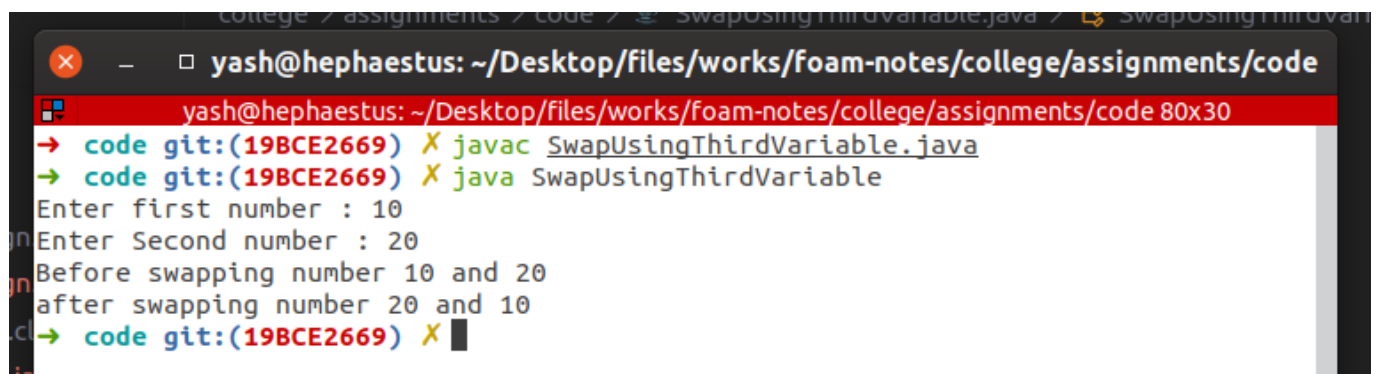
```
import java.util.Scanner;

public class SwapUsingThirdVariable {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter first number : ");
        int n1 = sc.nextInt();
        System.out.print("Enter Second number : ");
        int n2 = sc.nextInt();

        int temp;
        System.out.println("Before swapping number " + n1 + " and " + n2);
        temp = n1;
        n1 = n2;
        n2 = temp;
        System.out.println("after swapping number " + n1 + " and " + n2);
    }
}
```

Output



The screenshot shows a terminal window with the following output:

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac SwapUsingThirdVariable.java
→ code git:(19BCE2669) X java SwapUsingThirdVariable
Enter first number : 10
Enter Second number : 20
Before swapping number 10 and 20
after swapping number 20 and 10
→ code git:(19BCE2669) X
```

Question13

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

```
import java.util.Scanner;

public class SwapWithoutUsingThirdVariable {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter first number : ");
        int n1 = sc.nextInt();
        System.out.print("Enter first number : ");
        int n2 = sc.nextInt();

        System.out.println("value of n1:" + n1);
```

```

        System.out.println("value of n1:" + n2);
        System.out.println("Before swapping number " + n1 + " and " + n2);
        System.out.println();
        n1 = n1 + n2;
        n2 = n1 - n2;
        n1 = n1 - n2;

        System.out.println("value of n1:" + n1);
        System.out.println("value of n1:" + n2);
        System.out.println();
        System.out.println("After swapping number " + n1 + " and " + n2);
    }
}

```

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac SwapWithoutUsingThirdVariable.java
→ code git:(19BCE2669) X java SwapWithoutUsingThirdVariable
Enter first number : 10
Enter first number : 20
value of n1:10
value of n1:20
Before swapping number 10 and 20
value of n1:20
value of n1:10
After swapping number 20 and 10
→ code git:(19BCE2669) X

```

Question14

Write a Java program to calculate the power of Number.

```

import java.util.Scanner;

public class PowerOfNumber {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int a, b;

        System.out.print("Enter number : ");
        a = in.nextInt();

        System.out.print("Enter power : ");
        b = in.nextInt();

        a = (int) Math.pow(a, b);
        System.out.println(a);
    }
}

```

Output

```

9 | JAVA
0 | yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
1 | yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
2 | → code git:(19BCE2669) X javac PowerOfNumber.java
3 | → code git:(19BCE2669) X java PowerOfNumber
4 | Enter number : 2
5 | Enter power : 10
6 | 1024
7 | → code git:(19BCE2669) X █

```

Question 15

Write a Java program to add two matrix.

```

import java.util.Scanner;

public class MatrixAddition {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int[][] a;
        int n;
        System.out.print("Enter the size of matrix : ");
        n = in.nextInt();
        a = new int[n][n];
        System.out.print("Enter the elements of first matrix : ");
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                a[i][j] = in.nextInt();
            }
        }
        System.out.print("Enter the elements of second matrix : ");
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                a[i][j] += in.nextInt();
            }
        }

        System.out.println("final matrix : ");
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                System.out.print(a[i][j] + "\t");
            }
            System.out.println();
        }
    }
}

```


Output

```

2  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
3  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac MatrixAddition.java
→ code git:(19BCE2669) X java MatrixAddition
4 Enter the size of matrix : 3
Enter the elements of first matrix : 1
5 2
6 3
7 4
8 5
9 6
10 7
11 8
12 9
Enter the elements of second matrix : 1 2 3 4 5 6 7 8 9
13 final matrix :
14 2      4      6
15 8      10     12
16 14     16     18
17 → code git:(19BCE2669) X

```

Question16

Write a Java program to multiply two matrix.

```

import java.util.Scanner;

public class MatrixMultiplication {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int a[][] = new int[3][3];
        int b[][] = new int[3][3];
        int c[][] = new int[3][3];
        System.out.print("Enter the first matrix : ");
        for (int i = 0; i < 3; i++) {
            for (int j = 0; j < 3; j++) {
                a[i][j] = sc.nextInt();
            }
        }
        System.out.print("Enter the second matrix : ");
        for (int i = 0; i < 3; i++) {
            for (int j = 0; j < 3; j++) {
                b[i][j] = sc.nextInt();
            }
        }

        for (int i = 0; i < 3; i++) {
            for (int j = 0; j < 3; j++) {
                c[i][j] = 0;
                for (int k = 0; k < 3; k++) {
                    c[i][j] += a[i][k] * b[k][j];
                }
            }
        }
    }
}

```

```

        System.out.print(c[i][j] + " ");
    }
    System.out.println();
}
}
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac MatrixMultiplication.java
→ code git:(19BCE2669) X java MatrixMultiplication
4 Enter the first matrix : 1 2 3 4 5 6 7 8 9
5 Enter the second matrix : 1 2 3 4 5 6 7 8 9
6 30 36 42
7 66 81 96
8 102 126 150
→ code git:(19BCE2669) X

```

Question17

Write a Java program to Calculate diagonal element.

```

import java.util.Scanner;

public class DiagonalOfMatrix {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int[][] a;
        int n, ans = 0;

        System.out.print("Enter the size of matrix : ");
        n = in.nextInt();
        a = new int[n][n];
        System.out.print("Enter the elements of the matrix : ");
        for (int i = 0; i < n; i++) {
            for (int j = 0; j < n; j++) {
                a[i][j] = in.nextInt();
                if (i == j) {
                    ans += a[i][j];
                }
            }
        }
        System.out.println("Sum of diagonal element is : " + ans);
    }
}

```

Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac DiagonalOfMatrix.java
5 → code git:(19BCE2669) X java DiagonalOfMatrix
6 Enter the size of matrix : 3
7 Enter the elements of the matrix : 1 0 0 0 1 0 0 0 1
8 Sum of diagonal element is : 3
9 → code git:(19BCE2669) X

```

Question18

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

```

import java.util.Scanner;

public class SumOfDigitsDivisibleBy3 {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int ans = 0;
        for (int i = 12; i < 50; i += 3) {
            ans += i;
        }
        System.out.println("The final answer is : " + ans);
    }
}

```

Output

```

2 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
4 → code git:(19BCE2669) X javac SumOfDigitsDivisibleBy3.java
5 → code git:(19BCE2669) X java SumOfDigitsDivisibleBy3
6 The final answer is : 390
7 → code git:(19BCE2669) X

```

Question19

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

```

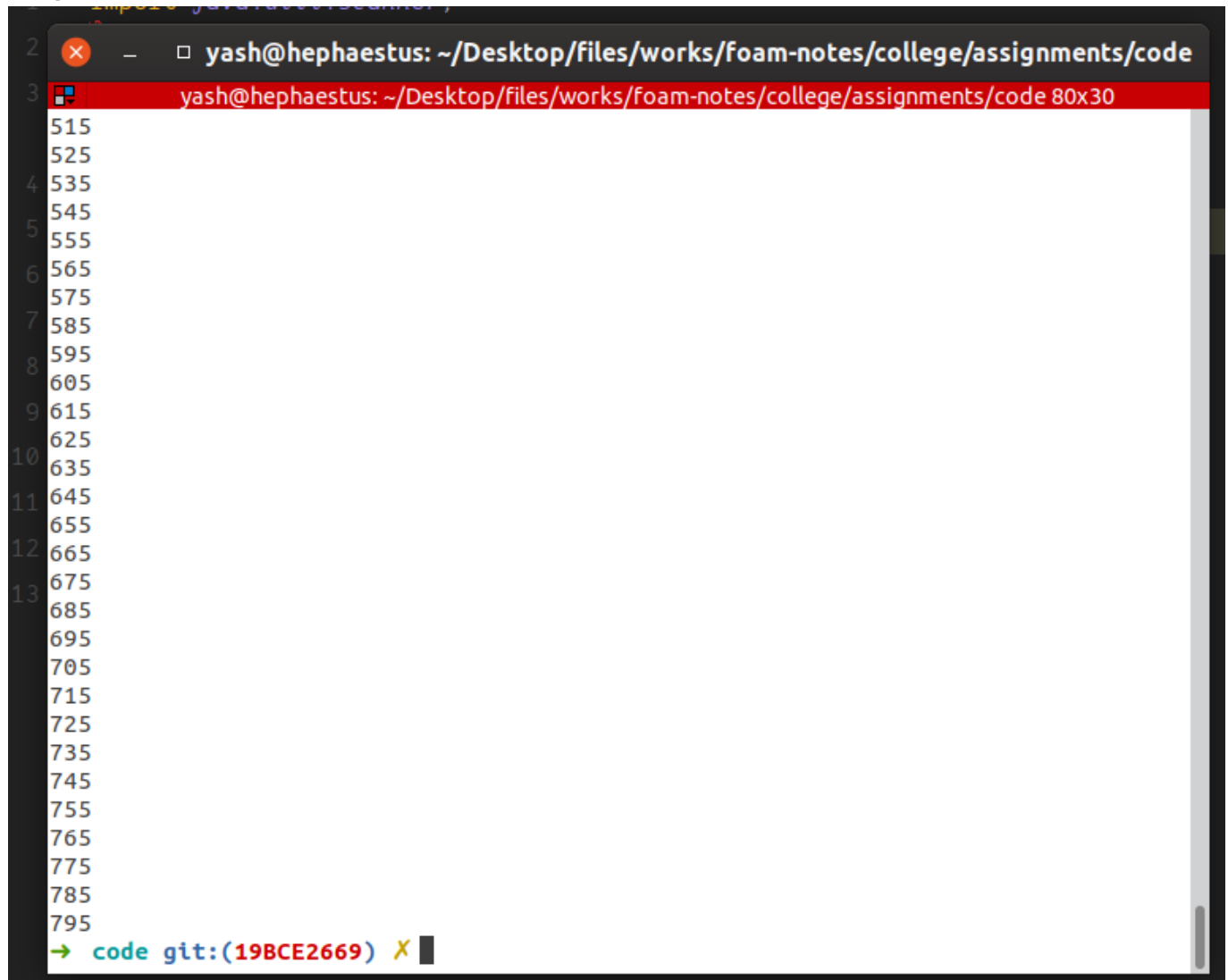
import java.util.Scanner;

public class OddDivisibleBy5 {
    public static void main(String args[]) {
        int i;
        int j = 800;
    }
}

```

```
        for (i = 200; i < j; i += 5) {  
            if (i % 2 != 0) {  
                System.out.println(i);  
            }  
        }  
    }  
}
```

Output



```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code  
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30  
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  
→ code git:(19BCE2669) X
```

Question20

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

```
import java.util.Scanner;  
  
public class DivisibleBy3And5 {  
    public static void main(String args[]) {  
        Scanner in = new Scanner(System.in);  
        int n;  
  
        System.out.println("Enter a number : ");
```

```

        n = in.nextInt();
        if (n % 3 == 0 && n % 5 == 0) {
            System.out.println(n + " is Divisible by 3 and 5.");
        } else {
            System.out.println(n + " is Not Divisible by 3 or 5.");
        }
    }
}

```

Output

```

1  import java.util.Scanner;
2
3  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac DivisibleBy3And5.java
→ code git:(19BCE2669) X java DivisibleBy3And5
4 Enter a number :
5 15
6 15 is Divisible by 3 and 5.
7 → code git:(19BCE2669) X
8

```

Question21

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.Scanner;

public class SubjectNameByRoomNumber {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int n;
        System.out.print("Enter a class number : ");
        n = in.nextInt();
        if (n == 604) {
            System.out.println("Java Programming");
        } else if (n == 605) {
            System.out.println("Python Programming");
        } else {
            System.out.println("Invalid input");
        }
    }
}

```

Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac SubjectNameByRoomNumber.java
5 → code git:(19BCE2669) X java SubjectNameByRoomNumber
6 Enter a class number : 605
7 Python Programming
8 → code git:(19BCE2669) X
9 → code git:(19BCE2669) X java SubjectNameByRoomNumber
10 Enter a class number : 604
11 Java Programming
12 → code git:(19BCE2669) X java SubjectNameByRoomNumber
13 Enter a class number : 3002
14 Invalid input
15 → code git:(19BCE2669) X

```

Question22

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.Scanner;

public class SumOfFirstNNumbers {
    public static void main(String args[]) {
        int n;
        Scanner in = new Scanner(System.in);
        System.out.print("Enter a number : ");
        n = in.nextInt();
        System.out.print("This is sum from 1 to " + n + " = ");
        System.out.println(n * (n + 1) / 2);
    }
}

```

Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac SumOfFirstNNumbers.java
5 → code git:(19BCE2669) X java SumOfFirstNNumbers
6 Enter a number : 10
7 This is sum from 1 to 10 = 55
8 → code git:(19BCE2669) X

```

Question23

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

```

import java.util.Scanner;

public class SumOfSquaresTillN {
    public static void main(String args[]) {
        int n;
        Scanner in = new Scanner(System.in);
        System.out.print("Enter the number : ");
        n = in.nextInt();

        System.out.print("This is the sum of series : ");
        System.out.println(n * (n + 1) * (2 * n + 1) / 6);
    }
}

```

Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 Enter the number : 5
5 This is the sum of series : 55
6
7

```

Question24

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

```

import java.util.Scanner;

public class MultiplicationTableByUser {
    public static void main(String args[]) {
        int n;
        Scanner in = new Scanner(System.in);
        System.out.println("Enter number for multiplication Table : ");
        n = in.nextInt();
        for (int i = 1; i <= 10; i++) {
            System.out.println(n + " X " + i + " = " + n * i);
        }
    }
}

```

Output

```
2 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac MultiplicationTableByUser.java
→ code git:(19BCE2669) X java MultiplicationTableByUser
4 Enter number for multiplication Table :
5 23
6 23 X 1 = 23
7 23 X 2 = 46
8 23 X 3 = 69
9 23 X 4 = 92
10 23 X 5 = 115
11 23 X 6 = 138
12 23 X 7 = 161
23 X 8 = 184
23 X 9 = 207
23 X 10 = 230
→ code git:(19BCE2669) X
```

Question25

Write a Java Program to provide the option of adding two numbers to the user until the user wants to exit.

```
import java.util.Scanner;

public class AddTillExit {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int n, ans = 0;
        System.out.println("Type 0 for answer");
        System.out.println("Type numbers of sum:");
        do {
            System.out.print("> ");
            n = in.nextInt();
            ans += n;
        } while (n != 0);
        System.out.println("The final answer is :" + ans);
    }
}
```


Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac AddTillExit.java
5 → code git:(19BCE2669) X java AddTillExit
6 Type 0 for answer
7 Type numbers of sum:
8 > 2
9 > 5
10 > 10
11 > 200
12 > 0
13 The final answer is :217
14 → code git:(19BCE2669) X

```

Question26

Pattern Questions

```

*
**
***
****

```

```

public class Pattern2 {
    public static void main(String[] args) {
        for (int i = 1; i <= 5; i++) {
            for (int j = 1; j <= i; j++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

Output

```

1 public class Pattern2 {
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac Pattern2.java
5 → code git:(19BCE2669) X java Pattern2
6 *
7 * *
8 * * *
9 * * * *
10 * * * * *
11 → code git:(19BCE2669) X

```

Question27

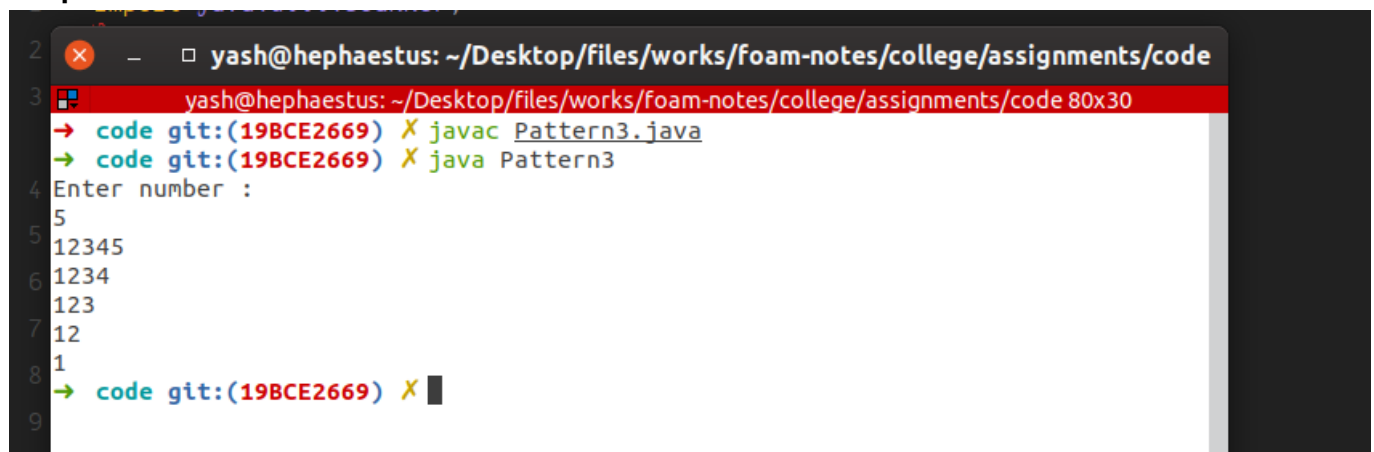
Pattern:

```
1234
123
12
1
```

```
import java.util.Scanner;

public class Pattern3 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int n = sc.nextInt();
        for (int i = n; i > 0; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j);
            }
            System.out.println();
        }
    }
}
```

Output



```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac Pattern3.java
→ code git:(19BCE2669) X java Pattern3
Enter number :
5
12345
1234
123
12
1
→ code git:(19BCE2669) X
```

Question28

```
1
12
123
1234
1234
123
```

```
12
1
```

```
import java.util.Scanner;

public class Pattern4 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int n = sc.nextInt();
        for (int k = 0; k < n; k++) {
            for (int l = 1; l <= (k + 1); l++) {
                System.out.print(l);
            }
            System.out.println();
        }

        for (int i = n; i > 0; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j);
            }
            System.out.println();
        }
    }
}
```

Output

```

30  **Output**
31  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
32  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
33  → code git:(19BCE2669) X javac Pattern4.java
34  → code git:(19BCE2669) X java Pattern4
35  Enter number :
36  5
37  1
38  12
39  123
40  1234
41  12345
42  12345
43  1234
44  123
45  12
46  1
47  → code git:(19BCE2669) X

```

Question29

Half pyramid using *

```
import java.util.Scanner;

public class HalfPyramid {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int n = sc.nextInt();
        for (int k = 0; k < n; k++) {
            for (int l = 1; l <= (k + 1); l++) {
                System.out.print('*');
            }
            System.out.println();
        }
    }
}
```

Output

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac HalfPyramid.java
→ code git:(19BCE2669) X java HalfPyramid
Enter number :
5
*
**
***
****
*****
→ code git:(19BCE2669) X
```

Question30

```
A
BB
CCC
DDDD
EEEEEE
```

```
public class AlphabetPyramid {
    public static void main(String[] args) {
        char last = 'E', alphabet = 'A';
        for (int i = 1; i <= (last - 'A' + 1); ++i) {
            for (int j = 1; j <= i; ++j) {
                System.out.print(alphabet);
            }
            ++alphabet;
            System.out.println();
        }
    }
}
```

```

    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→
→ code git:(19BCE2669) X javac AlphabetPyramid.java
→ code git:(19BCE2669) X java AlphabetPyramid
A
BB
CCC
DDDD
EEEE
→ code git:(19BCE2669) X

```

Question31

```

* * * * *
* * * *
* * *
* *
*

```

```

import java.util.Scanner;

public class InvertedStarPyramid {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter number : ");
        int n = sc.nextInt();
        for (int i = n; i > 0; i--) {
            for (int j = 1; j <= i; j++) {
                System.out.print('*');
            }
            System.out.println();
        }
    }
}

```

Output

```

2  x  -  □ yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
3  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac InvertedStarPyramid.java
→ code git:(19BCE2669) X java InvertedStarPyramid
4 Enter number :
5 10
6 *****
7 *****
8 *****
9 *****
10 *****
11 ****
12 ***

```

Question32

Inverted Number Pyramid

```

1 2 3 4 5
1 2 3 4
1 2 3
1 2
1

```

```

import java.util.Scanner;

public class InvertedNumberPryamid {
    public static void main(String args[]) {

        Scanner in = new Scanner(System.in);
        int n, i;
        System.out.println("Enter a number : ");
        n = in.nextInt();
        i = n;
        while (i > 0) {
            for (int j = 1; j <= i; j++) {
                System.out.print(j + " ");
            }
            System.out.println();
            i--;
        }
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac InvertedNumberPryamid.java
→ code git:(19BCE2669) X java InvertedNumberPryamid
Enter a number :
10
1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9
1 2 3 4 5 6 7 8
1 2 3 4 5 6 7
1 2 3 4 5 6
1 2 3 4 5
1 2 3 4
1 2 3
1 2
1
→ code git:(19BCE2669) X

```

Question33

```

      *
    * * *
  * * * * *
* * * * * * *

```

```

import java.util.Scanner;

public class FullPyramid {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int n;
        System.out.print("Enter limit for pattern : ");
        n = in.nextInt();
        for (int i = 1; i <= n; i++) {
            for (int j = n - i; j > 0; j--) {
                System.out.print(" ");
            }
            for (int k = 0; k < i; k++) {
                System.out.print("* ");
            }
            for (int l = 1; l < i; l++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

Output

```

2  x  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
3  yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac FullPyramid.java
→ code git:(19BCE2669) X java FullPyramid
4 Enter limit for pattern : 10
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     * * * * * * * * * * * * *
40     * * * * * * * * * * * * *
41     * * * * * * * * * * * * *
42     * * * * * * * * * * * * *
43     * * * * * * * * * * * * *
44     * * * * * * * * * * * * *
45     * * * * * * * * * * * * *
46     * * * * * * * * * * * * *
47     * * * * * * * * * * * * *
48     * * * * * * * * * * * * *
49     * * * * * * * * * * * * *
50     * * * * * * * * * * * * *
51     * * * * * * * * * * * * *
52     * * * * * * * * * * * * *
53     * * * * * * * * * * * * *
54     * * * * * * * * * * * * *
55     * * * * * * * * * * * * *
56     * * * * * * * * * * * * *
57     * * * * * * * * * * * * *
58     * * * * * * * * * * * * *
59     * * * * * * * * * * * * *
60     * * * * * * * * * * * * *
61     * * * * * * * * * * * * *
62     * * * * * * * * * * * * *
63     * * * * * * * * * * * * *
64     * * * * * * * * * * * * *
65     * * * * * * * * * * * * *
66     * * * * * * * * * * * * *
67     * * * * * * * * * * * * *
68     * * * * * * * * * * * * *
69     * * * * * * * * * * * * *
70     * * * * * * * * * * * * *
71     * * * * * * * * * * * * *
72     * * * * * * * * * * * * *
73     * * * * * * * * * * * * *
74     * * * * * * * * * * * * *
75     * * * * * * * * * * * * *
76     * * * * * * * * * * * * *
77     * * * * * * * * * * * * *
78     * * * * * * * * * * * * *
79     * * * * * * * * * * * * *
80     * * * * * * * * * * * * *
81     * * * * * * * * * * * * *
82     * * * * * * * * * * * * *
83     * * * * * * * * * * * * *
84     * * * * * * * * * * * * *
85     * * * * * * * * * * * * *
86     * * * * * * * * * * * * *
87     * * * * * * * * * * * * *
88     * * * * * * * * * * * * *
89     * * * * * * * * * * * * *
90     * * * * * * * * * * * * *
91     * * * * * * * * * * * * *
92     * * * * * * * * * * * * *
93     * * * * * * * * * * * * *
94     * * * * * * * * * * * * *
95     * * * * * * * * * * * * *
96     * * * * * * * * * * * * *
97     * * * * * * * * * * * * *
98     * * * * * * * * * * * * *
99     * * * * * * * * * * * * *
100    * * * * * * * * * * * * *

```

Question34

Pyramid of numbers

```

import java.util.Scanner;

public class NumberPyramid {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int n, temp = 0;
        System.out.print("Enter limit for pattern : ");
        n = in.nextInt();
        for (int i = 1; i <= n; i++) {
            for (int j = n - i; j > 0; j--) {
                System.out.print(" ");
            }
            temp = i;
            for (int k = 0; k < i; k++) {
                System.out.print(temp++ + " ");
            }
            temp--;
            for (int l = 1; l < i; l++) {
                System.out.print(--temp + " ");
            }
            System.out.println();
        }
    }
}

```


Output

```

1 import java.util.Scanner;
2
3 yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
4 → code git:(19BCE2669) X javac NumberPyramid.java
5 → code git:(19BCE2669) X java NumberPyramid
6 Enter limit for pattern : 5
7     1
8     2 3 2
9     3 4 5 4 3
10    4 5 6 7 6 5 4
11    5 6 7 8 9 8 7 6 5
12 → code git:(19BCE2669) X

```

Question35

Inverted Pyramid of numbers

```

import java.util.Scanner;

public class Pattern35 {
    public static void main(String args[]) {
        Scanner in = new Scanner(System.in);
        int n;
        System.out.print("Enter limit for pattern : ");
        n = in.nextInt();
        for (int i = n; i > 0; i--) {
            for (int j = n - i; j > 0; j--) {
                System.out.print(" ");
            }
            for (int k = 0; k < i; k++) {
                System.out.print("* ");
            }
            for (int l = 1; l < i; l++) {
                System.out.print("* ");
            }
            System.out.println();
        }
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac Pattern35.java
→ code git:(19BCE2669) X java Pattern35
Enter limit for pattern : 5
* * * * *
* * * * *
  * * * *
    * * *
      *

```

Question36

Floyd's Triagle

```

import java.util.Scanner;

public class FloydTriangle {
    public static void main(String args[]) {
        int n;
        int number = 1;
        int i, j;
        Scanner in = new Scanner(System.in);
        System.out.print("Enter limit for pattern : ");
        n = in.nextInt();
        for (i = 1; i <= n; i++) {
            for (j = 1; j <= i; j++) {
                System.out.print((number++) + "\t");
            }
            System.out.println();
        }
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac FloydTriangle.java
→ code git:(19BCE2669) X java FloydTriangle
Enter limit for pattern : 5
1
2      3
4      5      6
7      8      9      10
11     12     13     14     15

```

Question37

Write a Java program to check whether a number is palindrome or not Write a Java program to print the odd and even values in an array

```
import java.util.Scanner;

public class PalindromeArray {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter number : ");
        int n = sc.nextInt();
        int m = n;
        int rev = 0;
        while (n > 0) {
            rev = rev * 10 + n % 10;
            n = n / 10;
        }
        if (rev == m)
            System.out.println("Number is Palindrome");
        else
            System.out.println("Number not is Palindrome");
        System.out.print("Enter no. of elements you want in array:");
        int k = sc.nextInt();
        int a[] = new int[k];
        System.out.println("Enter all the elements:");
        for (int i = 0; i < k; i++) {
            a[i] = sc.nextInt();
        }
        System.out.println("Odd Numbers:");
        for (int i = 0; i < a.length; i++) {
            if (a[i] % 2 != 0) {
                System.out.println(a[i]);
            }
        }
        System.out.println("Even Numbers:");
        for (int i = 0; i < a.length; i++) {
            if (a[i] % 2 == 0) {
                System.out.println(a[i]);
            }
        }
    }
}
```

Output

```
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac PalindromeArray.java
→ code git:(19BCE2669) X java PalindromeArray
Enter number : 12321
Number is Palindrome
Enter no. of elements you want in array:10
Enter all the elements:
12
25
36
454
8985
365
214
212
57458
585
Odd Numbers:
25
8985
365
585
Even Numbers:
12
36
454
214
212
57458
→ code git:(19BCE2669) X
```

Question38

Write a Java program to remove the duplicate elements of a given array and return the new length of the array.

```
import java.util.Scanner;

public class RemoveDuplicateFromArray {
    public static int removeDuplicateElements(int arr[], int n) {
        if (n == 0 || n == 1) {
            return n;
        }
        int[] temp = new int[n];
        int j = 0;
        for (int i = 0; i < n - 1; i++) {
            if (arr[i] != arr[i + 1]) {
                temp[j++] = arr[i];
            }
        }
        temp[j++] = arr[n - 1];
```

```

        for (int i = 0; i < j; i++) {
            arr[i] = temp[i];
        }
        return j;
    }

    /** main caller function */
    public static void main(String[] args) {
        int arr[] = { 50,50,50,50,50,100,100,100,30,50,40,80,90 };
        int length = arr.length;
        length = removeDuplicateElements(arr, length);

        for (int i = 0; i < length; i++)
            System.out.print(arr[i] + " ");
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac RemoveDuplicateFromArray.java
→ code git:(19BCE2669) X java RemoveDuplicateFromArray
50 100 30 50 40 80 90 %
→ code git:(19BCE2669) X

```

Question39

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

```

import java.util.Scanner;

public class DivisibilityBy3And5 {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number : ");
        int n = sc.nextInt();
        if (n % 5 == 0) {
            if (n % 3 == 0) {
                System.out.println("Number is divided by 3 and 5");
            } else
                System.out.println("Number is not divided by 3 and 5");
        } else
            System.out.println("Number is not divided by 3 and 5");
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac DivisibilityBy3And5.java
→ code git:(19BCE2669) X java DivisibilityBy3And5
Enter the number : 45
Number is divided by 3 and 5
→ code git:(19BCE2669) X

```

Question40

Write a Java program to print the third largest number in an array

```

import java.util.Scanner;

public class ThirdLargestInArray {

    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the length of array : ");
        int n = sc.nextInt();
        int a[] = new int[n];
        System.out.println("Enter all the elements:");
        for (int i = 0; i < n; i++) {
            a[i] = sc.nextInt();
        }
        System.out.println("Third Largest: " + getThirdLargest(a,
a.length));
    }

    public static int getThirdLargest(int[] a, int total) {
        int temp;
        for (int i = 0; i < total; i++) {
            for (int j = i + 1; j < total; j++) {
                if (a[i] > a[j]) {
                    temp = a[i];
                    a[i] = a[j];
                    a[j] = temp;
                }
            }
        }
        return a[total - 3];
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac ThirdLargestInArray.java
→ code git:(19BCE2669) X java ThirdLargestInArray
Enter the length of array :
10
Enter all the elements:
12 14 25 78 98 74 11 25 36 98
Third Largest: 78
→ code git:(19BCE2669) X

```

Question41

Write a Java program to print the pascal triangle

```

import java.util.Scanner;

public class PascalTriangle {
    static int factorial(int n) {
        int f;
        for (f = 1; n > 1; n--) {
            f *= n;
        }
        return f;
    }

    static int ncr(int n, int r) {
        return factorial(n) / (factorial(n - r) * factorial(r));
    }

    public static void main(String args[]) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter limit for triangle : ");
        int n = sc.nextInt();
        for (int i = 0; i <= n; i++) {
            for (int j = 0; j <= n - i; j++) {
                System.out.print(" ");
            }
            for (int j = 0; j <= i; j++) {
                System.out.print(" " + ncr(i, j));
            }
            System.out.println();
        }
    }
}

```

Output

```

yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
→ code git:(19BCE2669) X javac PascalTriangle.java
→ code git:(19BCE2669) X java PascalTriangle
Enter limit for triangle : 5
    1
   1 1
  1 2 1
 1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
→ code git:(19BCE2669) X

```

Question42

Write a Java program to print the floyds triangle

```

import java.util.Scanner;

public class FloydTriangle {
    public static void main(String args[]) {
        int n;
        int number = 1;
        int i, j;
        Scanner in = new Scanner(System.in);
        System.out.print("Enter limit for pattern : ");
        n = in.nextInt();
        for (i = 1; i <= n; i++) {
            for (j = 1; j <= i; j++) {
                System.out.print((number++) + "\t");
            }
            System.out.println();
        }
    }
}

```


Output

```
minutes ago | 1 author (You)
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code
yash@hephaestus: ~/Desktop/files/works/foam-notes/college/assignments/code 80x30
→ code git:(19BCE2669) X javac FloydTriangle.java
→ code git:(19BCE2669) X java FloydTriangle
Enter limit for pattern : 10
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     40     41     42     43     44     45
46     47     48     49     50     51     52     53     54     55
→ code git:(19BCE2669) X
```