**Programming Paradigms Laboratory**

**B.Tech. 4th Semester**



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| Faculty | Engineering & Technology |
| Programme | B. Tech. in Computer Science and Engineering |
| Year/Semester | 2nd Year / 4th Semester |
| Name of the Laboratory | Programming Paradigms Laboratory |
| Laboratory Code | 19CSL217A |

# Laboratory 1

Title of the Laboratory Exercise: Introduction to Java programming environment with variables, data types and arithmetic operators

1. Questions
2. Develop a Java program to check the input number is positive or negative.
3. Develop a Java program to reverse the input number using for and while loop.
4. Develop a program to compute the factorial of the input number.
5. Develop a Java program to check whether the input year is leap or not.

1. Calculations/Computations/Algorithms

**Algorithm 2.1 Program to check the input number is positive or negative.**

Step 1: start

Step 2: input a number, say num

Step 3: if num > 0 or equal to 0

3.1 then, print “number is positive”

Step 4: else:

4.1 print “number is negative”

Step 5: stop

**Algorithm 2.2 Program to reverse the input number using for and while loop.**

Step 1: start

Step 2: input a number, say num

Step 3: assign another variable rev = 0

Step 4: while (num not equal to 0):

4.1 rev = rev \* 10

4.2 rev = rev + num % 10

4.3 num = num / 10

Step 5: print rev

Step 6: stop

**Algorithm 2.3 Program to compute the factorial of the input number**

Step 1: start

Step 2: input a number, say num

Step 3: assign a variable fact = 1

Step 4: for (i=1 ; i <= n ; i++):

4.1 fact = fact \* i

Step 5: print fact

Step 6: stop

**Algorithm 2.4 Program to check whether the input year is leap or not**

Step 1: start

Step 2: input the year, say variable ‘year’

Step 3: if ((year % 4 == 0 and year % 100 != 0) or year % 400 == 0):

3.1 then, print “leap year”

Step 4: else:

4.1 print “not a leap year”

Step 5: stop

1. Presentation of Results

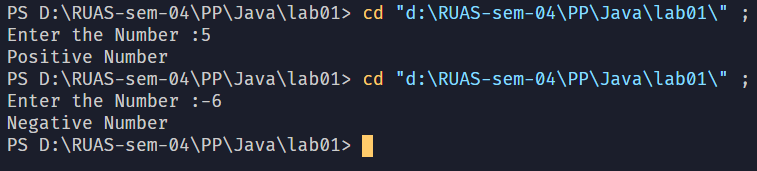
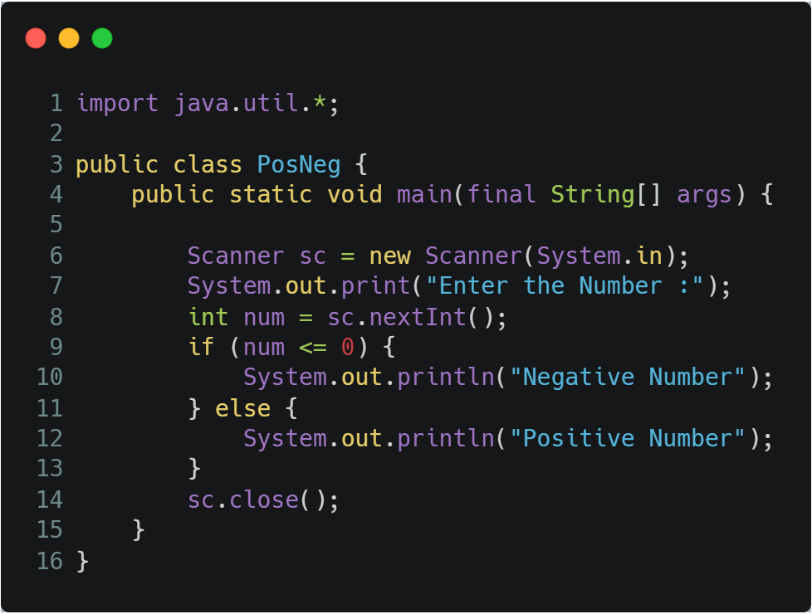


Figure 1 Program to check the input number is positive or negative.

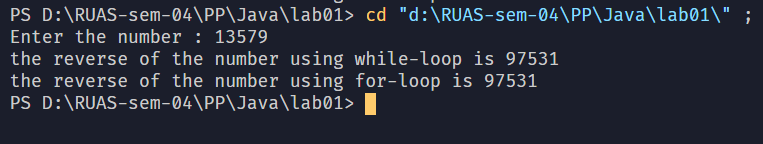
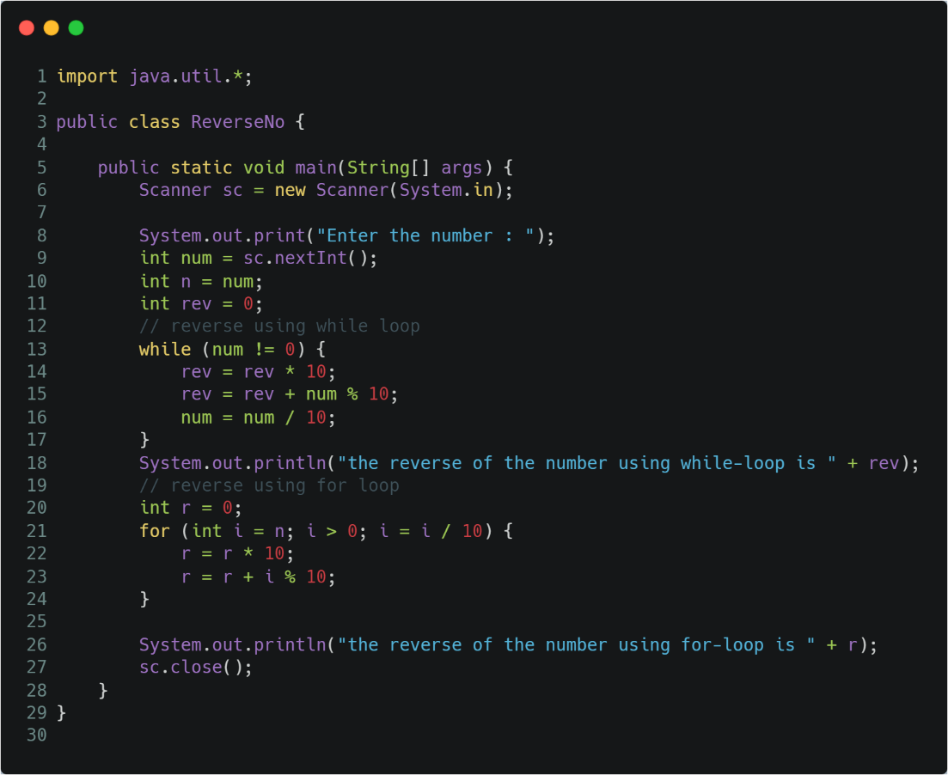


Figure 2 Program to reverse the input number using for and while loop.

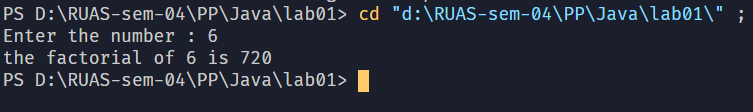
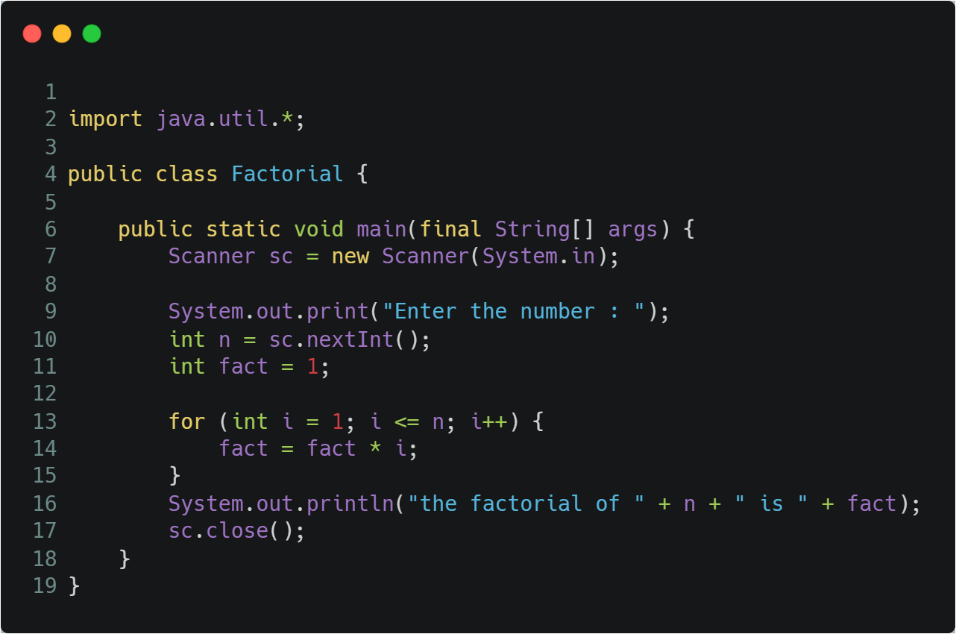


Figure 3 Program to compute the factorial of the input number

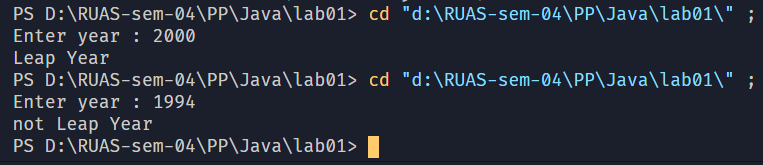
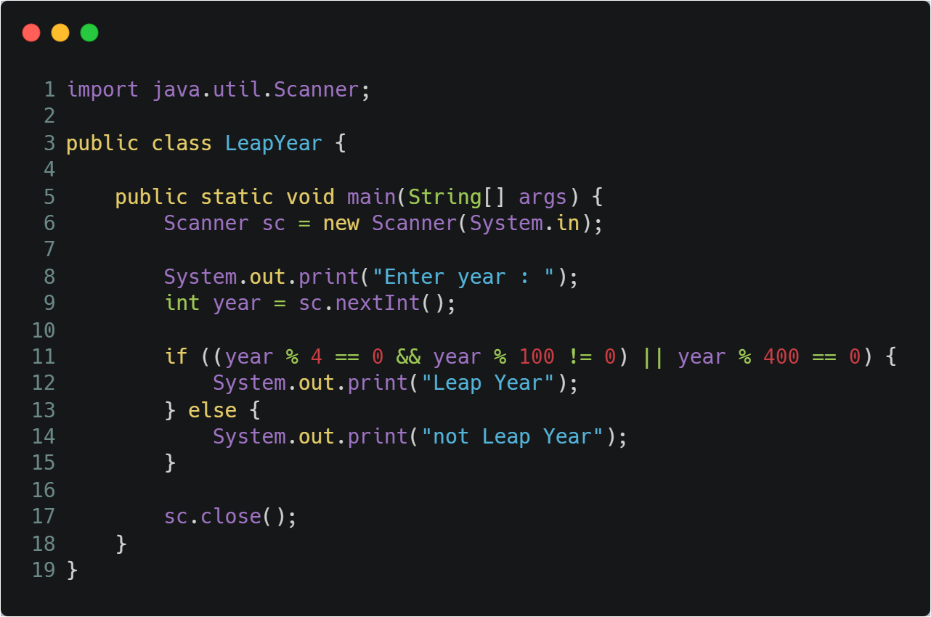


Figure 4 Program to check whether the input year is leap or not.

1. Conclusions
2. Limitations of Experiments and Results

5.1

5.2

5.3