

St. Francis Institute of Technology, Mumbai-400 103
Department Of Information Technology

A.Y. 2020-2021
Class: SE-ITA/B, Semester: III

Subject: **Java Programming Lab**

Experiment-1: Java Program to implement principles of OOP using Control and Looping Statements.

1. Aim: Write a Java program to demonstrate the following:

a. Write a menu driven Java program which will read a number and should implement the following methods :

- i. Factorial()
- ii. Reverse of a Number()
- iii. Test Armstrong()
- iv. Test Palindrome()
- v. Test Prime()
- vi. Fibonacci Series()

b. Implement a java program to calculate gross salary & net salary taking the following data.

Input: empno, empname, basic

Process: DA=70% of basic, HRA=30% of basic, CCA=Rs240/-, PF=10% of basic,

PT= Rs100/-

2. Prerequisite: Knowledge of basics of OOP and Data Types.

3. Requirements: Personal Computer (PC), Windows Operating System, Net beans 8.0.

4. Pre-Experiment Exercise:

Theory:

a) Datatypes:

Type	Description	Default	Size	Example Literals
boolean	true or false	false	1 bit	true, false

byte	twos complement integer	0	8 bits	(none)
char	Unicode character	\u0000	16 bits	'a', '\u0041', '\101', '\\', '\"', '\n', '\b'
short	twos complement integer	0	16 bits	(none)
int	twos complement integer	0	32 bits	-2, -1, 0, 1, 2
long	twos complement integer	0	64 bits	-2L, -1L, 0L, 1L, 2L
float	IEEE 754 floating point	0.0	32 bits	1.23e100f, -1.23e-100f, .3f, 3.14F
double	IEEE 754 floating point	0.0	64 bits	1.23456e300d, -1.23456e-300d, 1e1d

b) **If...else statement:** It checks Boolean condition: *true* or *false*. There are various types of if statement in java.

- i. if statement
- ii. if-else statement
- iii. if-else-if ladder
- iv. nested if statement

- c) **Switch statement:** The Java *switch statement* executes one statement from multiple conditions. It is like if-else-if ladder statement.
- d) **Looping statements:** loops are used to execute a set of instructions/functions repeatedly when some conditions become true. There are three types of loops in java.
 - i. for loop
 - ii. while loop
 - iii. do-while loop
 - iv. for each loop

5. Laboratory Exercise

A. Procedure

- i. Open Net beans for Java.
- ii. Open File and Create New Java Project.
- iii. Inside the Java Project rename give name to your Java Class.
- iv. Click on Finish.
- v. Type the Java Code in the opened class.
- vi. Save the code by pressing Ctrl+S.
- vii. Run the code by pressing Shift+F6.

B. Program code with comments:

Write and execute your program code to achieve the given aim and attach it **with your own comments with neat indentation.**

6. Post-Experiments Exercise

A. Extended Theory:

- 1. Explain entry controlled loop and exit controlled loop used in Java with example.
- 2. Explain the use of break and continue statement and differentiate between them.

B. Results/Observations/Program output:

Present the program input/output results and comment on the same.

C. Questions/Programs:

- 1. Write a Java program that counts number of alphabets, words, digits, special symbols and blank spaces in a given string.
- 2. Write a Java program to count vowels and consonants in a given string.

D. Conclusion:

- 1. Write what was performed in the experiment/program.
- 2. What is the significance of experiment/program?

3. Mention few applications of what was studied.

E. References

1. E. Balguruswamy, “Programming with java A primer”, Fifth edition, Tata McGraw Hill Publication.
2. Learn to Master JAVA, from Star EDU solutions , by ScriptDemics.
3. www.programmingsimplified.com
4. www.javatpoint.com