St. Francis Institute of Technology, Mumbai-400 103

Department Of Information Technology

A.Y. 2023-24

Class: SE-ITA/B, Semester: III

Subject: **Java Labs**

Experiment 1

1.Aim: Write a program to demonstrate java Control Structures

2.Theory

Problem Statement Write Java code 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 salary. Process:DA=70% of basic,HRA=30% of basic,CCA=Rs240/-,PF=10% of basic,PT=Rs100/-

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

4.Requirements: Personal Computer (PC), Windows Operating System, JDK 1.8 and above,online java compiler/IDE.

5. Pre-Experiment Exercise: (SOFTCOPY)

Theory: a) Explain various Data types in java.

b)Control Structures in Java

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

6. Laboratory Exercise:

A. Procedure :

1. Write java code and save with .java extension

2. Compile program using javac filename.java

3. Run program using java filename

7. Post-Experiments Exercise (HANDWRITTEN)

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. Questions/Programs: (SOFT COPY)

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.

C. Conclusion: (HANDWRITTEN)

1. Write what was performed in the experiment/program.

2. Mention few applications of what was studied.

D. 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