

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY

Object Oriented Programming Lab

(Common to CSE, CSD & CSM)

II B. Tech - I Semester

SRIT R20

Course Code	Category	Hours/Week			Credits	Maximum Marks		
R204GA05305	PCC	L	T	P	C	CIA	SEE	Total
		0	0	3	1.5	40	60	100

Objectives:

At the end of this course, the student can be able to

- Learn to use object orientation to solve problems and use java language to implement them.
- To experiment with the syntax and semantics of java language and gain experience with java programming.
- Discuss JDK Java environment to create, debug and run simple Java programs
- Demonstrate java compiler and eclipse platform and learn how to use Netbeans IDE to create Java Application.
- Discuss database connectivity with java programming.

List of Experiments:


- 1) Preparing and practice – Installation of Java software, study of any Integrated development environment, sample programs on operator precedence and associativity, class and package concept, scope concept, control structures, constructors and destructors. Learn to compile, debug and execute java programs.
- 2) Write Java program(s) that print following pyramid patterns.



Half Pyramid



Inverted Half Pyramid



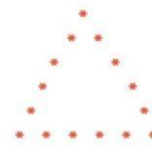
Hollow Inverted Half Pyramid



Full Pyramid



Inverted Full Pyramid



Hollow Full Pyramid

- 3) Write Java program(s) on use of inheritance, preventing inheritance using final, abstract classes.
- 4) Write Java program(s) on dynamic binding, method overloading and overriding.
- 5) Write Java program(s) on ways of implementing interface.
- 6) Write Java program(s) which uses the exception handling features of the language, creates exceptions and handles them properly, uses the predefined exceptions, and create own exceptions
- 7) Write java program that inputs 5 numbers, each between 10 and 100 inclusive. As each number is read display it only if it's not a duplicate of any number already read. Display the complete set of unique values input after the user enters each new value.
- 8) Write Java program(s) on creating multiple threads, assigning priority to threads, synchronizing threads, suspend and resume threads
- 9) Write a java program to split a given text file into n parts. Name each part as the name of

the original file followed by .part<n> where n is the sequence number of the part file.

- 10) Write a java program to create a super class called Figure that receives the dimensions of two-dimensional objects. It also defines a method called area that computes the area of an object. The program derives two subclasses from Figure. The first is Rectangle and second is Triangle. Each of the sub classes override area () so that it returns the area of a rectangle and triangle respectively.
- 11) Write a Java program that creates three threads. First thread displays "Good Morning" every one second, the second thread displays "Hello" every two seconds and the third thread displays "Welcome" every three seconds.
- 12) Design a simple calculator which performs all arithmetic operations. The interface should look like the calculator application of the operating system. Handle the exceptions if any.
- 13) Write a java program to handle mouse events and keyboard events.
- 14) Write a java program that allows conduction of object type examination containing multiple choice questions, and true/false questions. At the end of the examination when the user clicks a button the total marks have to be displayed in the form of the message.
- 15) Write a java program that creates menu which appears similar to the menu of notepad application of the Microsoft windows or any editor of your choice.
- 16) Write a java program that creates dialog box which is similar to the save dialog box of the Microsoft windows or any word processor of your choice.
- 17) Write a java program to find and replace pattern in a given file.
- 18) Use inheritance to create an exception super class called Exception A and exception sub classes Exception B and Exception C, where Exception B inherits from Exception A and Exception C inherits from Exception B. Write a java program to demonstrate that the catch block for type Exception A catches exception of type Exception B and Exception C.
- 19) Write a Java program which opens a connection to standard port on well-known server, sends the data using socket and prints the returned data.
- 20) Create an interface for stack with push and pop operations. Implement the stack in two ways: fixed size stack and Dynamic stack (stack size is increased when stack is full).
- 21) Create multiple threads to access the contents of a stack. Synchronize thread to prevent simultaneous access to push and pop operations.
- 22) Write java program(s) that use collection framework classes Array List, Linked List, Hash Map, Linked Hash Map, Tree Map, Tree Set, Hash Table, Iterator, ListIterator.
- 23) Write a Java program to connect with any Database by using JDBC (Java Database Connectivity) specification.

Reference Books:

1. "Java: How to Program", Deitel P. J., and Deitel H. M., PHI, 8th Edition.
2. "Object Oriented Programming through Java", Radha Krishna P, Universities Press, 2007.
3. "Thinking in Java", Bruce Eckel, Pearson Education, 2006.

Course Outcomes:

At the end of the lab, students will be able to

1. Implement data types, variables and control structures to solve problems.
2. Use object-oriented concepts to solve problems including generating series primes, searching a pattern in a file.
3. Write and execute programs using inheritance and interfaces.
4. Develop programs using threads and Exception handling.
5. Implement programs using collection framework.
6. Design layouts using AWT and swing concepts.