Course: 601: Java

Course Title Credit Feaching per Week Minimum weeks per Semester 15 (Including Class work, examination, preparation, holidays etc.) June 2018 Purpose of Course To be learn the concept of OOPs Threads, Graphics, Database operation in Java. To be learn the comprehensive concepts of Java programming language that includes OOP concepts using core Java, desktop based visual designs using swing and applets. At the end of this course, a student will be able to comprehend the fundamental concepts required for the development and design of software systems. Pre-requisite Object Oriented Concepts of C++ Course Out come Sudents will be able to use various java concepts and develop a java based system Unit: 1: Java Concepts 1.1 introduction to Java and its tool-chain 1.1.1 history of Java 1.1.2 Java Architecture and its Components 1.1.2 Java Architecture and its Components 1.1.3 Java Platforms 1.1.4 Java S.E.M.E.E 1.1.5 Java Consepts 1.1.6 C++ and Java comparison 1.1.7 Features of Java 1.1.8 Installing java development kit 1.1.9 Java compiler and Interpreter 1.1.10 Using CLASSPATH 1.1.11 Using Cl	Course Code	601
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- 2.1.6 Chaining constructor using this() and Super()
- 2.1.7 Interfaces
- 2.1.8 Garbage Collection
- 2.1.9 Interfaces
- 2.1.10 Lambda Expressions
- 2.1.11 Generics
- 2.2 Packages and Imports
 - 2.2.1 Package levels
 - 2.2.2 Creating package
 - 2.2.3 Importing and Using Packages
 - 2.2.4 Package and inheritance
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- 2.3 Exception Handling
 - 2.3.1 Exception and error classes
 - 2.3.2 Exception Handling
 - 2.3.3 Throw statement and throws clause
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- 2.4 Thread Programming
 - 2.4.1 Overview of Threads
 - 2.4.2 Thread Life Cycle
 - 2.4.3 Creating Thread –Runnable interface
 - 2.4.4 Multithreaded programs
 - 2.4.5 Synchronization
 - 2.4.6 Deadlock
 - 2.4.7 Inter-Thread communication (wait & notify)
 - 2.4.8 Fork and Join
 - 2.4.9 Asynchronous processing

Unit: 3: I/O in JAVA

- 3.1 Java I/O
 - 3.1.1 Files and directories
 - 3.1.2 Byte and Character Streams
 - 3.1.3 PrintWriter Class
 - 3.1.4 Input and Output Streams
 - 3.1.5 Random access Files
 - 3.1.6 Serialization and Deserialization
- 3.2 Collections API
 - 3.2.1 Collection
 - 3.2.2 Java Streams
 - 3.2.3 Set-HashSet,TreeSet
 - 3.2.4 List-LinkedList
 - 3.2.5 Map-HashMap,TreeMap
- 3.3 Annotations

Unit: 4: JAVA SWING and APPLETS

- 4.1 Java Swing
 - 4.1.1 Java Foundation Classes
 - 4.1.2 Features
 - 4.1.3 Swing Components -
 - 4.1.3.1 Jcomponent
 - 4.1.3.2 JFrame
 - 4.1.3.3 JPanel
 - 4.1.3.4 Basic Containers
 - 4.1.3.4.1 Buttons, lables, text fields etc
 - 4.1.3.5 Event Handling
- 4.2 Applets
 - 4.3.1 Creating Applets
 - 4.3.2 Passing parameter to applet
 - 4.3.3 Drawing images on Applet
- 4.3 Sandbox Security Model
- 4.4 Policy tool

	Unit: 5: JDBC Connections
	5.1 Working with JDBC APIs
	5.1.2 Connection
	2.1.2 Statement
	5.1.3 Transaction methods
	5.1.4 Optimized Statements with prepare Statement and Callable
	Statement
	5.1.5 Metadata
	5.1.6 Rowset, Dettached Rowset
Reference Books	1. Java Complete Reference, Schildt, Herbert,9th edition,TMH
	2. Java Platform, Jaworski, Jamie, Techmedia
	3. Head First Java, Sierra, Bates, second edition,, SPD O'Relly
	4. Core Java for Beginners, S. Shah, V. Shah
Teaching Methodology	Black Board Teaching, power point presentation for theory, practical shown in
	projector for showing programs
Evaluation Method	30% Internal Exam
	70% External Exam