CSH305: Java Programming

Teaching Scheme	Examination Scheme	
Lectures: 3 hrs/Week	Class Test	– 12 Marks
Tutorials: 1 hr/Week	Teachers Assessment	– 6 Marks
	Attendance	– 12 Marks
Credits: 4	End Semester Exam	– 70 Marks

Prerequisite: C Programming, and OOPs Concepts.

Course Objectives:

1. To understand how to design, implement, test, debug, and document programs that use basic data types and computation, simple I/O, conditional and control structures, string handling and functions.
2. To understand the importance of Classes & objects along with constructors, Arrays and Vectors.
3. Discuss the principles of inheritance, interface and packages and demonstrate though problem analysis assignments how they relate to the design of methods, abstract classes and interfaces and packages.
4. To understand importance of multi-threading & different exception handling mechanisms.
5. To learn experience of designing, implementing, testing, and debugging graphical user interfaces in Java using applet and AWT that respond to different user events.
6. To understand Java Swings for designing GUI applications based on MVC architecture.

Detailed Syllabus:

Unit-1 **Core Java**: Introduction: Features of Java Language, JVM, Byte-code, Operator, Data type, Variable **Array:** Defining an Array, Initializing & Accessing Array, Multi –Dimensional Array. Control Statements, Methods & classes, inheritance, Types of Inheritance, Inheriting Data Members and Methods.
Unit-2 **Package, Interface and Exception Handling:** Exceptions & Errors, Types of Exception, Control Flow in Exceptions, Use of try, catch, finally, throw, throws in Exception Handling. In-built and User Defined Exceptions, Checked and Un-Checked Exceptions.
Unit-3 **I/O, String Handling and File Handling:** Operation on String, Mutable & Immutable String, Tokenizing a String, Creating Strings using String Buffer. **I/O:** Buffered Reader class , Input Stream Reader class, Scanner class. **File Handling:** Creating File, Finding File Reading and Writing File (Doc File, Html File, Text File).
Unit-4 **Multi-Threading:** Understanding Threads, Needs of Multi-Threaded Programming, Solution of Producer consumer problem by Multi Thread, Thread Life-Cycle, Thread Priorities, Synchronization of Thread.
Unit-5 **GUI Application Development:** Introduction to AWT, AWT controls Java Applet, Layout Managers, Menus, Images, Graphics, Event Handling, Swing, Containers, Panes, Frames, Dialogue boxes, working with image controls.
Unit-6 **JDBC**: The connectivity Model, JDBC/ODBC Bridge, Java, SQL package, connectivity to remote

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