

SLP 275 Java Programming Seminar

Course Description

Students will examine object-oriented components and characteristics including classes, inheritance, and polymorphism. In addition, students will learn how to write, debug, and execute Java programs and how to create Java applets and applications. Practice exercises will make use of Java's Abstract Window Toolkit (AWT) and Swing. Other techniques covered include threads, exception handling, packages, images, Java IO, sequential files, random access files, networking, utility classes, hashtables, string tokenizer and operations on bits. This course will focus on applets, AWT, JDBC, Swing, event handling, images, Java IO, sequential files, random access files, networking, Collections, Java Servlets, Java Beans, RMI and StAX (XML).

In this course you will learn to:

- Install the Java SDK and compile Java programs
- Create formulas and conditional expressions by using arithmetic, comparison, and logical operators.
- Create and use an instance of a class, including instance and shared data members, and shared and non-shared methods.
- Create and process data utilizing a one, two or three-dimensional array.
- Create an inherited class. Load and process data using constructors and class methods.
- Create and properly use interfaces and abstract classes with other user-defined Java classes.
- Handle exceptions as need arises providing clean and efficient code.
- Use multi-threaded design in large and cumbersome programs to provide more efficient Java programs.
- Use the AWT to create, read and process sequential files of data.
- Use the AWT to create and run Java applets.
- Efficiently use Java String class methods to process Java Strings.
- Create a Java package and import this package in a complete business application.
- Create, read and process data using advanced AWT components.
- Stream data from other sources, (Access, Oracle or other computer languages), into sequential files and process this data.
- Differentiate how random access files are often more useful than sequential files depending on the data being processed and the desired outcome.
- Convert the AWT file applications into Container Class file applications using the various Java Swing components.
- Use the Container class methods to develop a multitude of applications containing different data structures, (Lists, Queues, Stacks and Trees).
- Develop a complete working Java Servlet.
- Create and process Java Beans.
- Use Container classes in conjunction with Java's RMI. Develop a complete working RMI application.
- Understand how Java is used for networking.
- Use multi-threaded design in large and cumbersome programs to provide more efficient Java programs.
- Use the AWT to create, read and process sequential files of data.
- Use the AWT to create and run Java applets.
- Efficiently use Java String class methods to process Java Strings.
- Create a Java package and import this package in a complete business application.

Course Prerequisite

Previous programming experience would be helpful.

Required Textbook(s)/Software:

Java: The Complete Reference 7th edition, Author: Herbert Schildt, Publisher: McGraw-Hill, ISBN: 9-780-07226385-5

Class Schedule / Topical Outline

Week	Dates	Topic	Assignments
1		COURSE OBJECTIVES, DATA TYPES, VARIABLES, ARRAYS	Chapters 1,2,3
2		OPERATORS, CONTROL STATEMENTS, INTRODUCING CLASSES	Chapters 4,5,6
3		OVERLOADING, INHERITANCE, ABSTRACT CLASSES	Chapters 7,8
4		INTERFACES, PACKAGES, EXCEPTION HANDLING	Chapters 9,10
5		MULTITHREADED PROGRAMMING, JAVA APPLETS	Chapters 11, 21
6		AWT, STRING HANDLING	Chapters 15, 24

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Week	Dates	Topic	Assignments
7		Files and Streams, Creating Sequential Files, Reading Sequential Files	Chapter 19
8		Processing Sequential Files, Random Access Files	Chapter 19 (continued)
9		Event Handling, AWT, Swing	Chapters 22, 23, 24, 29,30
10		Collections, Java Servlets	Chapters 17, 31
11		JDBC, StAX	Instructor material (see Flash Video)
12		Java Beans, RMI	Chapter 27, 28