CIT 249
Java II: Java and the Web

Course Description

A continuation of CIT 149, this Level II programming language course focuses on Java client/server programming for the Internet. Topics will include interfacing with HyperText Markup Language (HTML) documents, applets, Java Database Connectivity (JDBC), servlets, and networking. Prerequisites: CIT 149, and CIT 150; or consent of instructor.

Course Competencies

Upon completion of this course, the student can:
1. Code Java programs using applets linked from HTML documents.
2. Code Java programs using multithreading.
3. Code Java programs using multimedia components such as images, animation, audio, and video.
4. Code Java programs that access sequential and random-access files.
5. Code Java programs that access databases.
7. Code client/server applications using Java.

Course Outline

I. Web Interfacing
   A. HyperText Markup Language (HTML) tags
   B. Class Applet
   C. Designing “Friendly” Applets
II. Multithreading
   A. Class Thread
   B. Thread synchronization
   C. Daemon Threads
   D. Thread Groups
III. Multimedia: Images, Animation, Audio and Video
   A. Loading, Displaying and Scaling Images
   B. Loading and Playing Audio Clips
   C. Animation Issues
   D. Image Maps
IV. Files and Streams
   A. Sequential-Access Files
   B. Random-Access Files
   C. Class File
V. Java Database Connectivity (JDBC)
   A. Database Systems
   B. Relational Database Model
   C. Structured Query Language
D. Reading, Inserting and Updating  
E. Transaction Processing  

VI. Servlets  
A. Servlet Technology  
B. Handling HyperText Transfer Protocol (HTTP) Requests  
C. Session Tracking  
D. Electronic Commerce Issues  

VII. Networking  
A. Manipulating Uniform Resource Locators (URLs)  
B. Establishing a Simple Server  
C. Establishing a Simple Client  
D. Client/Server Interaction  
E. Security Issues