CIS 407 – Java Programming II

Course Description

This course covers advanced topics in the Java object-oriented programming language. Students will test, document, and design business-oriented programs and solve advanced programming problems. Topics include advanced data structures, recursion, multithreading, and the application of Java constructs to the Internet and database development.

Instructional Materials


Course Learning Outcomes

1. Review and discuss the method of recursion.
2. Compare selection sort and merge sort algorithms.
3. Discuss the use and significance of linked lists.
4. Compare and contrast abstract and concrete data types.
5. Differentiate between stack and queue data types.
6. Describe hashing functions.
7. Describe and demonstrate the use of binary search trees, priority queues, and heaps.
8. Demonstrate the ability to implement generic classes and methods.
9. Design programs that handle events from user-interface components.
10. Create Java programs that interact with disk files and related sources of bytes and characters.
11. Describe and apply multithreading behavior.
12. Design programs that communicate with Web servers and server-side applications through the Hypertext Transfer Protocol (HTTP).
13. Design Java programs that use the Structured Query Language to query and update relational databases.
15. Describe the Java Server faces framework and use in Web applications.
16. Use technology and information resources to research issues in Java programing.
17. Write clearly and concisely about Java programing using proper writing mechanics and technical style conventions.