ICTPRG547

Apply advanced programming skills in another language: Java

Activity and Selected Web Links

1. In relation to your Java2 assignment, present a summary of your findings in each of the following areas. *(Present sample code where applicable.)*

Double linked Lists (Elements 1& 2)

- The structure of…
- Best application of…
- Features of an applicable Search Routine.

Binary Trees (Elements 1& 2)

- The structure of
- Best application of…
- Features of an applicable Search Routine.

Sort Routines: (Element 2)

- Three Types, with their respective best use or form of application

Program Communication: (Elements 3 & 4)

- Component communication mechanism
- Communication with the operating system
- Structure and linking techniques for 3rd party libraries / packages.

Hashing Algorithm

- Purpose(s) of
- Standard algorithm and/or application of

Program Documentation: (Element 6)

- A sample program header including sample version control
- A process for creating external program documentation

Program Testing: (Element 7)

- Test planning and developing test cases
- Completing testing
- Recording test results

Programming: (Element 8)

- Using complex data structures (such as a doubly linked list and binary tree) and complex algorithms (such as sort or hashing algorithms)
- Deciding on the most appropriate data structures and complex algorithms based on the client and technical requirements for a software development project.

Web links references:

Double linked Lists

- The structure of…
- Best application of…
- Features of an applicable Search Routine.

Explanation: https://www.youtube.com/watch?v=195KUinjBpU
Code Sample: *staff.informatics.buu.ac.th/~seree/lecture/javaProgs261/d**list**/D**List**.java*

Binary Trees

- The structure of
- Best application of…
- Features of an applicable Search Routine.

Explanation and sample code:
https://www.cs.usfca.edu/~galles/visualization/BST.html
https://www.youtube.com/watch?v=M6lYob8STMI
https://www.youtube.com/watch?v=UcOxGmj45AA

https://www.youtube.com/watch?v=GsrPQ32sPTI (Traversals)

Sort Routines

- Three Types, with their respective best use or form of application

Comparison and explanations:
https://www.toptal.com/developers/sorting-algorithms/
http://mathbits.com/MathBits/Java/arrays/Sorting.htm

Program Communication

- Component communication mechanism
- Communication with the operating system
- Structure and linking techniques for 3rd party libraries / packages.

Information and Sample Code:

- www.cse.yorku.ca/course_archive/2011-12/W/3214/j-chat-ltr.pdf
- http://pirate.shu.edu/~wachsmut/Teaching/CSAS2214/Virtual/Lectures/chat-client-server.html
- http://www.dreamincode.net/forums/topic/259777-a-simple-chat-program-with-clientserver-gui-optional/

Program Documentation

- A sample program header including sample version control
- A process for creating external program documentation

  - http://faculty.cs.niu.edu/~mcmahon/CS241/c241man/node6.html
  - http://web.cs.wpi.edu/~cs1005/common/documentation.html
  - http://www-inf.int-evry.fr/cours/java/JAVADOC/writingdoccomments.html

Additional Links

- Comparison of Programming Languages

  https://en.wikipedia.org/wiki/Comparison_of_programming_languages

- Techniques for developing large-scale applications

  https://en.wikipedia.org/wiki/Programming_in_the_large_and_programming_in_the_small

- Programming with complex data structures

  www.jedsoft.org/slang/doc/pdf/slang.pdf

- Procedures for using a third-party supplied library, for standard programming features.

  http://web.cs.usfca.edu/basics/java-basics/third-party-libraries

- Background on Hashing Algorithms.

  https://www.cs.cmu.edu/~adamchik/15-121/lectures/Hashing/hashing.html