

COSC 310 Project – Huffman Trees

Goal: Create a program that will show the Huffman encoding of a text file.

Description: Your program will accept a text file from the command line and show the variable-length Huffman encoding that results. Print out both the letter frequencies and the resulting encoded text. Also print how many bytes the original and the new text each require.

This will require a few components. You will need a table of some sort to help count frequencies and a priority queue to build your Huffman tree.

Bonus Opportunity: Read a text file containing an encoded string as input and output the original message.

Tips:

- Start off with design. Draw out your ideas and write out the pseudocode.
- Create the frequency table first.
- Look to your text for how to approach a priority queue.
- Hufftree-building algorithm in brief:
 1. Create n Hufftrees, each which is just a single leaf with a single letter
 2. Put the trees into the priority queue
 3. Remove two, combine them and re-queue the result.
 4. Repeat until the queue is empty, and the final tree is used for encoding.
- Consider making leaves a different kind of node from internal nodes
- Start early

Please see me with questions or concerns.

Checklist

Check	Item	Points
	Frequency Table	15%
	Priority Queue	10%
	Huffman Tree	40%
	Encoding	20%
	Documentation 1. Comments 2. Post-Mortem	10%
	Deliverables 1. Source code 2. YourProgram.jar 3. Readme.txt	5%
	Bonus Decoding	+20%

Avoid List

Check	Item	Points
	Bugs/Typos	-10+%
	Compilation problems	-50+%
	Design problems	-10+%

Please see me with questions or concerns.