

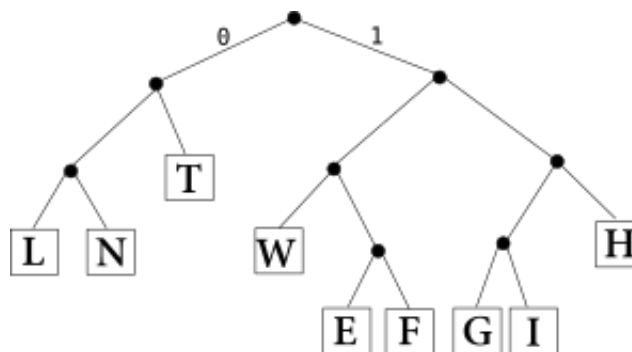
Quiz 2

Wed Feb 14

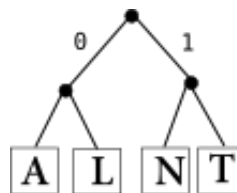
You have up to 20 minutes. You may use a standard calculator if necessary, but no text book or notes.

1. Below is a tree representing a variable-width encoding of 9 letters. Use it to:

- decode the bits 10111101110011101 into a word: _____
- encode the word FELT as bits: _____



2. Draw a tree representing a **variable-width** encoding of the four letters A, L, N, and T. Use it to encode the word ATLANTA. The **fixed-width tree** (below) uses exactly 2 bits per character, so encoding ATLANTA requires 14 bits. How many bits does **your** tree need to encode ATLANTA?



3. If an image uses 12 bits for each pixel, what is the maximum number of distinct colors it can contain?
4. Encode the following 8×8 icon into hexadecimal, using 1 bit per pixel.

