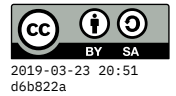


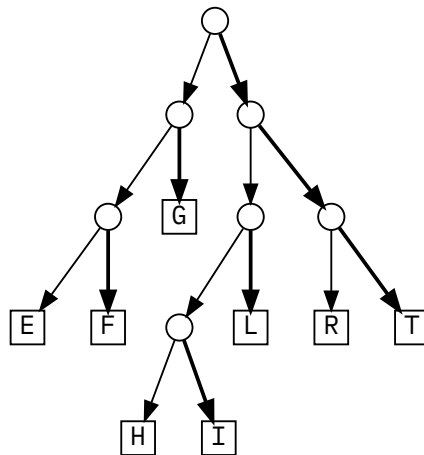
# Quiz 2

19 February 2019



## Solutions

Here is a tree representing a variable-width encoding of eight letters. Use it to answer the following questions. As usual, we will represent a **left** branch as 0, and a **right** branch as 1.



1. Encode the word GRIFT into bits: 01 110 1001 001 111
2. Decode the bits 0011011001011000111 into a word: FLIGHT
3. Below is a different tree, representing a fixed-width encoding of the same eight letters.
  - Give one example of a word whose bit representation will be **shorter using the variable-width** code than the fixed-width code: EGG
  - Give one example of a word whose bit representation will be **shorter using the fixed-width** code than the variable-width code: HILL

