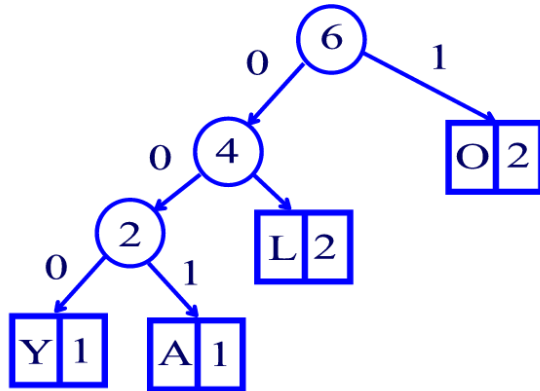


CS212 - Project 4 – Binary Trees – Encoding

How to retrieve the codes from the tree below:



The encoding scheme for LOYOLA

The codes are:

Y = 000

A = 001

L = 01

O = 1

⇒ Encoding of LOYOLA = 011000101001

To retrieve the codes, do a recursive traversal of the binary tree. In addition to a Node parameter, you will need a String parameter; that String stores the "current" code.

Note that we have many codes to retrieve and only one String.

1 - If the node you are visiting is a leaf, the value of the String is the encoding for that node/letter. You can output the letter and the code, and place them in some ArrayList. But you are not done traversing the tree and retrieving the codes, there are other codes to retrieve .. with that same String.

2 – If the node you are visiting is NOT a leaf, it does not store a letter.

You need to continue traversing, i.e. visit its left and right children.

As you are visiting its left child, you are going left and will need to add a 0 at the end of the String. After you are done visiting its left child, you will need to "backtrack" and take out the 0 that you added at the end of the String.

As you are visiting its right child, you are going right and will need to add a 1 at the end of the String. After you are done visiting its right child, you will need to "backtrack" and take out the 1 that you added at the end of the String.