Project 4

You are to write a program that reads three text files given as command line parameters. The first file is an inorder traversal of a Huffman code tree and the second parameter is the postorder traversal of the same tree. The third file is the encoded text, given as ASCII 0s and 1s.

Your program should:
- Compute the Huffman code tree from the two traversals.
- Decode the text, writing the output to standard output (cout).

The format of the inorder and postorder traversals will be integer values separated by whitespace. The leaves of the tree will be values < 128, representing the ASCII value of the letter. The internal nodes of the tree will be values 128 and greater.

Requirements:
- You must use good object-based organization, i.e. use classes in an appropriate way.
- You are allowed to use any data structure in the standard library that has been coded on either a lab or project: vector, list, stack, queue.
- You must use g++ -Wall -std=c++11 to compile
- You must do your own work; you must not share code.
- Submit your project in ZyBooks by 11:59pm (right before midnight) on the due date.

An example run:
./decode inorder0.txt postorder0.txt encoded0.txt

inorder0.txt:
66 129 76 128 77 130 65

postorder0.txt:
66 76 77 128 129 65 130

encoded0.txt:
101010010111

Output:
ALABAMA

Another example run:
./decode inorder1.txt postorder1.txt encoded1.txt

inorder1.txt:
10 128 33 134 121 133 117 138 114 135 106 131 71 143 100 140 32 145 101 141 89 130 108 137 99 144 111 142 116 139 120 129 98 136 104 132 46

postorder1.txt:
10 33 128 121 117 133 134 114 106 71 131 135 138 100 32 140 143 101 89 108 130 99 137 141 111 116 120 98 129 104 46 132 136 139 142 144 145

encoded1.txt:
1010011000011011010100101111001010001001111101111101000111101001 1110011100111011110001000101001011111010101000101111100000001111 10110010011001101101111101000011

Output:
You decoded the text correctly.
Good job!