is alternating even and odd on path to number (any bintree)

Hint: let the function return TRUE if and only if we’ve found the number and the path is alternating. In any other situation, (not found) or (not alternating) return FALSE.

bool isAlt(node \*root, int number)

{

if (root == nullptr)

return false;

else if (root->data == number)

return true;

else

{

bool x = isAlt(root->left, number);

bool y = isAlt(root->right, number);

if (x)

{

if (root->data % 2 == 0)

return root->left->data % 2 == 1;

else

return root->left->data % 2 == 0;

}

else if (y)

{

if (root->data % 2 == 0)

return root->right->data % 2 == 1;

else

return root->right->data % 2 == 0;

}

else //both false

{

return false;

}

}

}

string getPath(node \*root, int number)

{

if (root == nullptr)

return "X";

else if (root->data == number)

return "";

else

{

string x = getPath(root->left, number);

string y = getPath(root->right, number);

if (x == "X" && y == "X") return "X";

else if (x == "X") return "R" + y;

else if (y == "X") return "L" + x;

}

return ""; // never happens

}