**Applied Programming**

**Fall 2017**

**Quiz # 3**

**Registration #** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Question:** You are given the following declarations. Add a function named removeLeaves(Node \*v) that removes all leaf nodes from the tree rooted at v.

struct Node{

int key, depth, height;

struct Node \*parent, \*leftChild, \*rightChild;

};

class BinTree{

private:

struct Node\* root;

int height, size;

public:

BinTree();

~BinTree();

// Other member functions are not shown here.

// If you assume some function exists, clearly show the function name, return type

// arguments and a description of what it does

removeLeaves(struct Node \*v){

if ( ( v->leftChild == NULL ) &&( v->rightChild == NULL ) )

{

if (v->parent->leftChild == v)

v->parent ->leftChild = NULL;

else

v->parent->rightChild = NULL;

delete v;

return;

}

removeLeaves(v->leftChild);

removeLeaves(v>rightChild);

}

};