

## 1) (10 pts) DSN (Binary Trees)

Demonstrate your understanding of recursion by rewriting the following recursive function, which operates on a binary tree, as an **iterative** function. In doing so, you must abide by the following restrictions:

1. Do not write any helper functions in your solution.
2. Do not make any recursive calls in your solution.

```
int foo(node *root) {
    if (root == NULL) return 1;
    if (root->left == NULL && root->right == NULL) return 2;
    if (root->left == NULL) return 3 * foo(root->right);
    if (root->right == NULL) return 4 * foo(root->left);
    if (root->right->data > root->left->data) return 5 * foo(root->right);
    return 6 * foo(root->left);
}
```

```
int iterative_foo(node *root) {
```

```
}
```