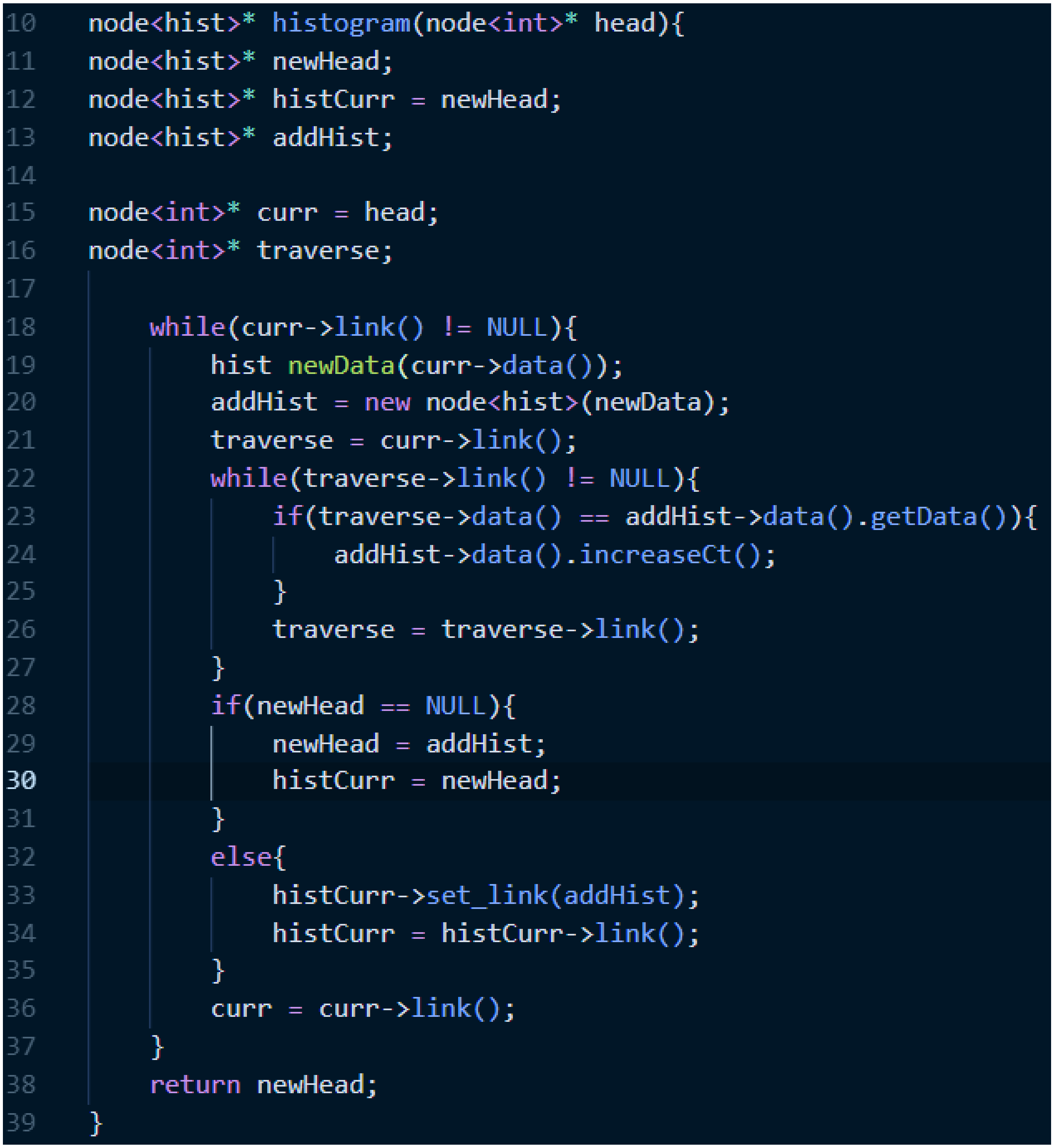
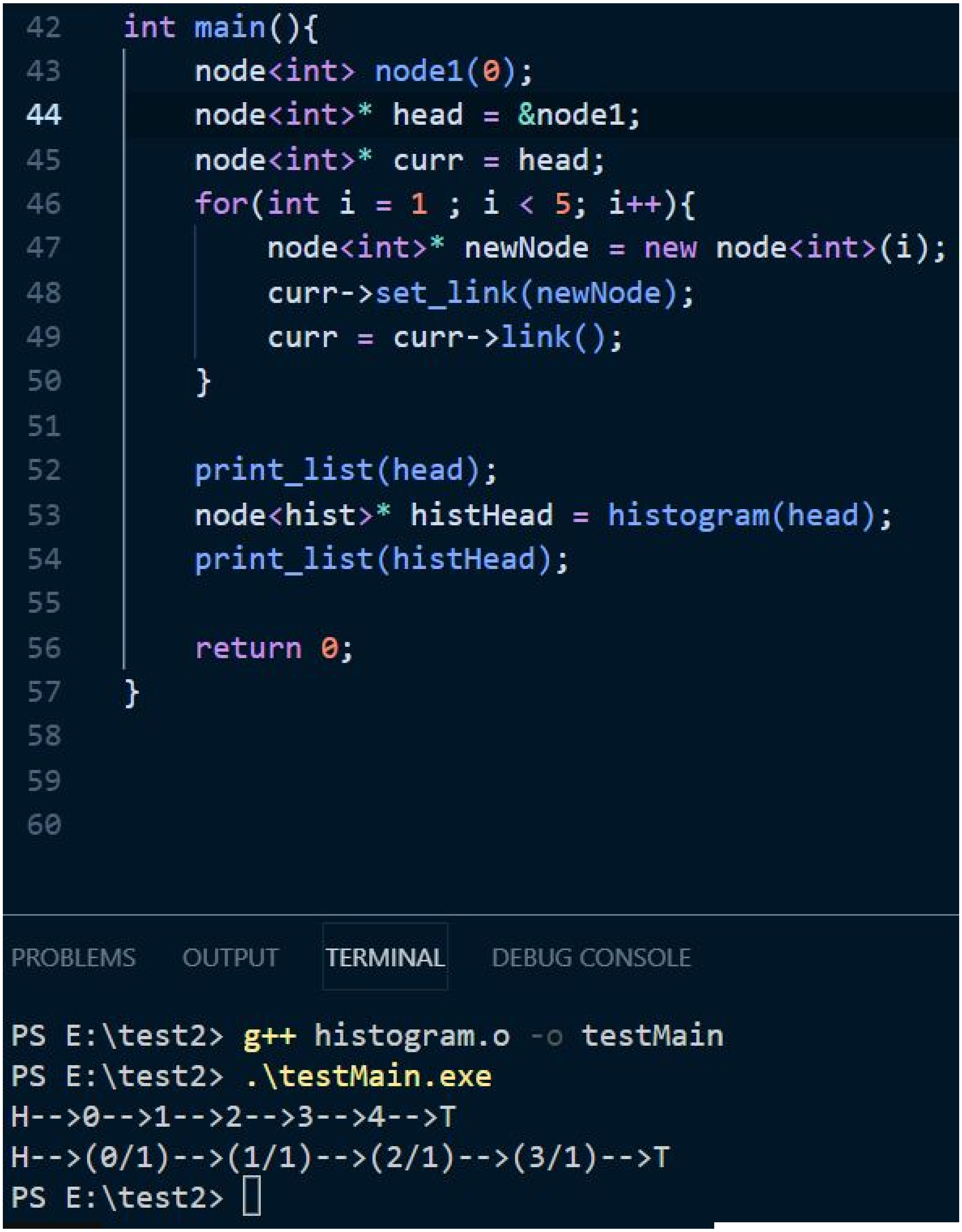


```cpp
node<hist>* histogram(node<int>* head){
node<hist>* newHead;
node<hist>* histCurr = newHead;
node<hist>* addHist;

node<int>* curr = head;
node<int>* traverse;

    while(curr->link() != NULL){
        hist newData(curr->data());
        addHist = new node<hist>(newData);
        traverse = curr->link();
        while(traverse->link() != NULL){
            if(traverse->data() == addHist->data().getData()){
                addHist->data().increaseCt();
            }
            traverse = traverse->link();
        }
        if(newHead == NULL){
            newHead = addHist;
            histCurr = newHead;
        }
        else{
            histCurr->set_link(addHist);
            histCurr = histCurr->link();
        }
        curr = curr->link();
    }
    return newHead;
}
```



```cpp
int main(){
    node<int> node1(0);
    node<int>* head = &node1;
    node<int>* curr = head;
    for(int i = 1 ; i < 5; i++){
        node<int>* newNode = new node<int>(i);
        curr->set_link(newNode);
        curr = curr->link();
    }

    print_list(head);
    node<hist>* histHead = histogram(head);
    print_list(histHead);

    return 0;
}
```

```
PS E:\test2> g++ histogram.o -o testMain
PS E:\test2> .\testMain.exe
H-->0-->1-->2-->3-->4-->T
H-->(0/1)-->(1/1)-->(2/1)-->(3/1)-->T
PS E:\test2> 
```