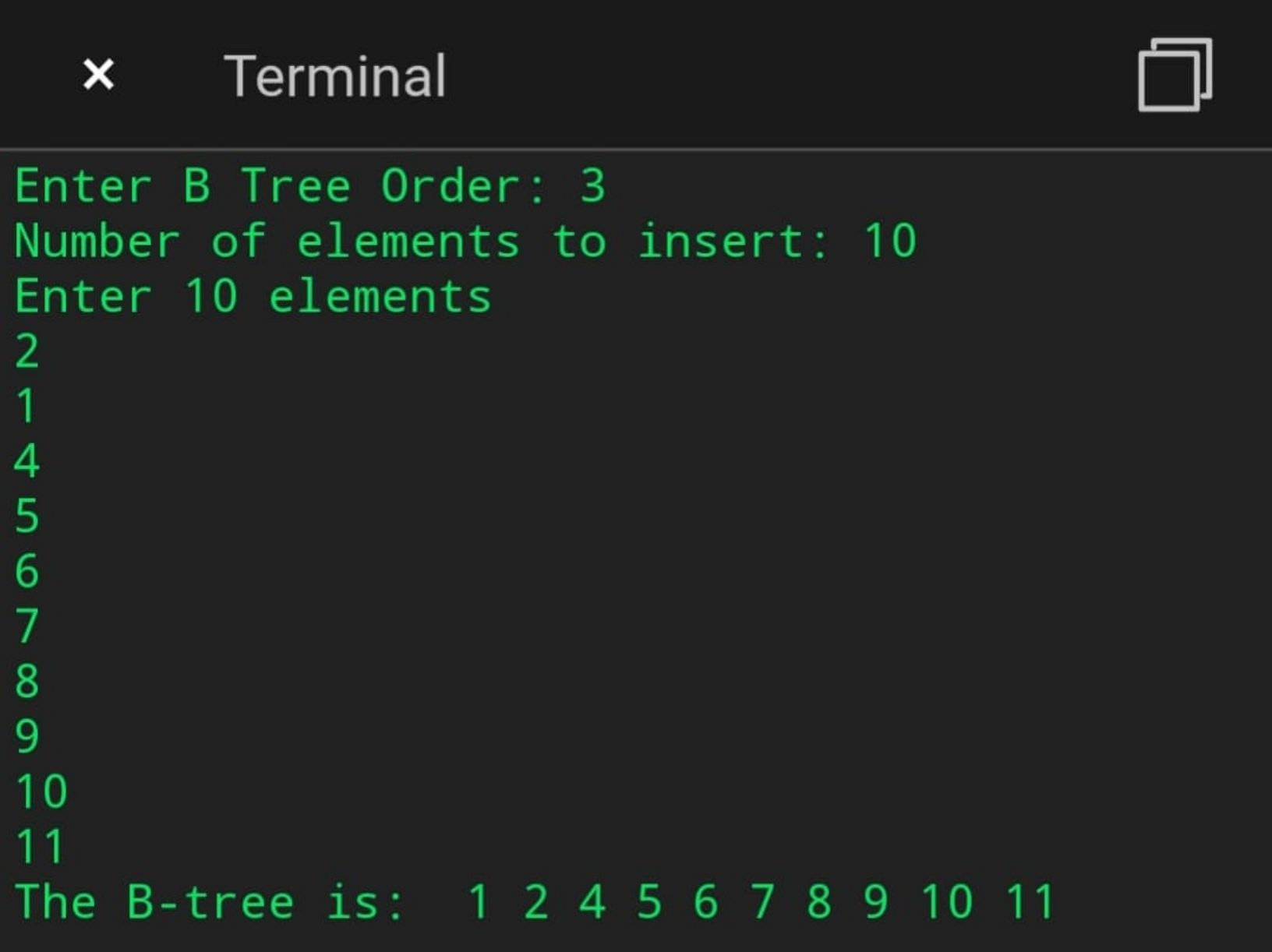
```
#include <iostream>
using namespace std;

class Node {
    int *keys;
    int t;
    Node **C;
    int n;
    bool leaf;

  public:
    Node(int tt, bool lleaf);

    void insertNonFull(int k);
    void splitChild(int i, Node *y);
    void traverse();

    friend class BTree;
};

class BTree {
    Node *root;
    int t;

  public:
    BTree(int tt) {
        root = NULL;
        t = tt;
    }

    void traverse() {
        if (root) root->traverse();
    }

    void insert(int k);
};

Node::Node(int tt, bool lleaf) {
    t = tt;
    leaf = lleaf;

    keys = new int[2 * t - 1];
    C = new Node *[2 * t];

    n = 0;
}

void Node::traverse() {
    int i;
    for (i = 0; i < n; i++) {
        if (leaf == false) C[i]->traverse();
        cout << " " << keys[i];
    }

    if (leaf == false) C[i]->traverse();
}

void BTree::insert(int k) {
    if (root == NULL) {
        root = new Node(t, true);
        root->keys[0] = k;
        root->n = 1;
    } else {
        if (root->n == 2 * t - 1) {
            Node *s = new Node(t, false);

            s->C[0] = root;

            s->splitChild(0, root);

            int i = 0;
            if (s->keys[0] < k) i++;
            s->C[i]->insertNonFull(k);

            root = s;
        } else
            root->insertNonFull(k);
    }
}

void Node::insertNonFull(int k) {
    int i = n - 1;

    if (leaf == true) {
        while (i >= 0 && keys[i] > k) {
            keys[i + 1] = keys[i];
            i--;
        }

        keys[i + 1] = k;
        n = n + 1;
    } else {
        while (i >= 0 && keys[i] > k) i--;

        if (C[i + 1]->n == 2 * t - 1) {
            splitChild(i + 1, C[i + 1]);

            if (keys[i + 1] < k) i++;
        }
        C[i + 1]->insertNonFull(k);
    }
}

void Node::splitChild(int i, Node *y) {
    Node *z = new Node(y->t, y->leaf);
    z->n = t - 1;

    for (int j = 0; j < t - 1; j++)
        z->keys[j] = y->keys[j + t];

    if (y->leaf == false)
        for (int j = 0; j < t; j++)
            z->C[j] = y->C[j + t];

    y->n = t - 1;
    for (int j = n; j >= i + 1; j--)
        C[j + 1] = C[j];

    C[i + 1] = z;

    for (int j = n - 1; j >= i; j--)
        keys[j + 1] = keys[j];

    keys[i] = y->keys[t - 1];
    n = n + 1;
}

int main() {
    int o;
    cout << "Enter B Tree Order: ";
    cin >> o;
    BTree t(o);

    int k, ele;
    cout << "Number of elements to insert: ";

    cin >> k;
    cout << "Enter " << k << " elements \n";
    while (k--) {
        cin >> ele;
        t.insert(ele);
    }

    cout << "The B-tree is: ";
    {
        // * In a different block because it doesn't
        t.traverse();
        cout << endl;
    }

}
```


Terminal
Enter B Tree Order: 3
Number of elements to insert: 10
Enter 10 elements
2
1
4
5
6
7
8
9
10
11
The B-tree is:  1 2 4 5 6 7 8 9 10 11