#include<iostream>

using namespace std;

class node {

public:

int data;

node\* link[10];

};

class Tree {

public:

void insertChap(node\*);

void insertSec(node\*);

void insertSubSec(node\*);

void display(node\*);

};

void Tree::insertChap(node\* root) {

int chap;

cout << "\nEnter number of chapters in the book: ";

cin >> chap;

for (int i = 0; i < chap; i++) {

node\* n = new node;

n->data = i + 1;

for (int j = 0; j < 10; j++)

n->link[j] = NULL;

root->link[i] = n;

insertSec(n);

}

}

void Tree::insertSec(node\* root) {

int sec;

cout << "\nEnter number of sections in chapter " << root->data << ": ";

cin >> sec;

for (int i = 0; i < sec; i++) {

node\* n = new node;

n->data = i + 1;

for (int j = 0; j < 10; j++)

n->link[j] = NULL;

root->link[i] = n;

insertSubSec(n);

}

}

void Tree::insertSubSec(node\* root) {

int subsec;

cout << "\nEnter number of subsections in section " << root->data << ": ";

cin >> subsec;

for (int i = 0; i < subsec; i++) {

node\* n = new node;

n->data = i + 1;

for (int j = 0; j < 10; j++)

n->link[j] = NULL;

root->link[i] = n;

}

}

void Tree::display(node\* root) {

if (root) {

cout << "\nBook Index:\n";

for (int i = 0; root->link[i] != NULL; i++) {

node\* ch = root->link[i];

cout << "\nChapter " << ch->data;

for (int j = 0; ch->link[j] != NULL; j++) {

node\* s = ch->link[j];

cout << "\n Section " << ch->data << "." << s->data;

for (int k = 0; s->link[k] != NULL; k++) {

node\* p = s->link[k];

cout << "\n Subsection " << ch->data << "." << s->data << "." << p->data;

}

}

}

}

}

int main() {

node\* root = new node;

root->data = 0;

for (int i = 0; i < 10; i++)

root->link[i] = NULL;

Tree t;

t.insertChap(root);

t.display(root);

return 0;

}