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

struct node {
   string label;
   int ch_count;
   struct node* child[10];
};

class Book {
public:
   node* root;

   Book() {
      root = nullptr;
   }

   void create_tree();
   void display(node* r1);
};

void Book::create_tree() {
   int tchapters, tsections, tsubsections;
   int i, j, k;
   root = new node;
   cout << "Enter name of book: ";
   cin.ignore();
   getline(cin, root->label);

   cout << "Enter number of chapters in the book: ";
```

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cin >> tchapters;
root->ch_count = tchapters;

for (i = 0; i < tchapters; i++) {
   root->child[i] = new node;
   cout << "Enter the name of Chapter " << i + 1 << ": ";
   cin.ignore();
   getline(cin, root->child[i]->label);

   cout << "Enter number of sections in Chapter '" << root->child[i]->label << "': ";
   cin >> tsections;
   root->child[i]->ch_count = tsections;
   cin.ignore();

   for (j = 0; j < tsections; j++) {
      root->child[i]->child[j] = new node;
      cout << "Enter the name of Section " << j + 1 << ": ";
      getline(cin, root->child[i]->child[j]->label);

      cout << "Enter number of subsections in Section '" << root->child[i]->child[j]->label << "': ";
      cin >> tsubsections;
      root->child[i]->child[j]->ch_count = tsubsections;
      cin.ignore();

      for (k = 0; k < tsubsections; k++) {
         root->child[i]->child[j]->child[k] = new node;
         cout << "Enter the name of Subsection " << k + 1 << ": ";
         getline(cin, root->child[i]->child[j]->child[k]->label);
      }
   }
}
```

```
}

void Book::display(node* r1) {
    if (r1 != nullptr) {
        cout << "\n### Book Hierarchy ###\n";
        cout << "Book Title: " << r1->label << endl;

        for (int i = 0; i < r1->ch_count; i++) {
            cout << " Chapter " << i + 1 << ": " << r1->child[i]->label << endl;
            cout << " --> Sections:\n";

            for (int j = 0; j < r1->child[i]->ch_count; j++) {
                cout << "    > Section " << j + 1 << ": " << r1->child[i]->child[j]->label << endl;
                cout << "    --> Subsections:\n";

                for (int k = 0; k < r1->child[i]->child[j]->ch_count; k++) {
                    cout << "      > Subsection " << k + 1 << ": " << r1->child[i]->child[j]->child[k]->label << endl;
                }
            }
        }
    } else {
        cout << "Tree is empty. Create the book first.\n";
    }
}

int main() {
    int choice;
    Book myBook;

    cout << "*** DSAL PRACTICAL NO - 03 (B-05) ***" << endl;
```

```
    while (true) {
        cout << "\n*** MENU ***" << endl;
        cout << "1. Create Book." << endl;
        cout << "2. Display Book Hierarchy." << endl;
        cout << "3. Exit." << endl;
        cout << "Enter your choice: ";
        cin >> choice;

        if (choice == 1) {
            myBook.create_tree();
        } else if (choice == 2) {
            myBook.display(myBook.root);
        } else if (choice == 3) {
            cout << "Exiting Program." << endl;
            break;
        } else {
            cout << "Invalid choice." << endl;
        }
    }

    return 0;
}
```