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

struct node
{
   string name;
   node *B[5];
};

class book
{
   int c, s, sub;

public:
   node *temp = new node;

   void Getnewnode()
   {
      for (int i = 0; i < 5; i++)
      {
         temp->B[i] = new node;
         temp->B[i]->name = "empty";
         for (int j = 0; j < 5; j++)
         {
            temp->B[i]->B[j] = new node;
            temp->B[i]->B[j]->name = "empty";
            for (int k = 0; k < 5; k++)
            {
               temp->B[i]->B[j]->B[k] = new node;
               temp->B[i]->B[j]->B[k]->name = "empty";
            }
```

```
        }
    }
}
void add_title()
{
    cout << "ENTER THE TITLE OF THE BOOK:";
    cin >> temp->name;
    Getnewnode();
}

void add_chapter()
{
    string cname;
    int cnum;
    cout << "ENTER NUMBER OF CHAPTERS IN THE BOOK:";
    cin >> cnum;
    c = cnum;
    for (int i = 0; i < cnum; i++)
    {
        cout<< "Chapter " << i + 1 << ":";
        cin >> cname;
        temp->B[i]->name = cname;
    }
}

void add_section()
{
    string sname;
    int snum;
    int chnum;
    cout << "CHAPTER NUMBER WHERE YOU NEED TO ADD SECTIONS:";
```

```
    cin >> chnum;
    cout << "ENTER NUMBER OF SECTIONS:";
    cin >> snum;
    s = snum;
    for (int i = 0; i < snum; i++)
    {
        cout << "Section " << chnum << "." << i + 1 << ":";
        cin >> sname;
        temp->B[chnum - 1]->B[i]->name = sname;
    }
}

void add_sub_section()
{
    string subname;
    int subnum;
    int snum;
    int chnum;
    cout << "CHAPTER NUMBER WHERE YOU NEED TO ADD SECTIONS:";
    cin >> chnum;
    cout << "SECTION NUMBER WHERE YOU NEED TO ADD SUB-SECTIONS:";
    cin >> snum;
    cout << "ENTER NUMBER OF SUB-SECTIONS:";
    cin >> subnum;
    sub = subnum;
    for (int i = 0; i < subnum; i++)
    {
        cout << endl
             << "Sub-Section " << chnum << "." << snum << "." << i + 1 << " = ";
        cin >> subname;
        temp->B[chnum - 1]->B[snum - 1]->B[i]->name = subname;
```

```
    }
}

void display()
{
    cout << endl
        << "======= INDEX =======" << endl;
    cout << endl
        << ":  TITLE   : " << temp->name;
    cout << endl
        << ": CHAPTERS : " << endl;
    for (int i = 0; i < c; i++)
    {
        if (temp->B[i]->name != "empty")
            cout << endl
                << ": " << i + 1 << ". " << temp->B[i]->name;
        for (int j = i; j < s; j++)
        {
            if (temp->B[i]->B[j]->name != "empty")
                cout << endl
                    << " : " << i + 1 << "." << j + 1 << " " << temp->B[i]->B[j]->name;
            for (int k = 0; k < sub; k++)
            {
                if (temp->B[i]->B[j]->B[k]->name != "empty")
                    cout << endl
                        << "  : " << i + 1 << "." << j + 1 << " " << temp->B[i]->B[j]->B[k]->name;
            }
        }
    }
    cout << endl;
}
```

```
};

int main()
{
   book b1;
   b1.add_title();
   int c;
   while (1)
   {

cout<<"**************************************************************************"<
<endl;
      cout << "1-Add chapter.\n2-Add scetion.\n3-Add subsection.\n4-Display book.\n5-Exit." << endl;
      cout << "Enter your choice:";
      cin >> c;
      if (c == 1)
      {
         b1.add_chapter();
      }
      else if (c == 2)
         b1.add_section();
      else if (c == 3)
         b1.add_sub_section();
      else if (c == 4)
         b1.display();
      else if (c == 5)
      {
         cout << "End of the program." << endl;
         break;
      }
      else
         cout << "Wrong Choice!!!" << endl;
```

```
    }
}
```

OUTPUT:-

```
ENTER THE TITLE OF THE BOOK:DSA
**************************************************************************
1-Add chapter.
2-Add scetion.
3-Add subsection.
4-Display book.
5-Exit.
Enter your choice:1
ENTER NUMBER OF CHAPTERS IN THE BOOK:3
Chapter 1:HASH
Chapter 2:TREES
Chapter 3:GRAPHS
**************************************************************************
1-Add chapter.
2-Add scetion.
3-Add subsection.
4-Display book.
5-Exit.
Enter your choice:2
CHAPTER NUMBER WHERE YOU NEED TO ADD SECTIONS:1
ENTER NUMBER OF SECTIONS:3
Section 1.1:Insert
Section 1.2:Collision
Section 1.3:Deletion
**************************************************************************
1-Add chapter.
2-Add scetion.
```

3-Add subsection.

4-Display book.

5-Exit.

Enter your choice:3

CHAPTER NUMBER WHERE YOU NEED TO ADD SECTIONS:1

SECTION NUMBER WHERE YOU NEED TO ADD SUB-SECTIONS:2

ENTER NUMBER OF SUB-SECTIONS:2

Sub-Section 1.2.1 = Replacement

Sub-Section 1.2.2 = Without-Replacement

****

1-Add chapter.

2-Add scetion.

3-Add subsection.

4-Display book.

5-Exit.

Enter your choice:4

======= INDEX =======

: TITLE : DSA

: CHAPTERS :

: 1. HASH

: 1.1 Insert

: 1.2 Collision

: 1.2 Replacement

: 1.2 Without-Replacement

: 1.3 Deletion

: 2. TREES

: 3. GRAPHS

****

1-Add chapter.

2-Add scetion.

3-Add subsection.

4-Display book.

5-Exit.

Enter your choice:5

End of the program.