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Class: SE-A

Roll No: COSA75

Practical No. 3

```
#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 BOOK= ";
        cin>>cnum;
        c=cnum;
        for(int i=0;i<cnum;i++)
        {
                cout<<endl<<"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<<endl<<"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=0;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]->name!="empty")
                    cout<<endl<<":"<<i+1<<"."<<j+1<<""<<temp->B[i]->B[j]-
>B[k]->name;
                }
            }
        }
        cout<<endl;
        }
};
int main()
{
```

```
    book s;
    s.add_title();
    s.add_chapter();
    s.add_section();
    s.add_sub_section();
    s.display();
    return 0;
}
```

Output:

```
Enter the title of the Book: DSA
ENTER NUMBER OF CHAPTERS IN BOOK= 3

Chapter1=ABC

Chapter2=DEF

Chapter3=XYZ
CHAPTER NUMBER WHERE YOU NEED TO ADD SECTIONS= 2
ENTER NUMBER OF SECTIONS= 2

Section2.1=A

Section2.2=B
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-Section1.2.1=P
```

Sub-Section1.2.2=Q

----------INDEX----------

TITLE:DSA

CHAPTERS:

:1.ABC

:2.DEF

:2.1A

:1.2.1.P

:1.2.2.Q

:2.2B

:3.XYZ