

```
I can eat!  
I can sleep!  
I can bark! Woof woof!!
```

```
Process returned 0 (0x0)   execution time : 0.363 s  
Press any key to continue.
```

```
Content in parent class  
Process returned 0 (0x0)   execution time : 0.140 s  
Press any key to continue.
```

```
I can eat!  
I can sleep!  
I can bark! Woof woof!!  
I am a mammal  
My color is black
```

```
Process returned 0 (0x0)   execution time : 0.237 s  
Press any key to continue.
```

```
Content in parent classContent in other class  
Process returned 0 (0x0)   execution time : 0.111 s  
Press any key to continue.
```

```

1  | #include <iostream>
2  | #include <string.h>
3  | using namespace std;
4  |
5  | class College {
6  | protected:
7  |     string director_name;
8  | private:
9  |     string principal_name;
10 | public:
11 |     string college_name;
12 |
13 |     void initCollege(string clg, string dir, string principal)
14 |     {
15 |         college_name = clg;
16 |         director_name = dir;
17 |         principal_name = principal;
18 |     }
19 |
20 |     string getPrincipalName()
21 |     {
22 |         return principal_name;
23 |     }
24 | };
25 |
26 | class Department : public College {
27 | protected:
28 |     string hod_name;
29 | public:
30 |     string department_name;
31 |
32 |     void initDepartment(string department, string hod)
33 |     {
34 |         department_name = department;
35 |         hod_name = hod;
36 |     }
37 |
38 |     void displayDetails(string c)
39 |     {
40 |         cout << "College Name: " << college_name << endl;
41 |         cout << "Principal Name: " << c << endl;
42 |         cout << "Director Name: " << director_name << endl;
43 |         cout << "Department Name: " << department_name << endl;
44 |         cout << "HOD Name: " << hod_name << endl;
45 |     }
46 |
47 |     string getDirectorName()

```

```

46
47     string getDirectorName()
48     {
49         return director_name;
50     }
51 };
52
53 class Library {
54 public:
55     int Library_card_no;
56     int No_of_books_issued;
57
58     void initLibrary(int cardNumber,int bookIssued)
59     {
60         Library_card_no = cardNumber;
61         No_of_books_issued = bookIssued;
62     }
63
64     void displayLibraryDetail()
65     {
66         cout << "Library Card No.: " << Library_card_no << endl;
67         cout << "No. of books issued: " << No_of_books_issued << endl;
68     }
69 };
70
71 class Student : public Department,public Library {
72 public:
73     string student_name;
74     string student_class;
75     int student_roll_no;
76
77     void initStudent(string studentName,string studentClass,int rollno)
78     {
79         student_name = studentName;
80         student_class = studentClass;
81         student_roll_no = rollno;
82     }
83
84     void displayStudentDetails()
85     {
86         cout << "\nCollege Name: " << college_name << endl;
87         cout << "Department Name: " << department_name << endl;
88         cout << "Student Name: " << student_name << endl;
89         cout << "Student Class: " << student_class << endl;
90         cout << "Student Roll No." << student_roll_no << endl;
91     }
92 };

```



```
80         student_class = studentClass;
81         student_roll_no = rollno;
82     }
83
84     void displayStudentDetails()
85     {
86         cout << "\nCollege Name: " << college_name << endl;
87         cout << "Department Name: " << department_name << endl;
88         cout << "Student Name: " << student_name << endl;
89         cout << "Student Class: " << student_class << endl;
90         cout << "Student Roll No." << student_roll_no << endl;
91     }
92 };
93
94 int main() {
95     Department dept;
96
97     dept.initCollege("SFIT", "Bro. Shantilal Kujur", "Dr. Sincy George");
98     dept.initDepartment("EXTC", "Dr. Kevin Noronha");
99     dept.displayDetails(dept.getPrincipalName());
100
101     cout << "\nAccessing public attribute directly: " << dept.college_name;
102     cout << "\nAccessing protected attribute directly: " << dept.getDirectorName();
103     cout << "\nAccessing private attribute directly: " << dept.getPrincipalName() << endl;
104
105     Student p1;
106
107     p1.initCollege("SFIT", "Bro. Shantilal Kujur", "Dr. Sincy George");
108     p1.initDepartment("EXTC", "Dr. Kevin Noronha");
109     p1.initStudent("Dev Mistry", "EXTC B", 4);
110     p1.displayStudentDetails();
111
112     Student p2;
113
114     p2.college_name = "SFIT";
115     p2.department_name = "EXTC";
116     p2.initStudent("Dev Mistry", "EXTC B", 4);
117     p2.initLibrary(233047, 5);
118     cout << "\nCollege Name: " << p2.college_name << endl;
119     cout << "Department Name: " << p2.department_name << endl;
120     cout << "Student Name: " << p2.student_name << endl;
121     cout << "Student Roll No.: " << p2.student_roll_no << endl;
122     p2.displayLibraryDetail();
123     return 0;
124 }
125
```

College Name: SFIT
Principal Name: Dr. Sincy George
Director Name: Bro. Shantilal Kujur
Department Name: EXTC
HOD Name: Dr. Kevin Noronha

Accessing public attribute directly: SFIT
Accessing protected attribute directly: Bro. Shantilal Kujur
Accessing private attribute directly: Dr. Sincy George

College Name: SFIT
Department Name: EXTC
Student Name: Dev Mistry
Student Class: EXTC B
Student Roll No.4

College Name: SFIT
Department Name: EXTC
Student Name: Dev Mistry
Student Roll No.: 4
Library Card No.: 233047
No. of books issued: 5

Process returned 0 (0x0) execution time : 0.095 s
Press any key to continue.