

* Experiment - 3

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- 1) Declare a class 'book' containing data members.

```
#include <iostream>
using namespace std;
class book {
    string book_title;
    string author_name;
    int price;
public:
    void accept() {
        cout << "Enter title: " << endl;
        cin >> this-&>book_title;
        cout << "Enter author name: " << endl;
        cin >> this->author_name;
        cout << "Enter price: " << endl;
        cin >> this->price;
    }
    void display() {
        this->accept();
        cout << "The book title: " << this->book_title;
        cout << "The author: " << this->author_name << endl;
        cout << "The price: " << this->price << endl;
    }
};

int main() {
    book b;
    book* p;
    p = &b;
    p->display();
}
```

(2) Demonstrate a class inside a student

3) Demonstrate nested class

include <iostream>
#include <fstream>
#include <iomanip>
using namespace std;

class student {
 int roll_no;
 float per;

public:
 void accept();
 void display();

int roll_no; float per;

void accept() {
 cout << "Enter roll no: ";
 cin >> roll_no;

cout << "Enter percentage: ";
cin >> per;

void display() {
 cout << "The roll no: " << roll_no << endl;

cout << "The name: " << name << endl;

cout << "Marks for M1 & M2: " << m1 << endl;

cout << "Marks for M3 & M4: " << m2 << endl;

cout << "Total marks: " << m1 + m2;

cout << "Average marks: " << (m1 + m2) / 2;

cout << "Percentage: " << (per * 100 / 500);

cout << "Grade: " << grade;

cout << "Result: " << result;

cout << "Remarks: " << remarks;

cout << "Address: " << address;

cout << "Phone number: " << phone;

cout << "Email id: " << email;

cout << "Date of birth: " << dob;

cout << "Gender: " << gender;

cout << "Blood group: " << blood_group;

cout << "Religion: " << religion;

cout << "Nationality: " << nationality;

cout << "State: " << state;

cout << "City: " << city;

cout << "Pin code: " << pin_code;

cout << "State code: " << state_code;

cout << "Country code: " << country_code;

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Experiment 4 -

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- Swap 2 numbers from same using object as function argument.

Ans)

```
#include <iostream>
using namespace std;
class number {
    int value;
public:
    number (int v=0) {
        value = v;
    }
    void swap (number &other) {
        int temp = value;
        value = other.value;
        other.value = temp;
    }
    void disp () {
        cout << "Value:" << value << endl;
    }
};
int main () {
    number n1(10), n2(20);
    cout << "Before Swap:" << endl;
    n1.disp ();
    n2.disp ();
    return 0;
}
```

O/P : Before swap:
Value : 10
Value : 20

After Swap:
Value : 20
Value : 10

2. Swap 2 numbers from same class using friend

```
→ #include <iostream>
using namespace std;
class AB {
    int a,b;
public:
    void print() {
        cout << "Enter 2 numbers: ";
        cin >>> a;
        cin >>> b;
    }
    friend void swap(AB ab);
};

void swap (AB ab) {
    int temp;
    temp = ab.a;
    ab.a = ab.b;
    ab.b = temp;
}

cout << "Values after swapping: " << ab.a << ab.b;
}

int main () {
    AB ab;
    ab.print();
    swap(ab);
}
```

3. Friend function swap 2 numbers different class

```
→ #include <iostream>
using namespace std;
class AB;
class CB {
    int numA;
public:
    void disp() {
        cout << "Value in Class A: " << numA << endl;
    }
};

friend void swap (CB&,CB&);

class CB {
private:
    int numB;
public:
    void disp() {
        cout << "Value in Class B: " << numB << endl;
    }
};

void swap (CB&a,CB&b) {
    int temp = a.numA;
    a.numA = b.numB;
    b.numB = temp;
}

int main () {
    CB a;
    CB b;
    a.disp();
    b.disp();
    swap(a,b);
}
```

