

Practical-1

Aim: WAP to create a class Employee with setter and getter. Which have fields like id, name, role, salary, experience, address, email and contact. Get 5 records.

Program:

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

class Employee
{
    private:
        int emp_id;
        char emp_name[1000];
        char emp_role[100];
        int emp_salary;
        int emp_experience;
        char emp_address[100];
        char emp_email[100];
        char emp_contact[100];

    public:
        void setData()
        {
            cout<<"1) Enter ID : ";
            cout<<"2) Enter Name : ";
            cout<<"3) Enter Role : ";
            cout<<"4) Enter Salary : ";
            cout<<"5) Enter Experience : ";
            cout<<"6) Enter Address : ";
            cout<<"7) Enter Email : ";
            cout<<"8) Enter contact : ";

            cin >> this->emp_id;
            cin >> this->emp_name;
            cin >> this->emp_role;
            cin >> this->emp_salary;
            cin >> this->emp_experience;
            cin >> this->emp_address;
            cin >> this->emp_email;
            cin >> this->emp_contact;
        }
        void getData()
```

```

        {
            cout << "- ID : "<<this->emp_id <<endl
                <<"- Name : "<<this->emp_name <<endl
                <<"- Role : "<<this->emp_role <<endl
                <<"- Salary : "<<this->emp_salary <<endl
                <<"- Experience : "<<this->emp_experience <<endl
                <<"- Address : "<<this->emp_address <<endl
                <<"- Email : "<<this->emp_email <<endl
                <<"- contact : "<<this->emp_contact <<endl;
        }
};

int main()
{
    Employee e[100];
    int i,n;

    cout <<"~ How many Employee : ";
    cin >> n;

    cout << endl<<"----- -: Employee Detail :- -----"<<endl <<endl;
    for(i=0 ; i<n ; i++)
    {
        e[i].setData();
        cout << endl<<"-----"<<endl <<endl;
    }
    cout << endl<<"-----"<<endl <<endl;
    for(i=0 ; i<n ; i++)
    {
        e[i].getData();
        cout << endl<<"-----"<<endl <<endl;
    }
    return 0;
}

```

Output:

```
D:\Mansi Lakhani-Flutter\C++\BIM\1.exe
- ID : 1
- Name : Mahi
- Role : Web_devolper
- Salary : 1500
- Experience : 2
- Address : Malad
- Email : mahi08@gmail.com
- contact : 9756345611
-----

- ID : 2
- Name : Drishti
- Role : Web_designer
- Salary : 10000
- Experience : 1
- Address : Nana_varachha
- Email : druis@gmail.com
- contact : 9757858798
-----

- ID : 3
- Name : Pihu
- Role : Game_developer
- Salary : 15000
- Experience : 1
- Address : Mota_varachha
- Email : phi02@gmail.com
- contact : 8756475751
-----

- ID : 4
- Name : Preeti
- Role : Manager
- Salary : 10000
- Experience : 1
- Address : ABC_circle
- Email : prt019@gmail.com
- contact : 9726354121
-----

- ID : 5
- Name : Shraddha
- Role : Designer
- Salary : 12000
- Experience : 1
- Address : VIP_circle
- Email : shr974@gmail.com
- contact : 9874657681
-----

-----
Process exited after 417.7 seconds with return value 0
Press any key to continue . . .
```

Practical-2

Aim: WAP to create a class which Read and print Class, Student details using Two Classes. (Make two classes, create one classe's obj in another class.)

Program:

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

class Student
{
    private:
        char Stu_First_name[50];
        char Stu_Last_name[50];
        int Stu_age;
        char Stu_gender[100];
        char Email[100];
        char school_name[100];
        int grid;

    public:
        void setData()
        {
            cout <<endl <<"----- -: Student Detail :- -----" <<endl <<endl;
            cout << "~> Enter First Name: ";          cin >> this-> Stu_First_name;
            cout << "~> Enter Last Name: ";           cin >> this-> Stu_Last_name;
            cout << "~> Enter Age: ";                  cin >> this-> Stu_age;
            cout << "~> Enter School Name: ";          cin >> this-> school_name;
            cout << "~> Enter GRID: ";                 cin >> this-> grid;
            cout << "~> Enter Email: ";                cin >> this-> Email;
        }

        void getData()
```

```

        {
            cout << "- First Name: "<<<this->Stu_First_name <<endl
                << "- Last Name: "<<< this->Stu_Last_name <<endl
                << "- Age: "<<< this->Stu_age<<endl
                << "- School Name: "<<<this->school_name <<endl
                << "- GRID: "<<< this->grid <<endl
                << "- Email: "<<< this->Email <<endl ;
        }
};

class Class
{
    Student s;
private:
    int Standard;
    char Section[100];

public:
    void setData()
    {
        cout <<endl <<"----- -: Class Detail :- -----"<<endl <<endl;

        cout << "~> Enter Standard : ";        cin >> this->Standard;
        cout << "~> Enter Section : ";          cin >> this->Section;
        s.setData();
    }
    void getData()
    {
        cout << "- Standard: "<<<this->Standard <<endl
            << "- Section: "<<<this->Section <<endl;
        s.getData();
    }
};

int main()
{
    Class c[100];

```

```

int i,n;

cout << "~ How many student : ";
cin >> n;

for(i=0 ; i<n ; i++)
{
    c[i].setData();
    cout <<endl <<"-----"<<endl <<endl;
}

cout <<endl <<"-----"<<endl <<endl;
for(i=0 ; i<n ; i++)
{
    c[i].getData();
    cout <<endl <<"-----"<<endl <<endl;
}
return 0;
}

```

Output:

```
D:\Mansi Lakhani-Flutter\C++\B\M2.exe
~ How many student : 2

----- -: Class Detail :- -----
~> Enter Standard : 12
~> Enter Section : A

----- -: Student Detail :- -----
~> Enter First Name: Drishti
~> Enter Last Name: Patel
~> Enter Age: 18
~> Enter School Name: Gajera_Vidhyabhavan
~> Enter GRID: 32
~> Enter Email: drst98@gmail.com

----- -: Class Detail :- -----
~> Enter Standard : 12
~> Enter Section : B

----- -: Student Detail :- -----
~> Enter First Name: Mahi
~> Enter Last Name: Patel
~> Enter Age: 18
~> Enter School Name: Gajera_Vidhyabhavan
~> Enter GRID: 59
~> Enter Email: mhi07@gmail.com

-----

- Standard: 12
- Section: A
- First Name: Drishti
- Last Name: Patel
- Age: 18
- School Name: Gajera_Vidhyabhavan
- GRID: 32
- Email: drst98@gmail.com

-----

- Standard: 12
- Section: B
- First Name: Mahi
- Last Name: Patel
- Age: 18
- School Name: Gajera_Vidhyabhavan
- GRID: 59
- Email: mhi07@gmail.com

-----
```

Practical-3

Aim: WAP to create a class Hotel with fields like id, name, type, staff_size, room_size, establish_year, address, rating_type and website. Illustrate the use of encapsulation (strict encapsulation) with this keyword.

Program:

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

class Hotel
{
    private:
        int hotel_id;
        char hotel_name[100];
        char hotel_type[100];
        int hotel_staff_size;
        int hotel_room_size;
        int hotel_established_year;
        char hotel_address[100];
        char hotel_rating_type[100];
        char hotel_website[100];

    public:
        void setData()
        {
            cout << "1) Enter ID: ";          cin >> this->hotel_id;
            cout << "2) Enter Name: ";        cin >> this->hotel_name;
            cout << "3) Enter Type: ";        cin >> this->hotel_type;
            cout << "4) Enter Staff size: ";   cin >> this->hotel_staff_size;
            cout << "5) Enter Room size: ";    cin >> this->hotel_room_size;
            cout << "6) Enter Established year: "; cin >> this->hotel_established_year;
```



```

        cout << "7) Enter Rating type: ";        cin >> this->hotel_rating_type;
        cout << "7) Enter Website: ";        cin >> this->hotel_website;
    }

    void getData()
    {
        cout << "- ID: "<<this->hotel_id <<endl
        << "- Name: "<<this->hotel_name <<endl
        << "- Type: "<<this->hotel_type <<endl
        << "- Staff size: "<<this->hotel_staff_size <<endl
        << "- Room size: "<<this->hotel_room_size <<endl
        << "- Established year: "<<this->hotel_established_year <<endl
        << "- Rating type : "<<this->hotel_rating_type <<endl
        << "- Website: "<<this->hotel_website <<endl;
    }
};

int main()
{
    Hotel h[100];
    int i,n;

    cout << "~ How many Hotel : ";
    cin >> n;

    cout <<endl<< "----- -: Hotel Detail :- -----" <<endl <<endl;

    for(i=0 ; i<n ; i++)
    {
        h[i].setData();
        cout << "-----" <<endl <<endl;
    }
    for(i=0 ; i<n ; i++)
    {
        h[i].getData();
        cout << "-----" <<endl <<endl;
    }
    return 0;
}

```

Output:

```
D:\Mansi Lakhani-Flutter\C++\B\IM3.exe
How many Hotel : 2

----- -: Hotel Detail :- -----
1) Enter ID: 1
2) Enter Name: The_Grand_Bhagwati
3) Enter Type: LuxuryHotel_&_Resort
4) Enter Staff size: 2000
5) Enter Room size: 6000
6) Enter Established year: 2014
7) Enter Rating type: 5-star
7) Enter Website: www.tgb.com
-----

1) Enter ID: 2
2) Enter Name: The_Taj
3) Enter Type: Luxury_Hotel
4) Enter Staff size: 1000
5) Enter Room size: 2500
6) Enter Established year: 2017
7) Enter Rating type: 4-star
7) Enter Website: www.taj.com
-----

- ID: 1
- Name: The_Grand_Bhagwati
- Type: LuxuryHotel_&_Resort
- Staff size: 2000
- Room size: 6000
- Established year: 2014
- Rating type : 5-star
- Website: www.tgb.com
-----

- ID: 2
- Name: The_Taj
- Type: Luxury_Hotel
- Staff size: 1000
- Room size: 2500
- Established year: 2017
- Rating type : 4-star
- Website: www.taj.com
-----

Process exited after 168.9 seconds with return value 0
Press any key to continue . . .
```

Practical-4

Aim: WAP to create two class HighSchool and College with fields like id, stu_name, stu_roll_no, stu_standard, stu_age, stu_contact, stu_edu_institute_name and stu_address. Make suitable setter and getter with use of static data members.

Program:

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

class HighSchool
{
    private:
        int id;
        char stu_name[100];
        int stu_roll_no;
        int stu_std;
        int stu_age;
        char stu_contact[100];
        char stu_address[100];
        static char stu_edu_school_name[100];

    public:

        void setData()
        {
            cout<<endl<<"----- -: High School Student Detail
:-----"<<endl <<endl;
            cout << "~> Enter ID : "; cin >>this-> id;
            cout << "~> Enter Name : "; cin >>this-> stu_name;
            cout << "~> Enter Roll no : "; cin >>this-> stu_roll_no;
```

```

        cout << "~> Enter Standard : "; cin >>this-> stu_std;
        cout << "~> Enter Age : "; cin >>this-> stu_age;
        cout << "~> Enter Contact : "; cin >>this-> stu_contact;
        cout << "~> Enter Address : "; cin >>this-> stu_address;
    }

    void getData()
    {
        cout <<endl<<"----- -: High School Student Detail
:-----" <<endl <<endl;
        cout << "- ID : "<<this->id <<endl
            << "- Name: "<<this->stu_name <<endl
            << "- Roll no : "<<this->stu_roll_no <<endl
            << "- Standard: "<<this->stu_std <<endl
            << "- Age: "<<this->stu_age <<endl
            << "- Contact: "<<this->stu_contact <<endl
            << "- Address : "<<this->stu_address <<endl
            << "- High school name : "<<this->stu_edu_school_name
<<endl;
    }
};

class College
{
    private:
        int id;
        char stu_name[100];
        int stu_roll_no;
        char stu_std[100];
        int stu_age;
        char stu_contact[100];
        char stu_address[100];
        static char stu_edu_institute_name[100];

    public:

        void setData()
        {
            cout <<endl<<"----- -: College Student Detail :-----" <<endl
<<endl;

```

```

        cout << "~> Enter ID : "; cin >> this-> id;
        cout << "~> Enter Name : "; cin >> this-> stu_name;
        cout << "~> Enter Roll no : "; cin >> this-> stu_roll_no;
        cout << "~> Enter Standard : "; cin >> this-> stu_std;
        cout << "~> Enter Age : "; cin >> this-> stu_age;
        cout << "~> Enter Contact : "; cin >> this-> stu_contact;
        cout << "~> Enter Address : "; cin >> this-> stu_address;
    }

    void getData()
    {
        cout << endl << "----- -: College Student Detail :-----" << endl
<< endl;

        cout << "- ID : " << this-> id << endl
            << "- Name: " << this-> stu_name << endl
            << "- Roll no : " << this-> stu_roll_no << endl
            << "- Standard: " << this-> stu_std << endl
            << "- Age: " << this-> stu_age << endl
            << "- Contact: " << this-> stu_contact << endl
            << "- Address : " << this-> stu_address << endl
            << "- College name : " << this-> stu_edu_institute_name
<< endl;

    }

};

char HighSchool :: stu_edu_school_name[100] = "Gajera Vidhyabhavan";
char College :: stu_edu_institute_name[100] = "Bhagwan Mahavir University";

int main()
{
    HighSchool h[100];
    College c[100];

    int i,n;

    cout << "=> How many object: ";
    cin >> n;
    cout << endl;

    for(i=0 ; i<n ; i++)

```

```
{
    h[i].setData();
    c[i].setData();
    cout <<endl<<"-----"<<endl <<endl;
}
for(i=0 ; i<n ; i++)
{
    h[i].getData();
    c[i].getData();
    cout <<endl<<"-----"<<endl <<endl;
}
return 0;
}
```

Output:

```
D:\Mansi Lakhani-Flutter\C++\4.exe
----- -: High School Student Detail :-----
- ID : 1
- Name: Mahi
- Roll no : 12
- Standard: 12
- Age: 18
- Contact: 9875758681
- Address : A.k.road
- High school name : Gajera Vidhyabhavan
----- -: College Student Detail :-----
- ID : 2
- Name: Drishti
- Roll no : 112
- Standard: BCA
- Age: 19
- Contact: 9876747575
- Address : s.k.road
- College name : Bhagwan Mahavir Unversity
----- -: High School Student Detail :-----
- ID : 3
- Name: Pihu
- Roll no : 14
- Standard: 12
- Age: 18
- Contact: 9876524312
- Address : Vip.circle
- High school name : Gajera Vidhyabhavan
----- -: College Student Detail :-----
- ID : 5
- Name: Mishti
- Roll no : 23
- Standard: Bcom
- Age: 20
- Contact: 9857578681
- Address : Vedroad
- College name : Bhagwan Mahavir Unversity
-----
Process exited after 158.4 seconds with return value 0
Press any key to continue . . .
```

Practical-5

Aim: WAP to create a class which have both static data member and static member function. That class gives details of all states in India.

Program:

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

class Stateofindia
{
    private:
        static char india[100][100];

    public:
        static void getData()
        {
            int i,j;
            for(i=0;i<29;i++)
            {
                for(j=0; india[i][j]!='\0' ;j++)
                {
                    cout << india[i][j];
                }
                cout << endl;
            }
        }
};

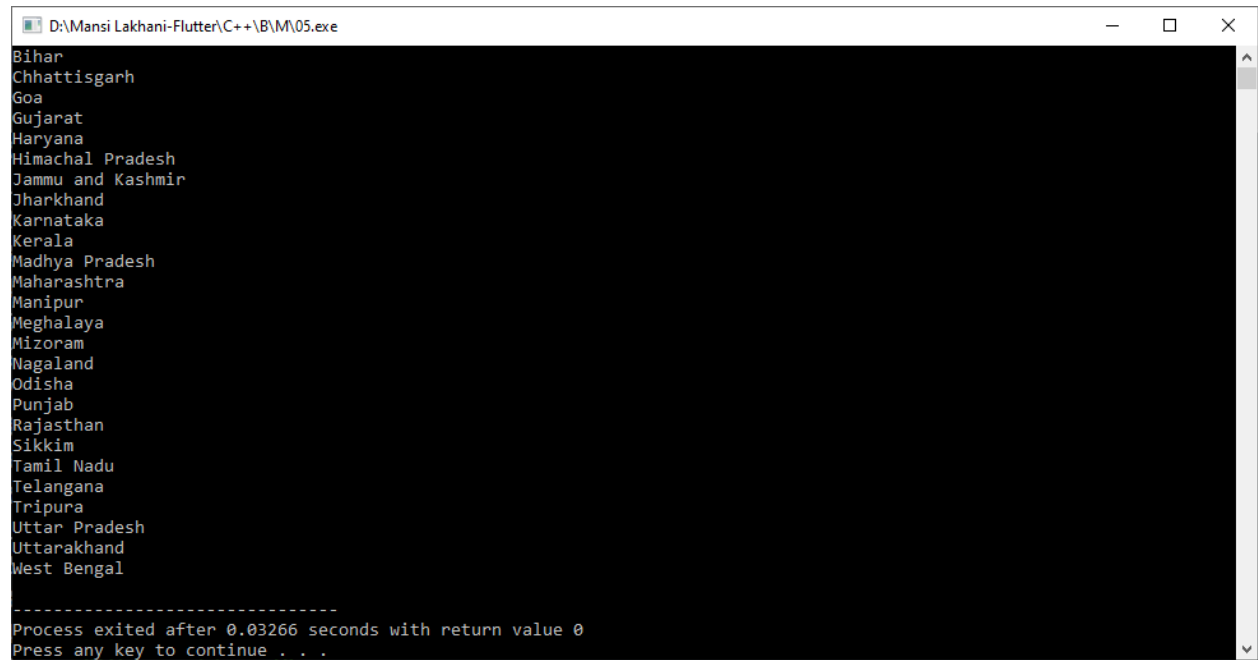
char Stateofindia :: india[100][100] =
{
    "Andhra Pradesh",
    "Arunachal Pradesh",
```



```
"Assam",  
"Bihar",  
"Chhattisgarh",  
"Goa",  
"Gujarat",  
"Haryana",  
"Himachal Pradesh",  
"Jammu and Kashmir",  
"Jharkhand",  
"Karnataka",  
"Kerala",  
"Madhya Pradesh",  
"Maharashtra",  
"Manipur",  
"Meghalaya",  
"Mizoram",  
"Nagaland",  
"Odisha",  
"Punjab",  
"Rajasthan",  
"Sikkim",  
"Tamil Nadu",  
"Telangana",  
"Tripura",  
"Uttar Pradesh",  
"Uttarakhand",  
"West Bengal"  
};
```

```
int main()  
{  
    Stateofindia :: getData();  
    return 0;  
}
```

Output:



```
D:\Mansi Lakhani-Flutter\C++\B\M\05.exe
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
Jharkhand
Karnataka
Kerala
Madhya Pradesh
Maharashtra
Manipur
Meghalaya
Mizoram
Nagaland
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
-----
Process exited after 0.03266 seconds with return value 0
Press any key to continue . . .
```