

1. Given that an EMPLOYEE class contains following members: Employee Number, Employee Name, Basic, DA, IT, Net Salary. Member functions: to read the data, to calculate Net Salary and to print data members. Write a C++ program to read the data of N employees and compute Net Salary of each employee. (Dearness Allowance (DA) = 52% of Basic and Income Tax (IT) = 30% of the gross salary. Net Salary = Basic + DA - IT).

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
class employee
```

```
{
```

```
    private:
```

```
        string name;
```

```
        int number;
```

```
        float basicSalary, netSalary;
```

```
    public:
```

```
        void inputDetails();
```

```
        void calculateNetSalary();
```

```
        void displayDetails();
```

```
};
```

```
void employee::inputDetails()
```

```
{
```

```
    cout<<"Employee Name : ";
```

```
    cin>>name;
```

```
    cout<<"Employee Number : ";
```

```
    cin>>number;
```

```
    cout<<"Basic Salary : ";
```

```
    cin>>basicSalary;
```

```
    cout<<endl;
```

```
}
```

```

void employee::calculateNetSalary()
{
    float dearnessAllowance,grossSalary,incomeTax;//no need to display these, these are
    needed only to calculate,so not declaring in private but here

    dearnessAllowance=(basicSalary*52)/100;
    grossSalary=basicSalary+dearnessAllowance;
    incomeTax=(grossSalary*30)/100;
    netSalary=basicSalary+dearnessAllowance-incomeTax;
}

```

```

void employee::displayDetails()
{
    cout<<"Employee Name : "<<name<<endl;
    cout<<"Employee Number : "<<number<<endl;
    cout<<"Basic Salary : "<<basicSalary<<endl;
    cout<<"Net Salary : "<<netSalary<<endl<<endl;
}

```

```

int main()
{
    int n;
    cout<<"Input number of employees : ";
    cin>>n;
    employee e[n];
    for(int i=0;i<n;++i)
    {
        cout<<"Input Employee "<<i+1<<" details : "<<endl;
        e[i].inputDetails();
        e[i].calculateNetSalary();
        cout<<"Employee "<<i+1<<" Details are : "<<endl;
    }
}

```

```

        e[i].displayDetails();
    }

    return 0;
}

```

```

deven@deven-VirtualBox: ~/C++Lab/asn2,30-9
deven@deven-VirtualBox: ~/Data_Structures
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ ls
a.out  employee.cpp  marksAvg.cpp
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ gedit employee.cpp
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ g++ employee.cpp
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ ./a.out
Input number of employees : 2
Input Employee 1 details :
Employee Name : Dev
Employee Number : 123
Basic Salary : 10000
Employee 1 Details are :
Employee Name : Dev
Employee Number : 123
Basic Salary : 10000
Net Salary : 10640
Input Employee 2 details :
Employee Name : DEv2
Employee Number : 3456
Basic Salary : 400000
Employee 2 Details are :
Employee Name : DEv2
Employee Number : 3456
Basic Salary : 400000
Net Salary : 425600
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$

```

2. Write a C++ program to Create array of objects of class student with data members for storing his USN marks of six subjects for three tests and member functions to input display and calculate the avg marks for each subject taking best two of three subjects. Write a tester program to test these classes.

```
#include <iostream>
```

```
using namespace std;
```

```
class student
```

```
{
```

```
    private:
```

```
        string name;
```

```
        string USN;
```

```
        int marks[3][6];
```

```
        float avgMarks[6];
```

```
    public:
```

```
        void inputDetails();
```

```
        void calculateAvgMarks();
```

```
        void outputDetails();
```

```
};
```

```
void student::inputDetails()
```

```
{
```

```
    cout<<"Name : ";
```

```
    cin>>name;
```

```
    cout<<"USN : ";
```

```
    cin>>USN;
```

```
    for(int i=0;i<3;++i)
```

```
    {
```

```
        cout<<"Enter test "<<i+1<<" marks of 6 subjects in order: ";
```

```
        for(int j=0;j<6;++j)
```

```
            cin>>marks[i][j];
```

```
    }
```

```
}
```

```
void student::outputDetails()
```

```
{
```

```

        cout<<"Name : "<<name<<endl;
        cout<<"USN : "<<USN<<endl;
        cout<<"Average Marks : ";
        for(int j=0;j<6;++j)
            cout<<avgMarks[j]<<" ";
        cout<<endl;
    }

void student::calculateAvgMarks()
{
    int subMarks1,subMarks2;
    for(int i=0;i<6;++i)
    {
        if(marks[0][i]>=marks[1][i])
        {
            subMarks1=marks[0][i];
            if(marks[2][i]>=marks[1][i])
                subMarks2=marks[2][i];
            else
                subMarks2=marks[1][i];
        }
        else
        {
            subMarks1=marks[1][i];
            if(marks[2][i]>=marks[0][i])
                subMarks2=marks[2][i];
            else
                subMarks2=marks[0][i];
        }
        avgMarks[i]=static_cast<float>(subMarks1+subMarks2)/2;//*****
    }
}

```

```
}
```

```
int main()
```

```
{
```

```
    int n;
```

```
    cout<<"Enter number of students : ";
```

```
    cin>>n;
```

```
    student s[n];
```

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

```
    {
```

```
        cout<<"Enter the details of student "<<i+1<<endl;
```

```
        s[i].inputDetails();
```

```
        s[i].calculateAvgMarks();
```

```
        s[i].outputDetails();
```

```
    }
```

```
    return 0;
```

```
}
```

```
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ ls
a.out employee.cpp marksAvg.cpp output
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ g++ marksAvg.cpp
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$ ./a.out
Enter number of students : 2
Enter the details of student 1
Name : dev
USN : 123
Enter test 1 marks of 6 subjects in order: 6 6 6 6 6 6
Enter test 2 marks of 6 subjects in order: 7 7 7 7 7 7
Enter test 3 marks of 6 subjects in order: 9 9 9 9 9 9
Name : dev
USN : 123
Average Marks : 8 8 8 8 8 8
Enter the details of student 2
Name : dev2
USN : 234
Enter test 1 marks of 6 subjects in order: 9 9 9 6 6 6
Enter test 2 marks of 6 subjects in order: 7 7 7 7 7 7
Enter test 3 marks of 6 subjects in order: 6 6 6 9 9 9
Name : dev2
USN : 234
Average Marks : 8 8 8 8 8 8
deven@deven-VirtualBox: ~/C++Lab/asn2,30-9$
```