



[Assignment: 2]

Employee Management Application

[Object Oriented Programming (OOP) using (C++)]

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Application Description:

To construct application using (C++ OOP), it was divided to subproblems (Classes) to create it alone such as Employee, (Staff Member), (Project), (Budget), (department) and (staff).

for each employee there are different data connected with the type of employee. the Staff Problem which has the ability to deal with all employees Who want to enroll the application and save them data. The staff class contain the main feathers of system like adding, editing, search, deleting or show all employees saved data.

There are other subproblems like (department) class and (create project) class.

The department class can add each employee to his department. While the Create project class is responsible for handling projects which are created by company.

Data Structures Used:

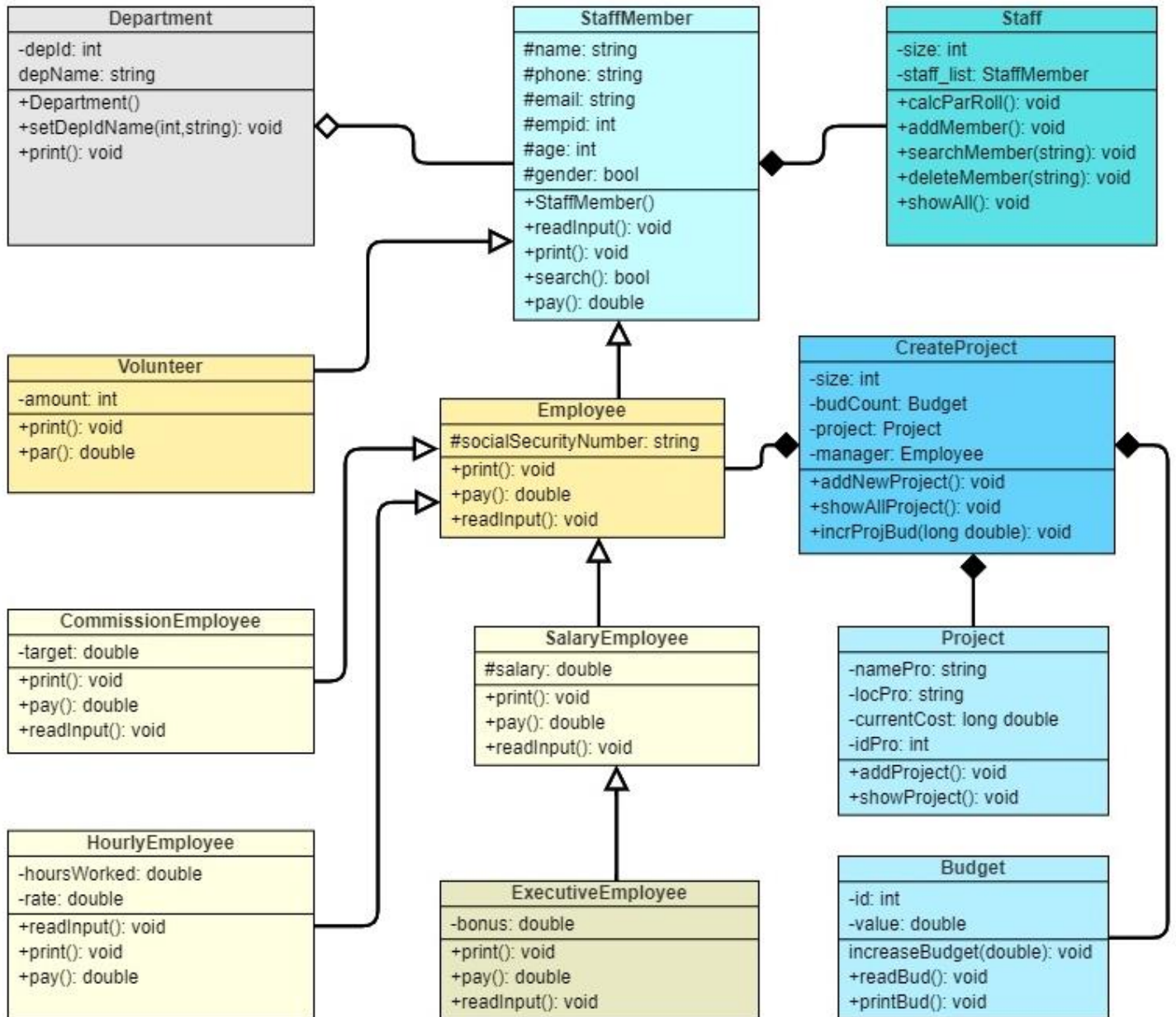
Arrays:

Arrays has a variety of datatypes like built in datatypes (char, int, string.... etc.) and other are user defined data types (staff member, employee, project and other).

These data were collected to provide the best solution for collecting data together to be easily reached and used.

To give the best performance and save the memory we choose dynamic array to be used due to its performance and because it can fit automatically after insert or deleting objects or data from the array.

UML Class Diagram



Description for Classes and Functions Used:

Staff Member class

This class contain the main information foreach different type of employees (volunteer, salary, hourly, commission and executive employee) like name, id, phone, email, age, gender.... etc. from this class, there are some inherited classes which add more data to type of employees.

Department class

department class has the ability to add new department or print all departments and adding employees to their departments

Employee class

This inherited from staff member class and add the social security number to all employees except volunteers.

Volunteer class

Volunteer class add the amount of work to each volunteer only.

Salary, Hourly, Commission, Executive classes

These classes have the same data adding to the salary to each different type of employees.

Staff class

Staff class take an array of staff member class information and can access on it by adding or deleting or search for any employee. It also can print all employee's data and calculate the total payroll.

Project class

This class contain the main information foreach project like the project number(id), project location, project name and other info.

Budget class

Budget class contain the total budget for every project created and you can increase int by using the method (increase Budget).

Create Project

It takes an array of employees and array of project and array of budgets with the same index to add the project details which are manager from employees and project data from project class and the total budget from budget class.

Samples Output from Console Screen:

The Welcome Screen

```
-----
* WELCOME TO EMPLOYEE MANAGMENT SYSTEM *
=====
Press any key to continue . . . _
```

Figure no: 1

Department Menu

```
Department Menue
=====
[1] Add New Department
[2] Show All Departments
[0] Quit
=====
Enter your choice: _
```

Figure no: 3

User Interface

```
D:\test_coy\x64\Debug\test.exe

EMPLOYEE MANAGEMENT SYSTEM

MAIN MENU
=====
[1] Department
[2] Staff
[3] Project
[0] Quit
=====
Enter your choice: _
```

Figure no: 2

Add New Department

```
D:\test_coy\x64\Debug\test.exe

Enter Department Name: IT

Would You Lke To Add Another Department: (y/n)? y
```

Figure no: 4

Show All Departments

```
D:\test_coy\x64\Debug\test.exe

Department Id: 1001 | Department Name: IT
-----
Department Id: 1002 | Department Name: HR
-----
Department Id: 1003 | Department Name: PR
-----
3 Departments Founded

[1] Main Menu      [2] Nested Menu      [0] Exit
...:Enter the Choice: _
```

Figure no: 6

Add Another Department

```
D:\test_coy\x64\Debug\test.exe

Enter Department Name: PR

Would You Lke To Add Another Department: (y/n)? N

[1] Main Menu      [2] Nested Menu      [0] Exit
...:Enter the Choice: _
```

Figure no: 5

Staff Menu

```

Staff Menue
=====
[1] Add New Meber
[2] Search Meber
[3] delete Meber
[4] Show All Mebers
[5] CalcPyRoll
[0] Quit
=====
Enter your choice: _

```

Figure no: 7

Member Type

```

.:Enter Member Type:
[1] Volunteer
[2] Salarid Employee
[3] Hourly Employee
[4] Commission Employee
[5] Executive Employee!!
Enter Your Choice: 5

```

Figure no: 8

Add New Executive Member

```

D:\test_coy\x64\Debug\test.exe
Enter Executive Member details::

First Name: Sherif
Last Name: Muhammad
Age: 19
Enter '0' For Male And '1' For Female: 0
Enter Your Phone Number: 01095000000
Enter Your Email: sherif96@aaaaaaaaaaaaa
Enter Your Social Security Number: 2218
Enter Your Slary: 10000
Enter Bounus: 5000

-----
Department Id: 1001      | Department Name: IT
Department Id: 1002      | Department Name: HR
Department Id: 1003      | Department Name: PR
-----

Enter Department Id: 1001

[1] Main Menue           [2] Nested Menu           [0] Exit
.:Enter the Choice:2_

```

Figure no: 9

Search For Employees

```
D:\test_coy\x64\Debug\test.exe

.: Enter Name Or Phone To Find: sherif

Id: 1   Name: Sherif Muhammad      Age: 19      Gender: Male
        Phone: 01095000000         Email: sherif96@@@@@@@@@@@@
        Department: IT
.: Social Security Number is: 2218
.: Your Pay is: 15000
-----
1 Founded

[1] Main Menue      [2] Nested Menu      [0] Exit
...:Enter the Choice:
```

Figure no: 10

Show All Employees

```
D:\test_coy\x64\Debug\test.exe

...: List Of Employees:
=====

Id: 1   Name: aaa bbb              Age: 88      Gender: Female
        Phone: 11111              Email: @@@@@@@@@@@@@@
        Department: HR
.: Your Pay Roll is: 0
-----

Id: 2   Name: ccc ddd              Age: 55      Gender: Male
        Phone: 5555555555         Email: @@@@@@@@@@@@@@
        Department: PR
.: Social Security Number is: 222
.: Your Pay Roll Is: 100000
-----

Id: 3   Name: fff ggg              Age: 99      Gender: Female
        Phone: 222222             Email: @@@@@@@@@@
        Department: IT
.: Social Security Number is: 1111
.: Your Pay Roll is: 1056
-----

Id: 4   Name: mmm llll             Age: 55      Gender: Male
        Phone: 44444              Email: @@@@@@@@@@@@@@@@@@
        Department: HR
.: Social Security Number is: 3333
.: Your Payment Is: 150
-----

Id: 5   Name: sherif Muhammad      Age: 19      Gender: Male
        Phone: 01095000000         Email: sherif96@@@@@@@@@@@@
        Department: IT
.: Social Security Number is: 2218
.: Your Pay is: 15000
-----

[1] Main Menue      [2] Nested Menu      [0] Exit
...:Enter the Choice:_
```

Figure no: 11

Delete An Employee

```
D:\test_coy\x64\Debug\test.exe
.:: Enter Name Or Phone To delete: sherif
Member Deleted Successfully..:)

[1] Main Menue          [2] Nested Menu          [0] Exit
.:::Enter the Choice:
```

Figure no: 12

Show All Employees After Deleting 2 Employees

```
D:\test_coy\x64\Debug\test.exe

.:: List Of Employees:
=====

Id: 4   Name: mmm llll           Age: 55           Gender: Male
      Phone: 44444             Email: @@@@@@@@@@@@@@@@@@
      Department: HR
.:. Social Security Number is: 3333
.:. Your Payment Is: 150
-----

Id: 2   Name: ccc ddd           Age: 55           Gender: Male
      Phone: 5555555555        Email: @@@@@@@@@@@@@@@@@@
      Department: PR
.:. Social Security Number is: 222
.:. Your Pay Roll Is: 100000
-----

Id: 3   Name: fff ggg           Age: 99           Gender: Female
      Phone: 222222           Email: @@@@@@@@@@
      Department: IT
.:. Social Security Number is: 1111
.:. Your Pay Roll is: 1056
-----

[1] Main Menue          [2] Nested Menu          [0] Exit
.:::Enter the Choice:
```

Figure no: 13

Calculate Payroll

```
D:\test_coy\x64\Debug\test.exe

Employee Total PayRoll.....:
Total PayRoll = 101064

[1] Main Menue          [2] Nested Menu          [0] Exit
...:Enter the Choice:
```

Figure no: 14

Project Menu

```
D:\test_coy\x64\Debug\test.exe

Project Menu
=====
[1] Add New Project
[2] Show All Projects
[3] Incresse Project Budget Value
[0] Quite
=====
Enter Choice: 1_
```

Figure no: 15

Add New Project

```
D:\test_coy\x64\Debug\test.exe
>> Enter Project Name: pppp
>> Enter Project Location: zagazig
>> Enter The Current Cost Which Company has: 100000
>> Enter Budget: 10000
>> Would You Like To Increase Project Budget: (y/n)y
>> Enter Increment: 5000
>> Enter Manager Details:
First Name: Ahmed
Last Name: Muhammad
Age: 22
Enter '0' For Male And '1' For Female: 0
Enter Your Phone Number: 01111111
Enter Your Email: s@@@
Enter Your Social Security Number: 8899

[1] Main Menue          [2] Nested Menu          [0] Exit
...:Enter the Choice:
```

Figure no: 16

Show Project

```
D:\test_coy\x64\Debug\test.exe
*> Project Id: 1
*> Project Name: pppp
*> Project Location: agazig
*> The Capital Of Company: 100000
-----
**> The Budget Value is: 24000
-----
*> Manager Details Are:

Id: 1   Name: Ahmed Muhammad   Age: 22   Gender: Male
      Phone: 01111111   Email: s@@@
      Department: No Department Added
..: Social Security Number is: 8899
=====

[1] Main Menue          [2] Nested Menu          [0] Exit
...:Enter the Choice:_
```

Figure no: 17

Increase Project Budget

```
C:\> D:\test_coy\x64\Debug\test.exe
Enter Project Id: 1
>> Enter Budget Increment: 9000
[1] Main Menue          [2] Nested Menu          [0] Exit
...:Enter the Choice:
```

Figure no: 18

Show Project After Increasing Budget

```
C:\> D:\test_coy\x64\Debug\test.exe
*> Project Id: 1
*> Project Name: pppp
*> Project Location: agazig
*> The Capital Of Companey: 100000
-----
**> The Budget Value is: 15000
-----
*> Manager Details Are:
Id: 1   Name: Ahmed Muhammad   Age: 22   Gender: Male
      Phone: 01111111   Email: s@@@
      Department: No Department Added
..: Social Security Number is: 8899
=====
[1] Main Menue          [2] Nested Menu          [0] Exit
...:Enter the Choice:_
```

Figure no: 19

Exit Screen

THANK YOU FOR YOUR REGISTRATION.

Figure no: 20

Copy Of C++ Code:

Main Source Code:

__source.cpp__

```
#include<iostream>
#include"Staff.h"
#include"CreateProject.h"
#include<Windows.h>
#include"department.h"
using namespace std;
Staff staff(50); department* dep = new department[100]; CreateProject proj(50);
auto depart_counter = 0; auto c = -1; auto scc = -1;
int remain() {
    int opt;
    cout << "\n[1] Main Menu\t\t[2] Nested Menu\t\t[0] Exit\n"
    << "...:Enter the Choice:";
    cin >> opt;
    if (opt == 0) {
        system("cls");
        cout << "\n\n\n\t\t\tTHANK YOU FOR YOUR REGISTRATION." << endl;
        return 1;
    }
    else if (opt == 1)
        return -1;
}
void department_handle() {
    int choice = -1;
    int id = 1000; int count = 0;
    char ch = 'y';
    string name;
    while (choice != 0) {
        system("cls");
        cout << "\n\n Department Menu";
        cout << "\n===== \n" << "[1] Add New Department\n"
        << "[2] Show All Departments\n"
        << "[0] Quit\n" << "\n===== \n" << "Enter your choice: ";
        cin >> choice;
        if (choice == 0) break;
        else if (choice == 1) {
            do {system("cls");
                cout << "\n Enter Department Name: "; cin >> name;
                dep[count++].setDepIdName(++id, name);depart_counter++;
                cout << "\n Would You Lke To Add Another Department: (y/n)? "; cin >> ch;
            } while (ch == 'y' || ch == 'Y');
            int opt;
            cout << "\n[1] Main Menu\t\t[2] Nested Menu\t\t[0] Exit\n"
            << "...:Enter the Choice:";
            cin >> opt;
            switch (opt)
            {
                case 1 || 0; return;
                case 2: break;
                default:
                    break;
            }
        }
    }
}
```

```

else if (choice == 2) {
    system("cls"); cout << endl;
    for (size_t i = 0; i < count; i++)
    {
        dep[i].print();
        cout << "-----\n";
    }
    if (depart_counter == 0) cout << "\n No Department Found...!!):\n";
    else cout << depart_counter << " Departments Founded\n";
    int opt;
    cout << "\n[1] Main Menu\t\t[2] Nested Menu\t\t[0] Exit\n"
        << "...:Enter the Choice:"; cin >> opt;
    switch (opt)
    {
        case 1 || 0: return;
        case 2: break;
        default: break;
    }
}
else {
    cout << " Invalid Chioce!!";
    Sleep(3000);
}
}

int main() {
    system("cls");
    system("Color 0B");
    cout << "\n\n\n\n\n\n\n\n\n\n\n\n\n\t\t\t\t\t -----"
        << "\n\n\t\t\t\t\t\t\t\t\t * WELCOME TO EMPLOYEE MANAGMENT SYSTEM *"
        << "\n\n\t\t\t\t\t\t\t\t\t =====\n"; cout <<
"\n\t\t\t\t\t\t\t "; system("pause");
    while (c != 0) {
        system("cls"); system("Color 0B");
        cout << "\n EMPLOYEE MANAGEMENT SYSTEM"; cout << "\n\n MAIN MENU";
        cout << "\n===== \n";
        cout << "[1] Department\n" << "[2] Staff\n" << "[3] Project\n" << "[0] Quit\n";
        cout << "\n===== \n";
        cout << "Enter your choice: "; cin >> c; system("cls");
        switch (c) {
            case 1:
                department_handle();
                break;

case 2:
                while (scc != 0) {
                    system("cls"); cout << "\n\n Staff Menue";
                    cout << "\n===== \n" << "[1] Add New Meber\n"
                        << "[2] Search Meber\n" << "[3] delete Meber\n"
                        << "[4] Show All Mebers\n" << "[5] CalcPyRoll\n"
                        << "[0] Quit\n" << "\n===== \n"
                        << "Enter your choice: "; cin >> scc; system("cls");
                    if (scc == 1) {
                        staff.AddNewMember(dep, depart_counter);
                        int rem = remain(); if (rem == 1) exit(0);
                        else if (rem == -1)
                            break;
                    }
                }

```

```

        else if (scc == 4) {
            staff.printAllMebers();
            int rem = remain();
            if (rem == 1) exit(0); else if (rem == -1) break;
        }
        else if (scc == 2) {
            staff.SearchMember();
            int rem = remain();
            if (rem == 1) exit(0); else if (rem == -1) break;
        }
        else if (scc == 3) {
            staff.deleteMember();
            int rem = remain();
            if (rem == 1) exit(0);
            else if (rem == -1) break;
        }
        else if (scc == 5) {
            system("cls");
            staff.calcPayRoll();
            int rem = remain();
            if (rem == 1) exit(0);
            else if (rem == -1) break;
        }
    }
    break;

```

case 3:

```

while (scc != 0) {
    system("cls");
    cout << "\n Project Menue";
    cout << "\n===== \n";
    cout << "[1] Add New Project \n" << "[2] Show All Projects \n"
        << "[3] Incresse Project Budget Value \n" << "[0] Quite \n";
    cout << "\n===== \n";
    cout << "Enter Choice: "; cin >> scc;
    if (scc == 1) { system("cls");
        proj.addNewProject();
        int rem = remain(); if (rem == 1) exit(0); else if (rem == -1) break; }
    else if (scc == 2) { system("cls");
        proj.showAllProject();
        int rem = remain(); if (rem == 1) exit(0); else if (rem == -1) break; }
    else if (scc == 3) {system("cls");int _id;
        cout << " Enter Project Id: "; cin >> _id;
        proj.incrProjBud(_id); int rem = remain(); if (rem == 1) exit(0);
        else if (rem == -1) break;
    }
}
break;
default:
    cout << " \n\n\n\tInvalid Chioce!!\n\tWait for seconds And Enroll Again\n";
    Sleep(3000);
    break;
}
}
system("cls");
cout << "\n\n\n\t\t\tThank you." << endl << endl;
exit(0);
return 0;
}

```

Department Source Code: __Department.h__

```
#pragma once
#include<string>
using namespace std;
class department{
    int depId;string depName;
public:
    department();void setDepIdName(int, string);
    string getName() const;void print() const;;
```

Department Source Code: __Department.cpp__

```
#include "department.h"
#include<iostream>
department::department():depId(0),depName("No Department Added") {}
void department::setDepIdName(int id, string name) { depId = id; depName = name;}
string department::getName() const {return depName;}
void department::print() const{
    cout << " Department Id: " << depId << "\t| Department Name: "
        << depName << endl;}
```

Staff Source Code: __Staff.h__

```
#pragma once
#include"StaffMember.h"
#include"department.h"
class Staff{
    int size; int count_total;
    StaffMember** staff_listt;
public:
    Staff(int); ~Staff();
    void AddNewMember(department*,int);
    void SearchMember();void deleteMember();
    void printAllMebers();void calcPayRoll();
};
```

Staff Source Code: __Staff.cpp__

```
#include "Staff.h"
#include"StaffMember.h"
#include"Commission.h"
#include"S_Employee.h"
#include"Executive.h"
#include"H_Employee.h"
#include"Volunteer.h"
#include<iostream>
using namespace std;
Staff::Staff(int count) :count_total(0) { size = count; staff_listt = new
    StaffMember*[size];}
Staff::~Staff(){
    for (size_t i = 0; i < size; ++i) {delete staff_listt[i];}
    delete[]staff_listt;
}
```

```

void Staff::AddNewMember(department*depList,int size) {
    int type = -1; int c;
    cout << "\n\n::Enter Member Type: \n"; cout << "[1] Volunteer\n[2] Salarid Employee\n"
        "[3] Hourly Employee \n[4] Commission Employee\n[5] Executive Employee!!";
    cout << "\nEnter Your Choice: "; cin >> type;
    bool flag = true;
    if (type == 1) { system("cls"); staff_listtt[count_total] = new Volunteer;}
    else if (type == 2) {system("cls");
    cout << " Enter Salaried Employee Member details:: " << endl;
        staff_listtt[count_total] = new S_Employee;}
    else if (type == 3) { system("cls"); staff_listtt[count_total] = new H_Employee;}
    else if (type == 4) {system("cls");staff_listtt[count_total] = new Commission;}
    else if (type == 5) {system("cls");staff_listtt[count_total] = new Executive;}
    else flag = false;
    if (flag) {
        staff_listtt[count_total]->setEmpId(count_total + 1);
        staff_listtt[count_total]->readInput();
        cout << "\n-----\n";
        for (size_t i = 0; i < size; i++) depList[i].print();
        cout << "\n-----\n";
        cout << "\n Enter Department Id: "; cin >> c;
        staff_listtt[count_total]->setDepart(depList[c - 1001]);
        ++count_total;
    }
}

void Staff::SearchMember() {
    string keySer;int foundMemeber = 0;
    cout << "\n:. Enter Name Or Phone To Find: "; cin >> keySer;
    for (size_t i = 0; i < count_total; ++i) {
        if (staff_listtt[i]->search(keySer)) {staff_listtt[i]->print();
            cout << "-----\n";
            ++foundMemeber;
        }
    }
    if (foundMemeber == 0) cout << "\n\nNo Member Found!!\n";
    else cout << foundMemeber << " Founded\n";
}

void Staff::printAllMebers()
{
    if (count_total == 0) { cout << " \n\nNo Employees Found!!!\n";}
    else { cout << "\n:: List Of Employees: \n";
        cout << "===== \n";
        for (int i = 0; i < count_total; ++i){
            staff_listtt[i]->print();
            cout << "-----\n";
        }
    }
}

void Staff::calcPayRoll()
{
    cout << "\n\t Employee Total PayRoll.....\n";
    double _total = 0;
    for (size_t i = 0; i < count_total; ++i)
    {
        _total += staff_listtt[i]->pay();
    }
    cout << "\t Total PayRoll = " << _total << endl;
}

```



```

void Staff::deleteMember(){
    string keySer; bool delet = false;
    cout << ">:: Enter Name Or Phone To delete: "; cin >> keySer;
    for (size_t i = 0; i < count_total; i++)
    {
        if (staff_listt[i]->search(keySer)) {
            if (i == count_total - 1) count_total--;
            else {
                staff_listt[i] = staff_listt[count_total - 1];
                count_total--;
            }
        }
        delet = true; break;
    }
    if (!delet) cout << "\n\nNo Member Found To Delete..(\n";
    else cout << " Member Deleted Successfully..)\n";
}

```

Staff Member Source Code: __staffMember.h__

```

#pragma once
#include<string>
#include"department.h"
using namespace std;
class StaffMember{
protected:
    string fName, lName; int empid, age;
    bool gender; string phone; string email;
    department depart;
public:
    StaffMember(); ~StaffMember();
    void setName(string, string); void setEmpId(int);
    void setAge(int); int getId(); void setGender(bool);
    bool search(string); virtual void readInput();
    virtual void print(); virtual double pay() = 0;
    void setDepart(department);
};

```

Staff Member Source Code: __staffMember.cpp__

```

#include "StaffMember.h"
#include<iostream>
using namespace std;
StaffMember::StaffMember():fName("No Name"),age(0),gender("No Gender Added"){
    setName(fName, lName); setEmpId(empid); setAge(age); setGender(gender);}
StaffMember::~StaffMember(){}
void StaffMember::setName(string fname, string lname) {fName = fname; lName = lname;}
void StaffMember::setEmpId(int id) {empid = id;}
int StaffMember::getId() { return empid; }
void StaffMember::setAge(int age) { this->age = age;}
void StaffMember::setGender(bool gend) { gender = gend;}
bool StaffMember::search(string key){
    if (fName.compare(key) == 0 || lName.compare(key) == 0 || phone.compare(key) ||
    email.compare(key)) return true;
    return false;
}

```

```

void StaffMember::readInput()
{
    cout << " \n First Name: ";cin.ignore(); cin >> fName;
    cout << " Last Name: "; cin >> lName;
    cout << " Age: ";cin >> age;
    cout << " Enter '0' For Male And '1' For Female: ";cin >> gender;
    cout << " Enter Your Phone Number: "; cin >> phone;
    cout << " Enter Your Email: "; cin >> email;
}

void StaffMember::print()
{
    cout << "\nId: " << empid << "\tName: " << fName << " " << lName;
    if (age > 0) {
        cout << "\t\tAge: " << age;
    }
    if (gender == 0) cout << " \tGender: Male";
    else cout << " \tGender: Female";
    cout << "\n\tPhone: " << phone;
    cout << "\t\tEmail: " << email;
    cout << "\n\tDepartment: " << depart->getName() << endl;
}

void StaffMember::setDepart(department *depart) {
    this->depart = depart;
}

```

Employee Source Code: __Employee.h__

```

#pragma once
#include"StaffMember.h"
#include<string>
using namespace std;
class Employee :public StaffMember{
protected:
    string socialSecurityNumber;
public:
    Employee();
    void setsocialSecurityNumber(string);
    virtual void readInput();
    virtual void print(); virtual double pay();
};

```

Employee Source Code: __Employee.cpp__

```

#include "Employee.h"
#include<iostream>
using namespace std;
Employee::Employee(){setsocialSecurityNumber(socialSecurityNumber);}
void Employee::setsocialSecurityNumber(string soc) {socialSecurityNumber = soc;}
void Employee::readInput(){ StaffMember::readInput();
    cout << " Enter Your Social Security Number: ";cin >> socialSecurityNumber;}
void Employee::print()
{StaffMember::print();
    cout << ".: Social Security Number is: " << socialSecurityNumber << endl;}
double Employee::pay() {return 0.0;}

```

Volunterr Source Code: __Volunteer.h__

```
#pragma once
#include "StaffMember.h"
class Volunteer:public StaffMember{
    int amount = 0;
public:
    void setAmount(int);
    void readInput();
    void print();
    double pay();
};
```

Volunteer Source Code: __Volunteer.cpp__

```
#include "Volunteer.h"
#include <iostream>
void Volunteer::setAmount(int a){amount = a;}
void Volunteer::readInput(){cout << " Enter Volunteer Member details:: " << endl;
    StaffMember::readInput();cout << " Enter Amount: "; cin >> amount;
}
void Volunteer::print(){StaffMember::print();std::cout << ".: Your Pay Roll is: 0\n";}
double Volunteer::pay(){return amount;}
```

S_Employee Source Code: __S_Employee.h__

```
#pragma once
#include "Employee.h"
class S_Employee:public Employee{
protected:
    double salary;
public:
    S_Employee();
    void setSalary(double);
    virtual void readInput();
    virtual void print();
    virtual double pay();
};
```

Employee Source Code: __S_Employee.cp__

```
#include "S_Employee.h"
#include <iostream>
#include <string>
using namespace std;
S_Employee::S_Employee() {setSalary(salary);}
void S_Employee::setSalary(double s){ salary = s;}
void S_Employee::readInput() { Employee::readInput();
cout << " Enter Your Slary: ";cin >> salary;}
void S_Employee::print(){Employee::print();
    cout << ".: Your Pay Roll Is: " << this->pay() << endl;}
double S_Employee::pay() {return salary;}
```

H_Employee Source Code: __H_Employee.h__

```
#pragma once
#include "Employee.h"
class H_Employee:public Employee{
    double rate, hoursWorked;
public:
    H_Employee();
    void setRateWork(double, double);
    double pay();void readInput();void print();
};
```

H_Employee Source Code: __H_Employee.cpp__

```
#include "H_Employee.h"
#include <iostream>
H_Employee::H_Employee(){setRateWork(rate, hoursWorked);}
void H_Employee::setRateWork(double rate, double work){
    this->rate = rate;hoursWorked = work;}
double H_Employee::pay(){return rate*hoursWorked;}
void H_Employee::readInput(){
    cout << " Enter Hourly Employee Member details:: " << endl;
    Employee::readInput();cout << " Enter Rate: "; cin >> rate;
    cout << " Enter Hours Worked: "; cin >> hoursWorked;}
void H_Employee::print(){Employee::print();
    cout << " .: Your Payment is: " << rate * hoursWorked << endl;}
```

Commission Source Code: __Commission.h__

```
#pragma once
#include "Employee.h"
class Commission:public Employee{
    double target;
public:
    Commission();
    void setTarget(double);
    void readInput();
    void print();double pay();
};
```

Commission Source Code: __Commission.h__

```
#include "Commission.h"
#include <iostream>
using namespace std;
void Commission::setTarget(double tar){target = tar;}
Commission::Commission(){target = 0;}
void Commission::readInput()
{double tarr;cout << " Enter Commission Member details:: " << endl;
    Employee::readInput();cout << " Enter Your Target: "; cin >> tarr;
    setTarget(tarr);}
void Commission::print()
{Employee::print();cout << " .: Your Payment Is: " << target << endl;}
double Commission::pay(){return 0.05 * target;}
```

Executive Source Code: __ Executive.h__

```
#pragma once
#include "S_Employee.h"
class Executive:public S_Employee
{
    double bounus;
public:
    Executive();
    void addBounus(double);
    double pay();
    void readInput();
    void print();
};
```

Executive Source Code: __ Executive.cpp__

```
#include "Executive.h"
#include <iostream>
Executive::Executive(){
    addBounus(bounus);
}
void Executive::addBounus(double BB) {
    bounus = BB;
}
double Executive::pay(){return bounus + salary;}
void Executive::readInput(){
    cout << " Enter Executive Member details:: " << endl;
    S_Employee::readInput(); cout << " Enter Bounus: "; cin >> bounus;
}
void Executive::print(){
    Employee::print();cout << ".: Your Pay is: " << pay() << endl;
}
```

CreateProject Source Code: __ CreateProject.h__

```
#pragma once
#include "Project.h"
#include "Budget.h"
#include "Employee.h"
class CreateProject
{
    Budget *budCount;
    int size;
    int count;
    Project* project;
    Employee* manager;
public:
    CreateProject(int);
    ~CreateProject();
    void addNewProject();
    void showAllProject();
    void incrProjBud(long double idddd);
};
```

CreateProject Source Code: __ CreateProject.cpp__

```
#include "CreateProject.h"
#include<iostream>
#include<string>
CreateProject::CreateProject(int amount) {count = 0;size = amount;
    project = new Project[size];
    manager = new Employee[size];
    budCount = new Budget[size];
}
void CreateProject::addNewProject()
{
    Project* newProject = new Project;
    Employee* newmanger = new Employee;
    Budget* newBudget = new Budget;
    newProject->setProId(count + 1);
    newmanger->setEmpId(count + 1);
    budCount->setBudId(count + 1);
    newProject->addProject();
    newBudget->readBud();
    cout << ">> Enter Manager Details:";
    newmanger->readInput();
    project[count] = *newProject;
    manager[count] = *newmanger;
    budCount[count] = *newBudget;
    ++count;
}
void CreateProject::showAllProject()
{
    bool pro = false;
    for (size_t i = 0; i < count; i++)
    {
        pro = true;
        project[i].showProject();
        cout << "-----\n";
        budCount[i].printBud();
        cout << "-----";
        cout << "\n*> Manager Details Are: \n";
        manager[i].print();
        cout <<
        "===== \n";
    }
    if (!pro) cout << "\n\t No ProJect Found!!\n";
}
void CreateProject::incrProjBud(long double idddd){
    bool _found = false;
    int increase;
    for (size_t i = 0; i < count; i++)
    {
        if (project[i].getProId() == idddd) {
            cout << " \n*> Enter Budget Increment: "; cin >> increase;
            budCount[i].increaseBud(increase);
            _found = true;break;
        }
    }
    if (!_found)cout << "\n\t Project Not Found!!\n";
}
CreateProject::~~CreateProject(){delete[]project;delete[]manager;delete[]budCount;}
```

Project Source Code: __ Project.h__

```
#pragma once
#include "Budget.h"
#include "Employee.h"
#include "string"
class Project
{
    int proId;
    long double costCurr;
    string namePro, locPro;

public:
    void setProId(int id);
    int getProId();
    void setProName(string name);
    void setProLoc(string loc);
    virtual void addProject();
    virtual void showProject();
};
```

Project Source Code: __ Project.cpp__

```
#include "Project.h"
#include <iostream>
using namespace std;
void Project::setProId(int id){proId = id;}
int Project::getProId(){ return proId;}
void Project::setProName(string name){namePro = name;}
void Project::setProLoc(string loc){locPro = loc;}
void Project::addProject()
{
    cout << ">> Enter Project Name: ";
    cin.ignore(); getline(cin, namePro);
    cout << ">> Enter Project Location: ";
    cin.ignore(); getline(cin, locPro);
    cout << ">> Enter The Current Cost Which Company has: ";
    cin >> costCurr;
}

void Project::showProject()
{
    cout << ">> Project Id: " << proId << endl;
    cout << ">> Project Name: " << namePro << endl;
    cout << ">> Project Location: " << locPro << endl;
    cout << ">> The Capital Of Company: " << costCurr << endl;
}
```

Bydget Source Code: __ Budget.h__

```
#pragma once
class Budget {
    int budid = 0;
    double value = 0;
public:

    void setBud(double value);
    void setBudId(int bbb);
    int getBudId() const;
    void increaseBud(double incr);
    double getBud() const;
    void readBud();
    void printBud() const;
};
```

Bydget Source Code: __ Budget.cpp__

```
#include "Budget.h"
#include<iostream>
using namespace std;
void Budget::setBud(double value)
{
    this->value = value;
}

void Budget::setBudId(int bbb)
{
    budid = bbb;
}
int Budget::getBudId() const
{return budid;}
void Budget::increaseBud(double incr)
{value += incr;}
double Budget::getBud() const
{return value;}
void Budget::readBud()
{
    cout << ">> Enter Budget: ";
    cin >> value;
    char aaa = 'y';
    cout << ">> Would You Like To Increase Project Budget: (y/n)";
    cin >> aaa;
    if (aaa == 'y' || aaa == 'Y') {
        int inc;
        cout << ">> Enter Increment: ";
        cin >> inc;
        this->increaseBud(inc);
    }
}

void Budget::printBud() const
{
    cout << "**> The Budget Value is: " << this->getBud() << endl;
}
```