Topic : Life Insurance Management System

Group no : MLB_10.2_11

Campus : Malabe

Submission Date : 19th May 2022

We declare that this is our own work and this Assignment does not incorporate without acknowledgment any material previously submitted by anyone else in SLIIT or any other university/Institute. And we declare that each one of us equally contributed to the completion of this Assignment.

Registration No	Name	Contact Number
IT21380150	Chanuth Naveen Pieris	076 559 6961
IT21189494	C.H.H.K.S.A. Chandrasekara	075 590 9951
IT21377808	M.L.Y.M. Liyanage	070 175 4954
IT21377044	R.S.U. Madushan	077 268 5678
IT21199530	W.M. Chamod Maheshan Weerasinghe	071 569 1022

Description of the requirements

The “Better Life Insurance” life insurance management system provides its customers a vast number of services related to life insurance through the official company system. This system has two main types of users who can access the system, the registered users, and the unregistered users. The registered users are known as members whilst the unregistered users are called as visitors. Visitors should register into the system in order to become a member. The system allows both users to view the system, browse through the basic pages and read public articles. Furthermore, the members are granted access to further features provided by the system.

Members can select and purchase a life insurance package according to their will and manage the monthly payments(premium) via the system. Firstly, they have to select a package option from the provided packages by the system. Then the system will display the payment information according to the selected package. The member then can fill in the method that they are willing to pay with the appropriate bank/card information. The system analyses the payment details in real time and alerts the user if there are any complications. If not, the system will approve the payment and generate an invoice containing the member and package details which will be sent to member’s email. Then the member can make monthly payments related to the insurance package via the system through a payment portal. If there comes an instance where a member has to request for a claim from the insurance company, the member can fill the according documents via the system and request for a claim that will be sent to the company for processing. Members will also be awarded with different types of rewards that will be created by the company according to the members traits. The system will update and display about these rewards in the website.

The administrators can add, remove, and update the packages displayed in the system, view details regarding members, payments, rewards and more. They can also perform basic website functionalities such as accepting new advertisements to display on the website and remove old advertisements.

Identified classes

- Visitor
- Member
- Package
- Payment
- Invoice
- Reward
- Administrator

(Noun-verb analysis is not included according to the given instructions)

CRC Cards

Visitor	
Responsibilities	**Collaborations**
Browse through pages	
Read public articles	

Member	
Responsibilities	**Collaborations**
Enter user details	
Purchase a package	Package, Payment
Make a payment	Payment
Collect rewards	Reward

Package	
Responsibilities	**Collaborations**
Store package details	
Update package details	
Add packages	
Delete packages	

Payment	
Responsibilities	**Collaborations**
Store payment details	Member
Calculate total amount	Invoice, Package
Validate payment	

Invoice	
Responsibilities	**Collaborations**
Store invoice details	
Store the calculated total amount	Payment

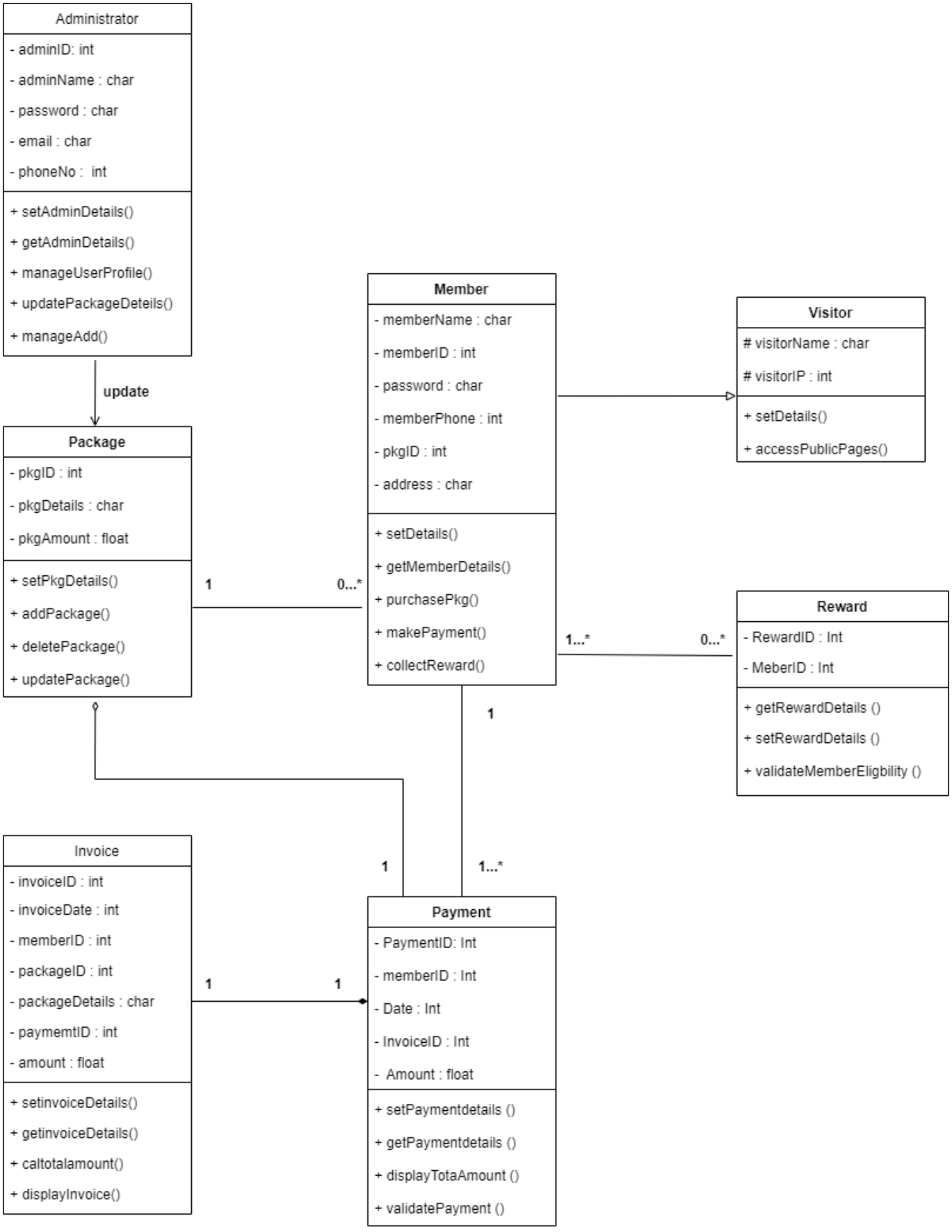
Reward	
Responsibilities	**Collaborations**
Store reward details	
Check member eligibility	Member

Administrator	
Responsibilities	**Collaborations**
Update packages	Package
Manage advertisements	

Exercise 01: Class Diagram

Individual Contribution:

Student ID	Name	Created Class
IT21380150	Chanuth Naveen Pieris	Payment
IT21189494	C.H.H.K.S.A. Chandrasekara	Visitor, Member, Package
IT21377808	M.L.Y.M. Liyanage	Administrator
IT21377044	R.S.U. Madushan	Reward
IT21199530	W.M. Chamod Maheshan Weerasinghe	Invoice


Administrator
- adminID: int
- adminName : char
- password : char
- email : char
- phoneNo : int
+ setAdminDetails()
+ getAdminDetails()
+ manageUserProfile()
+ updatePackageDeteils()
+ manageAdd()
update
Package
- pkgID : int
- pkgDetails : char
- pkgAmount : float
+ setPkgDetails()
+ addPackage()
+ deletePackage()
+ updatePackage()
Member
- memberName : char
- memberID : int
- password : char
- memberPhone : int
- pkgID : int
- address : char
+ setDetails()
+ getMemberDetails()
+ purchasePkg()
+ makePayment()
+ collectReward()
Visitor
visitorName : char
visitorIP : int
+ setDetails()
+ accessPublicPages()
Reward
- RewardID : Int
- MeberID : Int
+ getRewardDetails ()
+ setRewardDetails ()
+ validateMemberEligbility ()
1
0...*
1...*
0...*
1
1
1...*
Invoice
- invoiceID : int
- invoiceDate : int
- memberID : int
- packageID : int
- packageDetails : char
- paymemtID : int
- amount : float
+ setinvoiceDetails()
+ getinvoiceDetails()
+ caltotalamount()
+ displayInvoice()
1
1
Payment
- PaymentID: Int
- memberID : Int
- Date : Int
- InvoiceID : Int
- Amount : float
+ setPaymentdetails ()
+ getPaymentdetails ()
+ displayTotaAmount ()
+ validatePayment ()

Exercise 02: Coding for classes

Individual Contribution:

Student ID	Name	Coded Class
IT21380150	Chanuth Naveen Pieris	Payment
IT21189494	C.H.H.K.S.A. Chandrasekara	Visitor, Member, Package
IT21377808	M.L.Y.M. Liyanage	Administrator
IT21377044	R.S.U. Madushan	Reward
IT21199530	W.M. Chamod Maheshan Weerasinghe	Invoice

```
#include <iostream>
#include <cstring>
#define SIZE

using namespace std;

//Following classes are coded by : C H H K S A Chandrasekara - IT21189494
class Visitor{
protected:
    char visitorName[30];
    int visitorIP;

public:
    Visitor() {

    }

    Visitor(char vName, int vIP) {
        strcpy_s(visitorName, vName);
        visitorIP = vIP;
    }

    void setVisitorDetails() {

    }

    void accessPublicPages() {

    }

    ~Visitor() {
```

```
    }
};

//Inheritance; Visitor class is the bass class and Member class is the derived
class
class Member : public Visitor {
private:
    char memberName[30];
    int memberID;
    char password[15];
    int memberPhone;
    int pkgID;
    char address[50];
    Package* pkg; //Bi-directional association with Package class
    Payment* pmnt[100]; //Bi-directional association with Payment class
    Reward* rwd[20]; //Bi-directional association with Reward class

public:
    Member() {

    }

    Member(char mName, int mID, char pswd, int mPhone, int pID, char mAddress,
Package *pk) {
        strcpy_s(memberName, mName);
        memberID = mID;
        strcpy_s(password, pswd);
        memberPhone = mPhone;
        pkgID = pID;
        strcpy_s(address, mAddress);
        pkg = pk;
    }

    void makePayment(Payment* mbrPmnt) {

    }

    void collectReward(Reward* mbrRwrd) {

    }

    void setDetails() {

    }

    int getMemberDetails() {
```

```
    }

    void purchasePkg() {

    }

    ~Member() {

    }
};

class Package {
private:
    int pkgID;
    char pkgDetails[50];
    float pkgAmount;
    Member* mbr[100]; //Bi-directional association with Member class
    Payment* pmt; //Aggregation relationship with Payment class

public:
    Package() {

    }

    Package(int pID, char pDetails, float pAmount) {
        pkgID = pID;
        strcpy_s(pkgDetails, pDetails);
        pkgAmount = pAmount;
    }

    void addPayment(Payment *pay) {
        pmt = pay;
    }

    void addMember(Member* mb) {
        mbr = mb;
    }

    void setPkgDetails() {

    }

    void addPackage() {

    }

    void deletePackage() {
```

```
    }

    void updatePackage() {

    }

    ~Package() {

    }
};

//Following class is coded by : Chanuth Naveen Pieris - IT21380150
class Payment {
Private:
    int PaymentID;
    int MemberID;
    int Date;
    int InvoiceID;
    float Amount;
    Invoice*Invo[SIZE];
    Member*Mbr;

Public:
    Payment (int pPaymentID, float pAmount, pMemberID, pInvoiceID,  pDate)
    {
        PaymentID= pPaymentID;
        memberID = pMemberID;
        InvoiceID = pInvoiceID;
        Date = pDate;
        Amount = pAmount;
    }

    void  addInvoice ()
    {
        Invo[0]= New Invoice ();
        Invo[1]= New Invoice ();
    }

    void  addMember (Member* mb)
    {
        Mbr = mb
    }

    void  setPaymentDetails (int pPaymentID, pMemberID, pInvoiceID,  pDate,
float pAmount)
    {
        PaymentID = pPaymentID;
        memberID = pMemberID;
```

```
        InvoiceID = pInvoiceID;
        Date = pDate;
        Amount = pAmount;
    }

    int  getPaymentDetails ()
    {
    }

    int  Amount ()
    {
    }

    Void  ValidatePayment ()
    {
    }

    ~ Payment ()
    {
        for(int x=0; x<SIZE ; x++)
            delete Invo[x];
    }

};

//Following class is coded by : M.L.Y.M. Liyanage - IT21377808
class Admin
{
private:
    int adminID;
    char adminName[30];
    char password[20];
    char email[20];
    int phoneNo;
    Package *pk;

public:
    Admin()
    {

    }

    Admin(char pName[], int pID, char pWord[], char pMail[], int pNo)
    {
        strcpy(adminName, pName);
        strcpy(password, pWord);
        strcpy(email, pMail);
        adminID = pID;
```

```
        phoneNo = pNo;
    }

    ~Admin()
    {

    }

    void setAdminDetails(char pName[], int pID, char pWord[], char pMail[],
int pNo)
    {
        strcpy(adminName, pName);
        strcpy(password, pWord);
        strcpy(email, pMail);
        adminID = pID;
        phoneNo = pNo;
    }

    void updatePackageDetails(Package *p)
    {
        pk = p;
    }

    void getAdminDetails(){}
    void manageUserProfile(){}
    void manageAdd(){}
};

//Following class is coded by : R.S.U. Madushan - IT21377044
class Reward
{
private:
    int rewardID;
    int memberID;
    Member *mb[100];

public:
    Reward(int PrewardID,  int PmemberID)
    {
    rewardID = PrewardID;
    memberID = PmemberID;
    }

    void addEligableMember(Member* m)
    {

    }
```

```
    void setRewardDetails()
    {

    }
    int getRewardDetails()
    {

    }

    void validateMemberEligibility()
    {

    }

    ~Reward()
    {

    }
};

//Following class is coded by : W.M. Chamod Maheshan Weerasinghe - IT21199530
class Invoice
{
    private:
        int invoiceID;
        int invoiceDate;
        int memberID;
        int packageID;
        char packageDetails;
        int paymentID;
        float amount;

    public:
        Invoice(int PinvoiceID, int PinvoiceDate, int PmemberID, int
PpackageID, int PpackageDetails, int PpaymenyID, float Pamount)
        {
        invoiceID = PinvoiceID;
        invoiceDate = PinvoiceDate;
        memberID = PmemberID;
        packageID = PpackageID;
        strcpy = PpackageDetails;
        paymentID = PpaymenyID;
        amount = Pamount;

        }
        void setInvoiceDetails(int PinvoiceID, int PinvoiceDate, int
PmemberID, int PpackageID, int PpackageDetails, int PpaymenyID, float Pamount)
        {
```

```
        invoiceID = PinvoiceID;
        invoiceDate = PinvoiceDate;
        memberID = PmemberID;
        packageID = PpackageID;
        strcpy = PpackageDetails;
        paymentID = PpaymenyID;
        amount = Pamount;

        }
        int getInvoiceDetails()
        {}
        int getMemberDetails()
        {}
        int Caltotalamountc ()
        {}
        void displayInvoiceDetails()
        {}
        ~Invoice()
        {}
};

int main()
{

    Visitor* v1 = new Visitor("Sam", 123456789);
    v1->setVisitorDetails();
    v1->accessPublicPages();

    Package* p1 = new Package(001, "Package 1", 100000.00);
    p1->setPkgDetails();
    p1->updatePackage();
    p1->deletePackage();


    Member* m1 = new Member("Bob", 1234, "abc123", 0111234567, 001, "123, Abc
Road, Main City", p1);
    m1->accessPublicPages();
    m1->setDetails();
    m1->getMemberDetails();
    m1->purchasePkg();

    Payment *py1 = New Payment (10,9,12 ,15,2000);
    py1->Amount();
    py1->ValidatePayment();

    Admin *a1 = new Admin("Jake", 1234, "abc123", "abc@mail.com", 0711234567);
    a1->getAdminDetails();
    a1->manageUserProfile();
    a1->manageAdd();
```

```
    Reward *r1 = new Reward(0001, 123);
    r1->setRewardDetails();
    r1->getRewardDetails();
    r1->validateMemberEligibility();

    Invoice *in1 = new Invoice(I0045,5,008,25994,xxxxxxxxx,A0215,45000.00);
    in1->setInvoiceDetails();
    in1->getInvoiceDetails();
    in1->getMemberDetails();
    in1->Caltotalamountc();
    in1->displayInvoiceDetails();


    delete v1;
    delete p1;
    delete m1;
    delete py1;
    delete a1;
    delete r1;

    return 0;
}
```