BSc (Hons) in Information Technology

Object-Oriented Concepts – IT1050

Assignment 2

Year 1, Semester 2 **2024 - February**

Topic: Life Insurance Management System

Group no: MLB_WD_04.02_08

Campus: SLIIT MALABE

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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.

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Table of Contents

1. Description of the Requirements

- Registered customers, Admin, Manager, and Agent are the users of this Life Insurance Management System.

- All the users can visit the website, look at insurance packages, visit terms and conditions, and the feedback of the users.

- Users can log in to the system using the username and the password.

- Registered customer must give their name and ID when registered.

- Registered customers can apply for insurance claims, and active insurance packages, give feedback, and make insurance package payments.

- Also, registered customers can pay for the insurance packages using credit card/debit cards and bank deposits.

- Admin has to give their name and ID when registered.

- Admin has to give his username and Password when he logs into the system.

- Admin can verify insurance claim details of users and Registered customers.

- Admin can add new user details for the database, remove user details from the database, and update user details in the database.

- Agent has to give his username and password when he logs into the system.

- Agent can add new insurance package to system.

- The Manager has to give their username and password when they log into the system.
- Manager can make insurance claims payments.
- Only the manager can approve insurance claims that registered customers apply.
- The manager can renew the feedback sent from customers.
- Also, the manager can generate the reports.

2. Classes Identified:

❖ User

❖ RegisteredCustomer

❖ Admin

❖ Manager

❖ Agent

❖ InsuranceClaims

❖ Packagers

❖ Reports

❖ Feedback

❖ Payment

3. CRC Card

User	
Responsibilities:	**Collaboration:**
Login to the system.	
View insurance packages.	

Registered User	
Responsibilities:	**Collaboration:**
Choose insurance packages.	Insurance Package
Make payment for packages.	Payment
Apply insurance claims.	Insurance Claim
Give feedback.	Feedback

Insurance Package	
Responsibilities:	**Collaboration:**
Store package details.	
Display package details.	
New Insurance Package	Agent

Feedback	
Responsibilities:	**Collaboration:**
Store feedback	
View feedback	

Payment	
Responsibilities:	**Collaboration:**
Store payment details.	
Display payment details.	
Validate payment	Manager

Insurance Claim	
Responsibilities:	**Collaboration:**
Store insurance claim details.	
Display insurance claim details.	
Validate claims	Manager

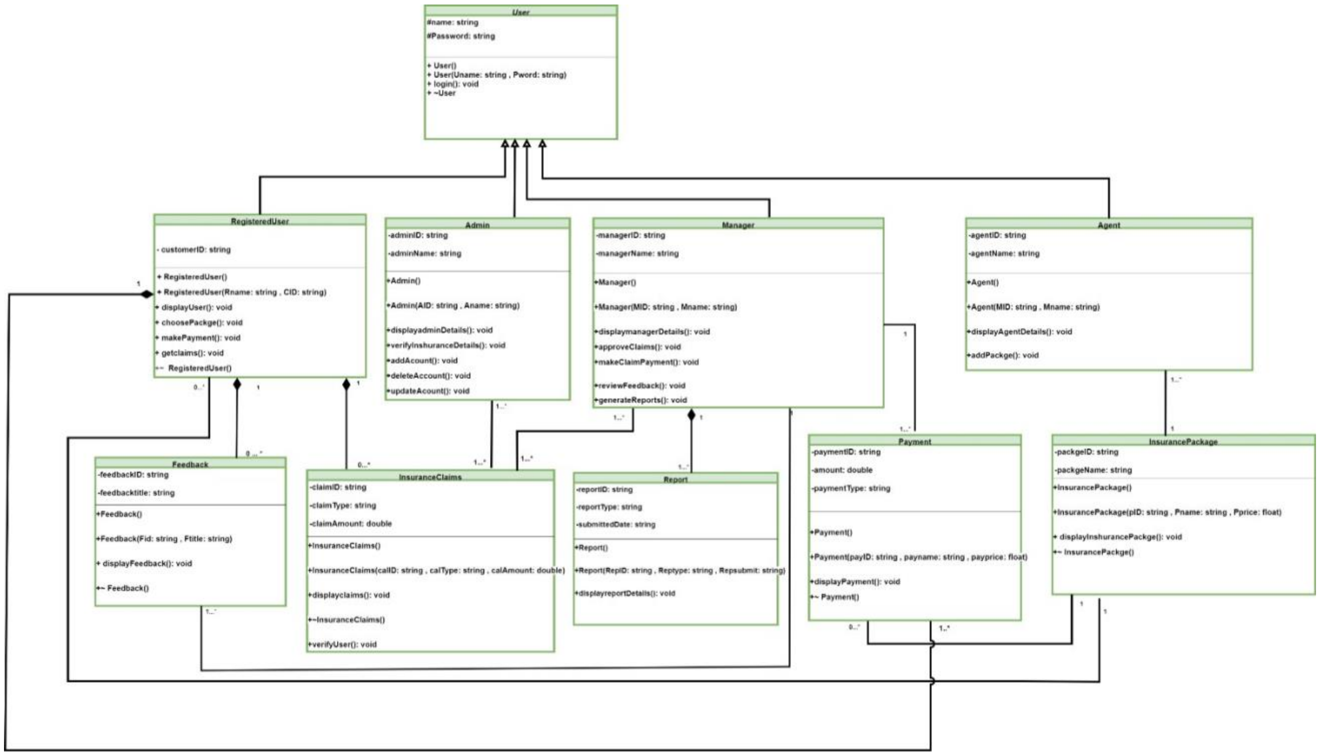
Admin	
Responsibilities:	**Collaboration:**
Verify insurance claim documents.	Insurance Claim
Manage user details	Registered user

Agent	
Responsibilities:	**Collaboration:**
Store agent information.	
Add new insurance package	Insurance package

Manager	
Responsibilities:	**Collaboration:**
Approve insurance claims.	Insurance Claim
Make insurance claim payments	Payment
Review feedback	Feedback
Generate reports	Reports

Report	
Responsibilities:	**Collaboration:**
Generate reports about packages	Insurance packages
Generate transaction Reports	Payment

4. Class Diagram



5. Code for classes.

user.h

```
#pragma once
#include<iostream> using
namespace std; class user
{
protected:
        string name; string
        password;

public:
        user();
        user(string Uname, string pwd);
        void login(string Uname , string pwd);
        ~user();

};
```

user.cpp

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

user::user(){}
user::user(string Uname, string pwd)
{
        name = Uname;
        password = pwd;
}

void user::login(string Uname, string pwd){} user :: ~user(){}
```

main.cpp

```
#include<iostream> #include"user.h"
#include"registeredUser.h"
#include"package.h"
#include"InsuranceClaim.h"
#include"Admin.h"
#include"Manager.h"
#include"Agent.h"
#include"payment.h"
#include"Report.h"
#include"feedback.h"
using namespace std;

int main ()
{
	/*Data insert to register user*/

	registeredUser* ruser = new registeredUser("jonny_sira", "1001" , "jonny siriwardhana" ,
"123","001","Hello","001","health",200000,"0001","transaction 1",50000);

	/*Display register user details*/ ruser-

	>displayUser();


//Data insert to Admin//
Admin* ad1 = new Admin("001", "Risini");

//Dispaly Admin details// ad1-
  >displayadminDetails();

//Data insert to InsuranceClaim//
InsuranceClaim * claim = new InsuranceClaim("001", "Helth", 20000.00, ad1);

//Dispaly claim details// claim-
>displayClaim();


ad1->verifyInsuranceDetails(claim);

//Data insert to InsuranceClaim//
Manager* m1=new Manager("123","Sandumini",claim); m1-
>displayManagerDetails();
m1->approveClaims(); m1-
>reviewFeedback(); m1-
>approveClaims(); m1-
>genaratereports();

//Dispaly claim details//
```

```
claim->displayClaim(); Agent agent;

  /*insertagentdetails*/

  agent.setAgentDetails(1, "John Doe", "john.doe@example.com", 123456789, 987654321);

  /*displayagentdetails*/

  agent.displayDetails();

/*data insert to packge*/
  package* pack = new package("007", "ultimate", 25000.00,ruser);

  /*display packge details*/

  pack->displaypackage(); ruser-
  >ChoosePackge(pack);


/*data insert to report*/

Report report1("ID12345321", "E-Mail" , "19/05/2024");



Delete ruser;
delete ad1; delete
claim; delete m1;
delete pack;
```

RegisteredCustomer.h

```
#pragma once #include
"user.h"
#include"feedback.h"
#include"payment.h"
#include"InsuranceClaim.h"
#include<iostream>
using namespace std; class
package;
class registeredUser:protected user
{
private:
        string username; string
        customerID; feedback* fbk;
        InsuranceClaim* clm;
        payment* pay; package*
        pkg;

public:
        registeredUser();
        registeredUser(string Rname, string CID, string uname, string pwd);
        registeredUser(string Rname, string CID, string uname, string pwd , string fid, string
ftitle);
        registeredUser(string Rname, string CID, string uname, string pwd , string calID,
string calType, double calAmount);
          registeredUser(string Rname, string CID, string uname, string pwd , string payID,
         string payname, float payprice); registeredUser(string Rname, string CID, string
                                                                                uname,
string pwd, string fid, string ftitle , string calID, string calType, double calAmount, string payID, string
payname, float payprice);
        void displayUser();
        void ChoosePackge(package* pack); void
        makePayment(double amt); void getClaims();
        ~registeredUser();

};
```

RegisteredCustomer.cpp

```
#include "registeredUser.h" #include
"user.h" #include<string>
#include<iostream> #include"feedback.h"
#include"payment.h"
#include"InsuranceClaim.h"

using namespace std; registeredUser::registeredUser()
{
        fbk = new feedback("No id", "Not set");
        clm = new InsuranceClaim("No id", "Type not set", 0); pay = new payment("Not
        set","Not set", 0);
}

registeredUser::registeredUser(string Rname, string CID , string uname , string pwd , string
fid, string ftitle) : user(uname, pwd)
{
        username = Rname;
        customerID = CID; name
        = uname; password =
        pwd;
        fbk = new feedback(fid,ftitle);

}
registeredUser::registeredUser(string Rname, string CID, string uname, string pwd , string calID,
string calType, double calAmount) : user(uname, pwd)
{
        username = Rname;
        customerID = CID; name
        = uname; password =
        pwd;
        clm = new InsuranceClaim(calID,calType,calAmount);
```

```
}
registeredUser::registeredUser(string Rname, string CID, string uname, string pwd , string payID,
string payname, float payprice) : user(uname, pwd)
{
        username = Rname;
        customerID = CID; name
        = uname; password =
        pwd;
        pay = new payment(payID, payname, payprice);

}
registeredUser::registeredUser(string Rname, string CID, string uname, string pwd) : user(uname,
pwd)
{
        username = Rname;
        customerID = CID; name
        = uname; password =
        pwd;


}
registeredUser::registeredUser(string Rname, string CID, string uname, string pwd, string fid,
string ftitle, string callD, string calType, double calAmount, string payID, string payname, float
payprice)
{
        username = Rname;
        customerID = CID; name
        = uname; password =
        pwd;
        pay = new payment(payID, payname, payprice);
        clm = new InsuranceClaim(callD, calType, calAmount); fbk = new feedback(fid,
        ftitle);
}

void registeredUser::displayUser()
{
        cout << "Display registered user Name : " << username <<
endl;
        cout << "Display registered user ID : " << customerID
<<endl;
        cout << "Display name : " << name << endl;
        cout << "Display password : *****" << endl <<endl;
```

```
          fbk->displayfeedback(); clm-
          >displayclaims(); pay-
          >displayPayment();

}

void registeredUser::ChoosePackge(package* pack)
{
          pkg = pack;

}
void registeredUser::makePayment(double amt)
{

}
void registeredUser::getClaims()
{

}

registeredUser::~registeredUser()
{
          delete          fbk;
          delete          clm;
          delete          pay;
          delete pkg;
}
```

Admin.h

```
#pragma once #include"user.h"
#include"InsuranceClaim.h"
#include<iostream>
using namespace std;

class InsuranceClaim;
class Admin : protected user
{
private:
        string adminID; string
        adminName; InsuranceClaim*
        claim;

public:
        Admin();
        Admin(string AId, string AName);

        void displayadminDetails();
        void verifyInsuranceDetails(InsuranceClaim* cal1); void addAccount();
        void deleteAccount(); void
        updateAccount();
        ~Admin();
};
```

Admin.cpp

```
##include "Admin.h"
#include "user.h"

#include "InsuranceClaim.h" #include<iostream>
using namespace std;

Admin::Admin() {
        adminID ="";
        adminName = "";
}
```

```
Admin::Admin(string AId, string AName)
{
        adminID = AId;
        adminName=AName;


}

void Admin::verifyInsuranceDetails(InsuranceClaim* cal1)
{
        claim = cal1;


}
void Admin::addAccount() {
}
void Admin::deleteAccount() {
}
void Admin::updateAccount() {
}
void Admin::displayadminDetails() {
        cout << "Admin ID = " << adminID << endl
                << "Admin Name = " << adminName << endl;


}
Admin::~Admin(){
    delete claim;
}       cout << "Admin ID = " << adminID << endl
                << "Admin Name = " << adminName << endl;


}
Admin::~Admin(){
    delete claim;
}
```

Manager.h

```
#include<string> #include<iostream>
#include "InsuranceClaim.h" #pragma
once
using namespace std;

class InsuranceClaim; class
Manager
{
private:
        string managerID; string
        managerName; InsuranceClaim*
        claim;
public:
        Manager();
        Manager(string MID,string Mname,InsuranceClaim* cla1); void
        displayManagerDetails();
        void approveClaims(); void
        makeClaimPayment(); void
        reviewFeedback(); void
        genaratereports();
        ~Manager();

};
```

Manager.cpp

```
#include"InsuranceClaim.h" #include"Manager.h"

#include <iostream> class


InsuranceClaim;
```

```
Manager::Manager() { managerID = "";
        managerName = "";
}
Manager::Manager(string  MID, string Mname, InsuranceClaim* cla1)

{
        managerID = MID;
        managerName = Mname;
        claim = cla1;
}


       void Manager::approveClaims() {
                   cout << "Claims approved by Manager " << managerName <<
endl;
}
void Manager::makeClaimPayment() {
        cout << "Claim payment made by Manager " << managerName <<
endl;

}
void Manager::reviewFeedback() {
        cout << "Feedback reviewed by Manager " << managerName <<
endl;
}
void  Manager::genaratereports() {
        cout << "Reports generated by Manager " << managerName <<
endl;
}
void Manager::displayManagerDetails() {
        cout << endl << "Management ID = " << managerID << endl << "Manager Name = " <<
managerName << endl;
        claim->displayClaim();
}
Manager::~Manager()
{
        delete claim;
}
```

Agent.h

```
#pragma once

#include<iostream>
#include <string>

using namespace std;

class Agent{ private:
        intagent_id; string
        name; string email; int
        NIC;
        int contact_no;

public:
        void setAgentDetails(int id, string name, string email, int NIC, int contact_no);
        void displayDetails(); int
        getAgentId();
};

#endif // AGENT_H
```

Agent.cpp

```
#include "agent.h"

void Agent::setAgentDetails(int id, string username, string mail, int nic, int ct_no) {
        agent_id = id; name =
        username; email =
        mail; NIC = nic;
        contact_no = ct_no;
}

void Agent::displayDetails() {
        cout << "Agent ID: " << agent_id << endl; cout << "Agent Name:
        " << name << endl; cout << "Agent Email: " << email << endl;
        cout << "Agent NIC: " << NIC << endl;
        cout << "Agent Contact number: " << contact_no << endl;
}

int Agent::getAgentId() { return agent_id;
}
```

InsuranceClaims.h

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

class InsuranceClaim
{
private:
	string claimID; string
	claimType; string
	claimAmount;

public:
	InsuranceClaim();
	InsuranceClaim(string calID, string calType, double calAmount);
	void displayclaims();
	~InsuranceClaim(); void
	verifyuser();

};
```

InsuranceClaims.cpp

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

InsuranceClaim::InsuranceClaim(){}

InsuranceClaim::InsuranceClaim(string calID, string calType, double calAmount)
{
	claimID = calID; claimType =
	calType; claimAmount =
	calAmount;
}
```

```
void InsuranceClaim::displayclaims()
{
        cout << "Claim Id : " << claimID << endl; cout << "Claim Type : " <<
        claimType <<endl;
        cout << "claim amount : " << claimAmount <<endl<< endl;

}
InsuranceClaim::~InsuranceClaim(){}

void InsuranceClaim::verifyuser()
{

}
```

Packagers.h

```
#pragma once #include<iostream>
#include"registeredUser.h" using
namespace std; class registeredUser;
class package
{
private:
       string packageID; string
       packgeName; double price;
       registeredUser* ruser;

public:
       package();
       package(string pid, string pname , double pprice , registeredUser* regUser);
       void displaypackage();
       ~package();




};
```

Packagers.cpp

```
#include "package.h"

#include<iostream> using
namespace std;

package:: package(){}
package::package(string pid, string pname, double pprice, registeredUser* regUser)
{
        packageID = pid;
          packgeName = pname;
          price = pprice; ruser =
          regUser;
}
void package::displaypackage()
{
        cout << "Package ID : " << packageID << endl; cout << "Package name : "
        << packgeName << endl; cout << "Package price : " << price << endl;

        ruser->displayUser();
}
package::~package()
{
        delete ruser;
}
```

Reports.h

```
#pragma once #include
<string>

using namespace std; class

Report
{
private:

                string reportID; string
                reportType; string
                submittedDate;

public:

                Report();
                Report(string RepID, string Reptype, string
Resubmit);
                void displayreportDetails();
};
```

Reports.cpp

```
#include           "Report.h"
#include          <iostream>
#include <string>

using namespace std; Report ::

Report () {}

Report :: Report(string RepID, string Reptype, string Resubmit)
{
        reportID = RepID; reportType =
        Reptype; submittedDate = Resubmit;
}

void Report :: displayreportDetails()
```

```
{
        cout << "Report ID : " << reportID << endl; cout << "Report Type : " <<
        reportType << endl;
        cout << "Submitted Date : " << submittedDate << endl;
}
```

Feedback.h

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

feedback::feedback(){} feedback::feedback(string fid, string ftitle)
{
        feedbackID = fid; feedback_title =
        ftitle;
}
void feedback::displayfeedback()
{
        cout << "Feedback ID : " << feedbackID << endl;
        cout << "Display title : " << feedback_title <<endl<<
endl;
}

feedback::~feedback(){}
```

Feedback.cpp

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


class feedback
{
private:
        string feedbackID; string
        feedback_title;

public:
        feedback();
        feedback(string fid, string ftitle); void displayfeedback();
        ~feedback();
};
```

Payment.h

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

payment::payment() {}
payment::payment(string payID, string payname, double payprice)
{
        paymentID = payID; amount =
        payprice; paymentType = payname;

}

void payment::displayPayment()
{
        cout << "Payment ID : " << paymentID << endl; cout << "Amount : "
        << amount << endl;
        cout << "payment type : " << paymentType << endl << endl;
}
payment::~payment(){}
```

06. Individual Contribution

IT23228276: Aaqib A. R

Designed the Classes

- Manager
- Payment

Coded for the above-mentioned Classes.
Created the CRC Cards for the relevant Classes.
Coded the relevant part in the main.cpp file.
Formatted and corrected the whole document.

IT23223530: Ahamed I.M. T

Designed the Classes

- User
- Report

Coded for the above-mentioned Classes.
Created the CRC Cards for the relevant Classes.
Coded the relevant part in the main.cpp file.

IT23220942: Thanis Ahamed A.R

Designed the Classes

- Agent
- Packagers

Coded for the above-mentioned Classes.
Created the CRC Cards for the relevant Classes.

IT23222236: Erathnage T. N

Designed the Classes

- Registered Customer
- Feedback

Coded for the above-mentioned Classes.
Created the CRC Cards for the relevant Classes.
Drew the class diagram using draw.io.

IT23222786: Budara V.P.R.

Designed the Classes

- Admin
- Insurance Claims

Coded for the above-mentioned Classes.
Created the CRC Cards for the relevant Classes.
Wrote the Description of the Requirements Section.