Software Engineering
(Project)

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Internet Service Provider Management System

Software Requirements Specification

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Work Breakdown Structure

1. Project Idea
    1.1. Selection of Project Idea
    1.2. Requirements
    1.3. Scope
2. Documentation
    2.1. Documentation Introduction
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3. Diagrams
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    3.5. Textual Use Case Diagram
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Roles & Responsibility Matrix:

The purpose of the roles & responsibility matrix is to identify who will do what.

WBS #	Activity #	Responsible Team Member(s) & Role(s)
1	1.1	BOTH
1	1.2	BOTH

1	1.3	BOTH
2	2.1	AHMED MUJTABA
2	2.2	AHMED MUJTABA
2	2.3	MUHAMMAD YOUSAF
3	Class Diagram	AHMED MUJTABA
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3.2	2-Level DFD	MUHAMMAD YOUSAF
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1. Introduction

In these modern time there is a need to computerize the internet billing system to manage and store the record of the customer and employee instead of doing everything hand written on registers. The Internet Service Provider Management System generates the bill according to the speed of the internet which the customer need and also record and maintain the data of the employee which works in company. This can help peoples to do their task more easily and efficiently without any problem and errors, as it is the case when every company tasks are done manually by human himself.

Login:

As this picture show first of all user have to login in the system . we save the default password for this purpose. The user name is based on company name suppose “msfiber” and the password is choice the company management let suppose “pak786786”. After login, a user have three option no 1 is for employee side, no 2 is for customer side and number no 3 is for exit button.

Employee side:

when the user press the 1 console open the employee menu. Employee menu have main 6 option insert the details of the employee in your company, update, search, delete, display and last but not the least go to the main menu. As you can see in delete option also have two option 1st to delete the details of only one employee and 2nd one is to delete the details of all employees.

Customer side:

When the user select no 2 option from the main menu the customer menu will open. This menu also has 7 option insert, update, search, delete, display, add monthly payment in customer payment and go to the main menu. As delete option also have two more option 1st to delete the record of a single customer and the 2nd to delete the record of all the customers.

Exit :

When the user press the 3 to exit the program the system will be terminated. It work like to logout from the system.

2. Objective

The objective of the Internet Service Provider Management System is to increase Efficiency and to maintain the record. It makes it easier to manage the details of the customer and also employee on a single platform. This can reduce human errors and speed up the process.

3. Problem Description

Due to large amount of customers as well as employees in the company it is difficult to keep track of data and is used to store the previous records e.g. customer's monthly bills and salaries of the employees. Managing records by hand written is very difficult and many times peoples make mistake in this and also require a specific time and a specific person to maintain the data. So to avoid the mistakes and waste of time there is an only automated management system. You don't even have to look for the customer's record and remember whether you

wrote the record or not. When the customer submits the bill, the record will be safe and the slip of the bill will be generated.

Our project have total 7 classes person, employee, empNode, empList, customer, node and list

First one is **person class** (parent class) which have some common things of employee and customer so we make a parent class with the name of person. The common things are id, name, contact, address etc.

It has two child classes one is employee and second is customer. We use to singly linked list in our project first one is for employee side and second one is for customer side.

employee class has two data members post (designation) and salary of the employee and also have default constructor().

empNode **class** has two data member one is the object of employee class which is the data of node and second is the next pointer which is the pointer in our node it point he next node.

empList **class** has two private member function head and tail of enode type. Also have default constructor that initialize head and tail are NULL. It contain the all the member function.

- void employeeMenu(); this function is the employee menu function the display the option for admin.
- void addEmployee(); this function is use to insNrt the employee details.
- void updateEmployee(); this function is use to update the employee details.
- void deleteEmployee(); this function is use to delete the data of a single employee.
- void deleteAllEmployee(); this function is use to delete the data of all the employees.
- void sort2(); this function is use to sort the display on console.
- void displayAllEmployee(); this function show the details of all employees on console.

cutomter class has three data members date of join of customer, package, payment and have a constructor to initialize them to null.

custNode class has two data member one is the object of customer class which is the data of node and second is the next pointer which is the pointer in our node it point he next node.

custList class has two private member function head and tail of node type. Also have default constructor that initialize head and tail are NULL. It contain the all the member function.

- void customerMenu(); this function is the customer menu function the display the option for admin.
- void addCustomer(); this function is use to insert the record of customer.
- void updateCustomer(); this function is used to update the previous record of the customer.
- void deleteCustomer(); this function is used to delete the record of single customer.
- void deleteAllCustomer(); this function is used to delete the record of all the customer.
- void sort(); this function is use to sort the display.
- void displayAllCustomer(); this function is use to display the record of all the customer and also tells he total number of customer.
- void addMonthyPayment(); this function is use to add in monthly payment customer in subscribe package.

Last but not the least main menu function it has 3 option to admin as we discuss above.We also add little bit file handling in main function just in login page

4. Requirements

All the requirements related to your system should be listed here.

1. Sign in / Sign out
    a. Sign in on Employee panel
    b. Sign in on Customer panel
2. Add/modify/Remove employees or customer's records
3. Searching records of employees or customers
4. Adaptable for windows operating system
5. User friendly UI

6. Creating bill slips
    a. Customer monthly Bill
    b. Employee salary slip

Functional Requirements Description

Functional Req. ID #	Function Name	Functional Requirement Description	Software Requirement
FR 1	Sign in on employee side	It will allow the team of ISP company to manage the record of all employees.	1a
FR 2	ADD employee record	The team of ISP company insert the data of new employee like name, address, resignation, phone no, etc.	2
FR 3	Modify employee record	The team of ISP company can update the record of all the employees like names, addresses, resignations, phone no, etc.	2
FR 4	Delete employee record	The team of ISP company can delete the record of all the employees or delete a record of one employee at one time.	2
FR 5	Searching employee record	The team of ISP company can search the record of any employee.	3
FR 6	Sign in on customer panel	It will allow the team of ISP company to manage the details of all the customers.	1b
FR 7	ADD customer record	The team of ISP company insert the data of new customer like name, address, package , phone no, payment etc.	2

FR 8	Modify employee record	The team of ISP company modify the record of any customer like name, address, package , phone no, payment etc.	2
FR 9	Delete employee record	The team of ISP company can delete the record of all the customers or delete a record of one customer at one time.	2
FR 10	Searching employee record	The team of ISP company can search the history of any customers.	3
FR 11	Creating slips	The team of ISP company can generate the salary slip for employees and also generate monthly payment bill for customers.	6
FR 12	Customer monthly bill	The team of ISP company can generate the salary slip for employees.	6a
FR 13	Employee salary slip	The team of ISP company can generate monthly payment bill for customers.	6b

Non-functional Requirements Description

Non-Functional Req. ID #	Function Name	Non-Functional Requirement Description	Software Requirement
NFR 1	User friendly interface	It will make very easy to use environment and attractive UI/UX design	5
NFR 2	Compatibility	Adaptable or fully supportable on windows OS	4
NFR 3	Security	The team of ISP cannot sign in on employee or customer panel with a unique username or a strong hashing password.	1a, 1b

NFR 4	Capacity	Storage capacity for saving the record the of the employees and customers.	2
NFR 5	Usability	Make easy to use for the team of ISO company	2, 6a, 6b
NFR 6	SIZE	What is the storing capacity in k bytes to store the records of customers and employees	2,3
NFR 7	Robustness	It will ensure to make less probability of failure of data of customers and employees	2,3,6
NFR 8	Portability	Depending module of the software like insert over modify, delete etc.	2,3

Constraint Requirements Description

Constraint Req. ID #	Function Name	Constraint Requirement Description	Software Requirement
CON 1	Tool	The system should be developed using dev cpp software	4
CON 2	Platform(podium)	This system should developed only for windows operating system and it can not run on Linux or mac OS.	4
CON 3	project budge	It will totally depend on the cost of the software.	4,5

Inverse Requirements Description

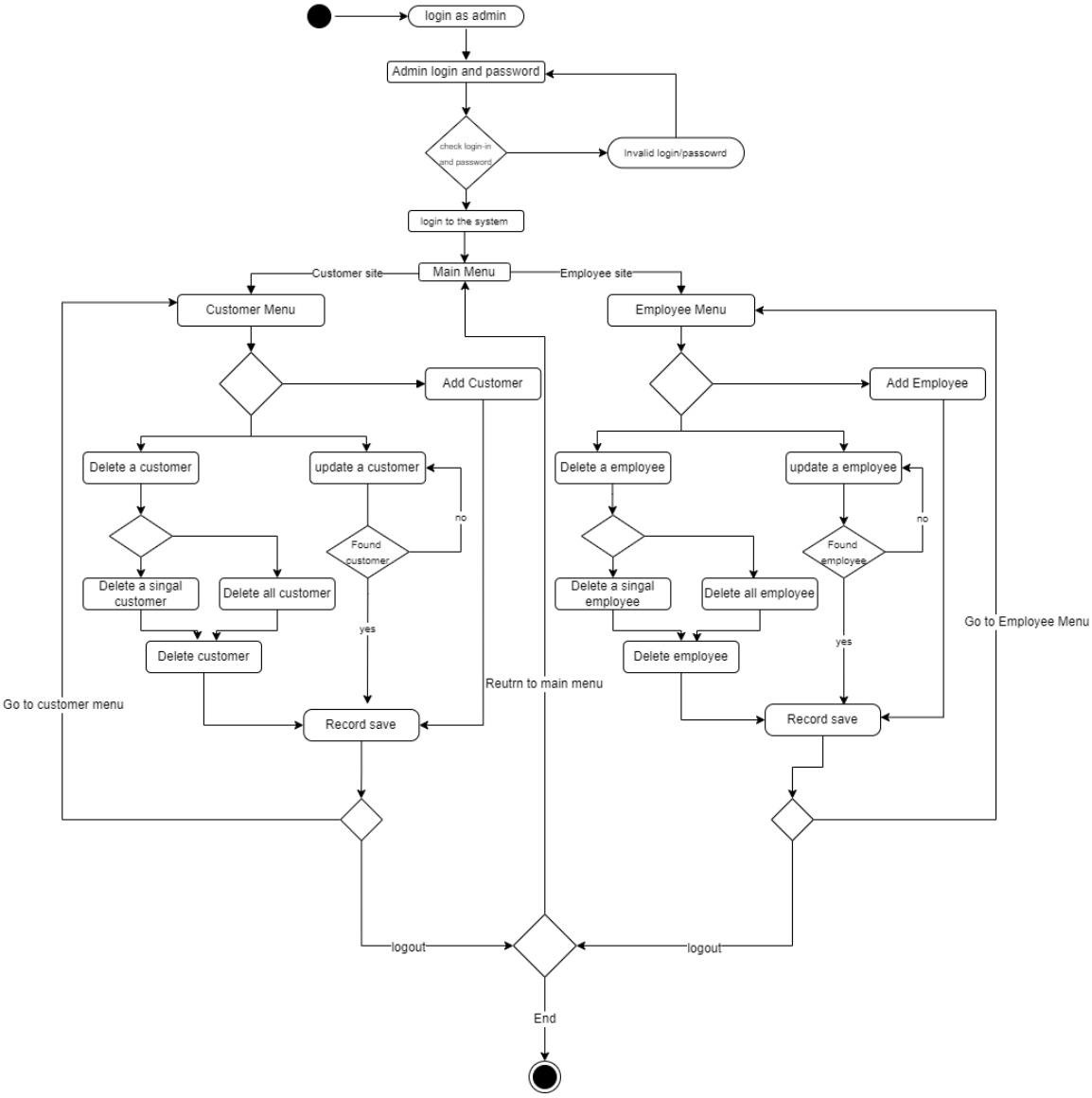
Inverse Req. ID #	Function Name	Inverse Requirement Description	Software Requirement
INV 1	Color Changing	The system cannot use red color user interface when team have to insert new	2

		details of employee or customer	
INV 2	Compatibility	This system cannot support any other operating system except windows operating system.	4

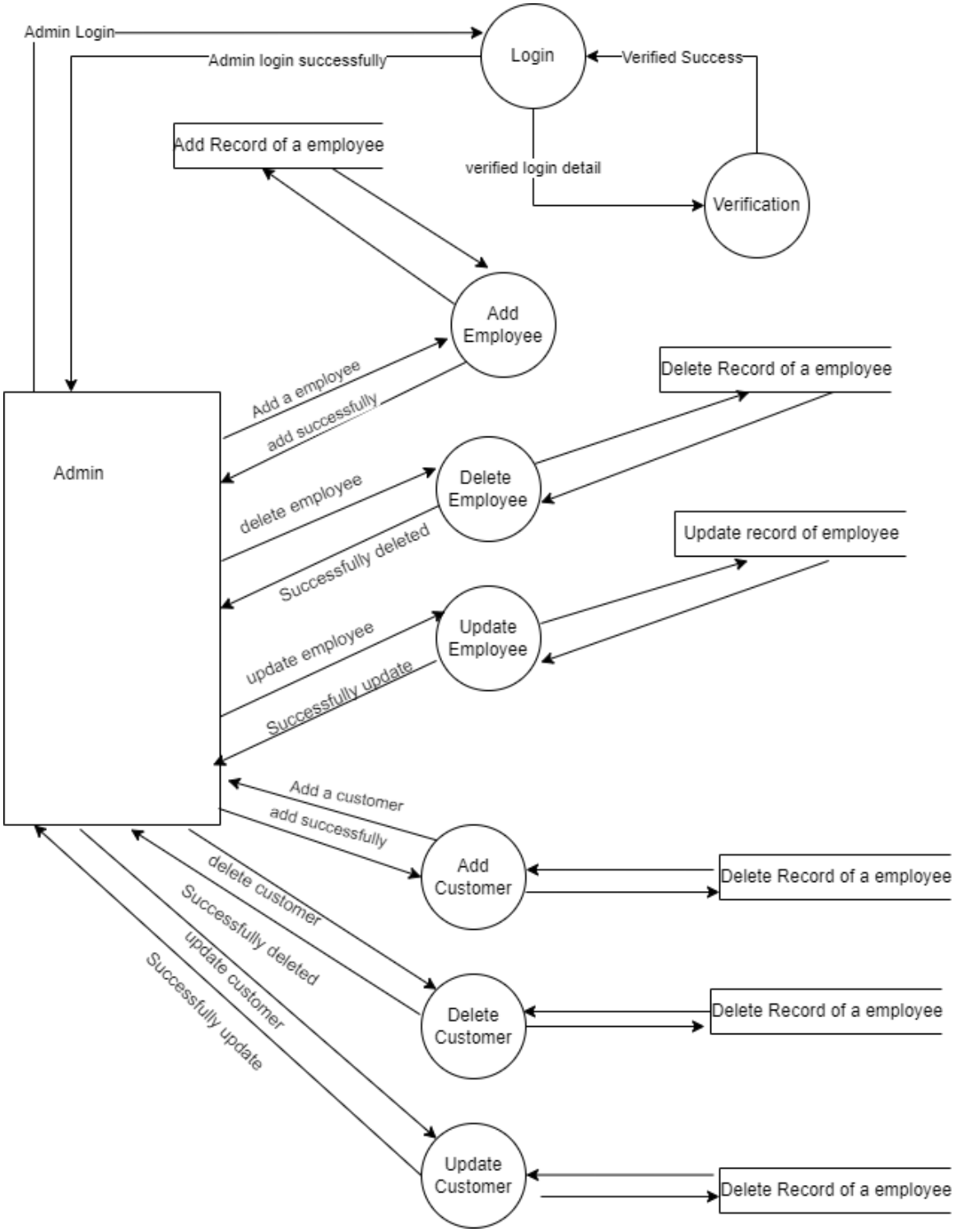
Constraint Requirements Description

Constraint Req. ID #	Function Name	Constraint Requirement Description	Software Requirement
DOM 1	Employees or customers record or history	This software should be able to save the history and record or the customers and employees	2

Activity diagram:

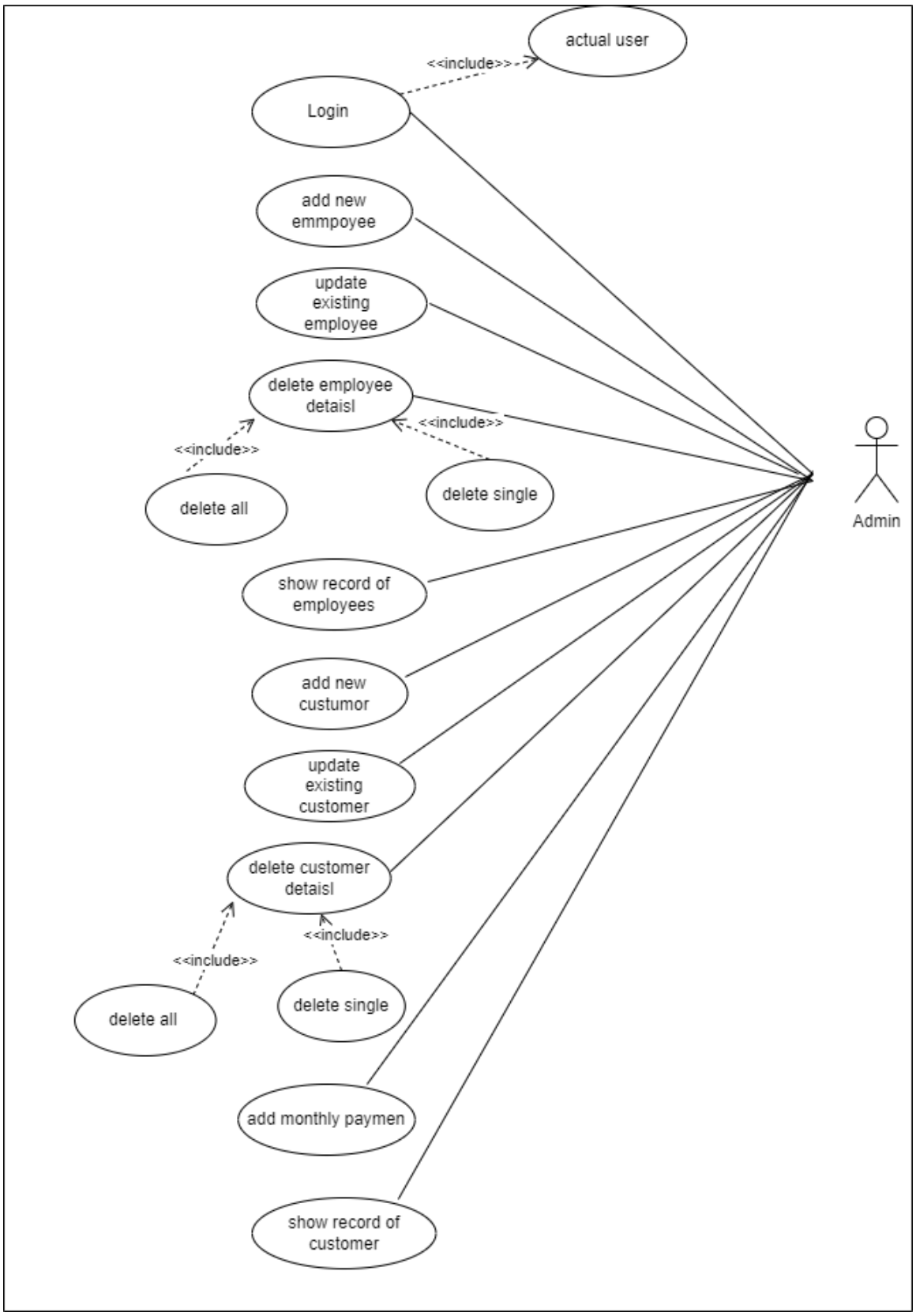


DFD(level 2)



Use Case diagram:

1. Use case diagram



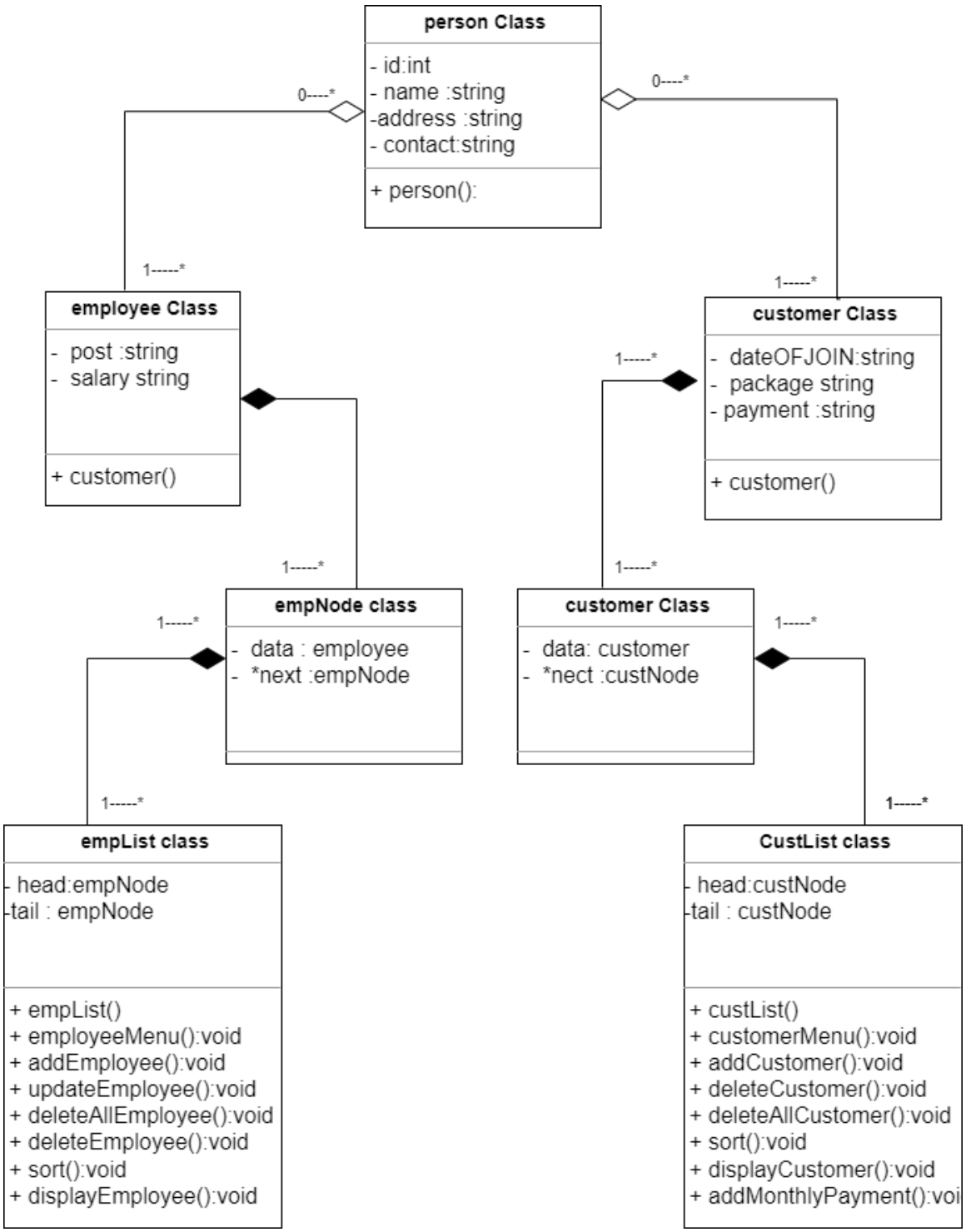
2.Textual use case diageram

Use Case ID	UC 001
Use Case Name	Login
Actor	Admin
Basic Flow	This use case allows the actor to login into the system. The actor will enter the login credentials and then press the login button to login into the system if actor is Admin he will be taken to main menu then the actor choose the one he will be taken to main menu then the actor choose the one of the two side the one side is customer site and the other is employees.
Precondition	The actor must have login username and password.
Alternative Flow 1	If login credentials entered by the actors are not correct the system will prompt him/her to Login again.

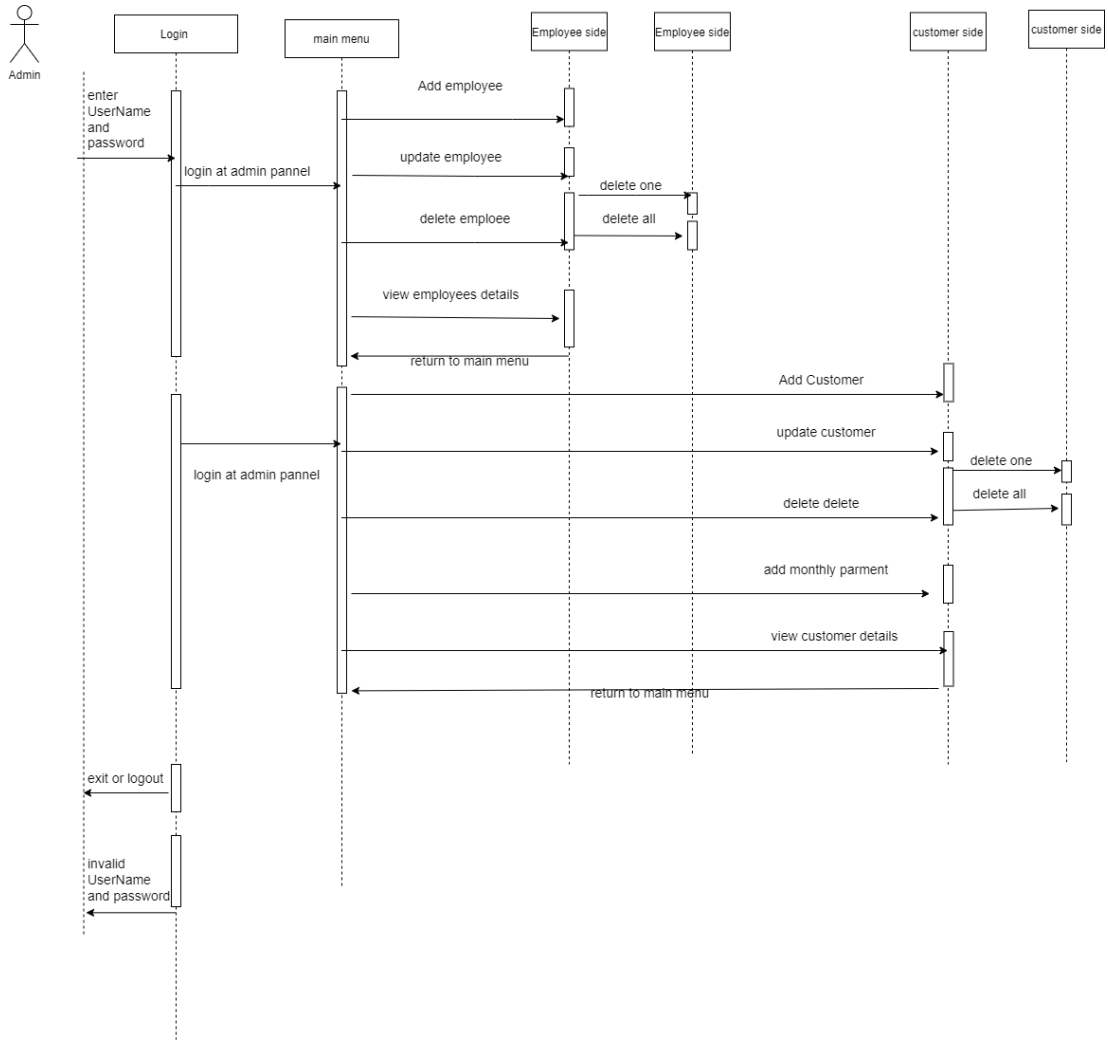
Use Case ID	UC 002
Use Case Name	Add customer record to system
Actor	Admin
Basic Flow	This use case allows the admin to add and delete record of the customer. The admin also updates the record of the customer if the record is present.
Precondition	The admin must have logged in to the system.
Alternative Flow 1	Instead of repeatedly deleting customer records, the actor can delete all the data at once.

Use Case ID	UC 003
Use Case Name	Add Employees record to system
Actor	Admin
Basic Flow	This use case allows the admin to add and delete record of the employees. The admin also updates the record of the employee if the record is present.
Precondition	The admin must have logged in to the system.
Alternative Flow 1	Instead of repeatedly deleting employee records, the actor can delete all the data at once.

Class diagram:



Sequence Diagram:



CONCLUSION:

This project provide a huge benefit to a company who can save the record of their employees as well as customers. This project is proved to a user friendly and efficient in achieving basic goals. The project is developed in such a way that a user with common knowledge can be easily use it. We try our best to make it realistic and secure.The final goal of the project was twofold. I would also like to this report should be self-contained and contain all the information that is relevant to your project.