System Analysis and Design

Group Assignment

Client

Ceylinco General Insurance (Nugegoda Branch)

system

Fingerprint Attendance System

18.2 (Plymouth) Batch (Group No.6)

Group Members

Name	Student ID
H.S. Manawadu	10026581
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D.T.Livera	10026992
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1. Chapter 01.

1. Client overview

Ceylinco General Insurance limited (Nugegoda branch)

The Ceylinco General Insurance have served the people over 25 years and yet the history can be traced back as 1939.the company originally registered as the Ceylon insurance company which was in fact the first Ceylonese company ever registered.

- Location : No.126 C,3rd Floor, High level road, Nugegoda
- Tel: +94 114306796
- Email: cicnu@ceyins.lk

2. Scope of study

1. Internal Environment

Managing director

- Motor Department
- Non motor
- Claiming
- Financial Services

2. External Environment

- Customers
- Banks

3. System boundary

• Registry keeping

• Documentation

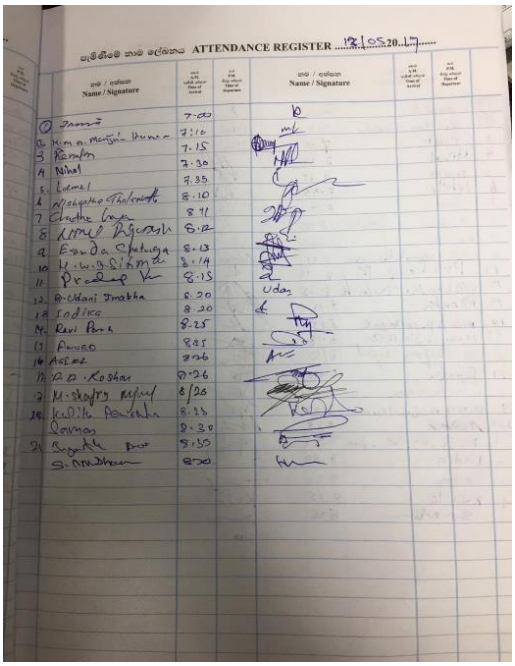
4. Automated boundary

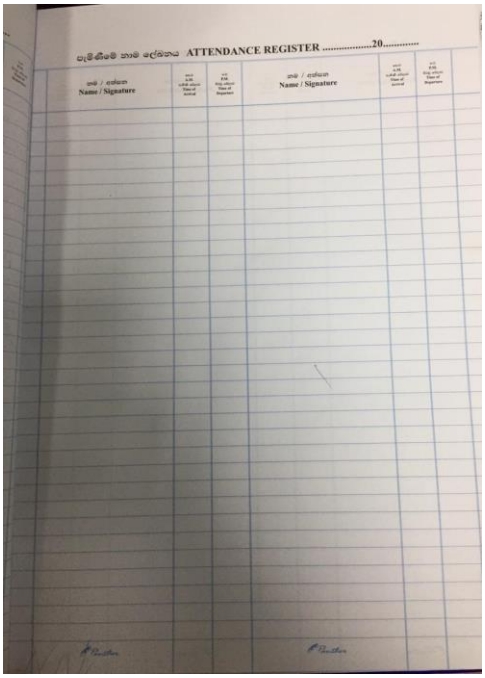
Currently there is no fully automated system boundary. They are currently using "Attendance Registry " system for data entries.

3. Details of the existing system

Existing attendance system is fully manually system. Here the attendance will be carried out in the handwritten registers. The human effort is more here. The retrieval of the information is not easy as the records are maintained in the handwritten registers.

The application requires correct feed on input into respective field suppose the wrong input are entered ,the application resist work. So, the user finds it difficult to use





4. Drawbacks of the existing system

More time devoted to payroll: With a manual time and attendance program, you spend more time processing payroll. You'll find yourself faxing, emailing, and tracking down employees to verify hours. This takes time out of your busy day, hours you could be devoting to more important tasks. An automated system will keep track as you go, providing you information in real time. When it's time to do payroll, you'll just need to click a button.

Time theft: When you track time and attendance manually, you open up your business to time theft. Time theft can include things like employees taking longer lunches without reporting them, reporting the wrong clock in or clock out times, or even having other colleagues clock them in and out. With an automated system, employees are held accountable.

Human error: Manual time and attendance processes are at a higher risk for human error. No one is perfect, and that includes your accounting and payroll department. Just one misplaced digit can lead to costly errors. An automated system won't let that happen.

More time spent answering employee questions: With outdated processes, your employees have no access to their accrued sick days and vacation time. To find out how much they have available, they will always need to ask you, or someone in human resources. With an automated system, that information would be at their fingertips.

Breaking labor laws: State and federal labor laws are always changing. With an outdated, manual system, you'll be in charge of looking up those laws, whereas an automated system would update you and keep track of all changes.

Growth: As your business grows, you'll have to scurry to keep up when you use a manual system to track time and attendance. Automated systems, on the other hand, grow with your business. As your business grows, automated software can manage new employees and keep you on track as your business grows.

5. Details of the proposed system

The proposed system is a fully computerized “fingerprint attendance system” which handles all the attendance , which were previously handled by the existing manual system.
The system will utilize computers at the office to replace the manual work.
It will also utilize a centralized database to store all the attendance data,
which in the current manual system are stored in files & logbooks stacked in cupboards.
Not only these, this system will take care of the paperwork that’s done throughout the existing manual system and will take out
the data redundancy that occurs in the existing system with its centralized data base approach as well.

6. Expected benefits from the proposed system

• Improved upgradability of the system.

• The safety of the data is significantly improved than in the current system.

• The ability to make data backups significantly quicker than the manual system.

• Minimizing the employee stress & time consume.

• Due to the centralized approach, the data redundancy is eliminated.

• Since the data is stored in a centralized system, it’s much easier to review the entered data by the authorized persons.

2. Chapter 02

1. Fact Finding Methods

With our client Ceylinco General Insurance Limited , we did it through investigation of the current attendance system by using fact finding methods.

1. Interviews

To gather information of the company we conducted three interviews for aiming three operational levels of the company.

1. Top Management
2. Middle Management
3. Operational Staff

We designed different interview questions separately for three levels.

Top Management

- Conduct with: Janaka Ravindra (Branch Manager)
- Date: 14 th May 2019
- Venue: Ceylinco General Insurance, Nugegoda

As a managing director of Ceylinco General Insurance, Nugegoda Mr. supported our team with his maximum.
He acknowledged us about the requirements of the company, and he directed us to the relevant personals.

Middle Management

- Conduct with: R.M Amerasinghe Bandara(Manager-Financial Services)
- Date: 14 th May 2019
- Venue: Ceylinco General Insurance, Nugegoda

R.M Amerasinghe Bandara who the Manager-Financial Services of the branch is passionately answered our questions.
He provided us all the information that we needed to attendance registry, salary calculation, special bonuses, recruiting employees and the excel sheet method that's being used currently in the branch, with the necessary documents.
He also agreed to provide further assistance if required.

Operational Staff

- Conduct with: U.I. Nilmini
- Date: 14 th May 2019 / 13 th June 2019
- Venue: Ceylinco General Insurance, Nugegoda

We met Mrs. U.I. Nilmini, who is one of the main assistant accountants in the company. She too passionately provided us descriptive answers for our questions and explained to us the problems that occur when using the existing system.
She mentioned the need for a better system and was very interested in our project.

2. Questionnaires

we conducted questionnaires by designing a questionnaire forms and distributing them through all staff members.

Questionnaires follow-up

Fingerprint Attendance System

Feedback Questionnaire form

Employee Name: .....

Department Name: .....

Questions	Strongly Agree	Agree	Uncertain /Not applicable	Disagree	Strongly Disagree
1. Are you satisfied with the current attendance system which you are using with?					
2. Is there are lot of paper works in the current system?					
3. Do you like to have any individual profile for each department?					
4. Do you think there are security problem with the current system?					
5. Do you like to have a guideline about the system?					
6. Do you like to use the newly proposed system?					

Do you have any suggestions for the improvement of new system?

Questionnaires Summary

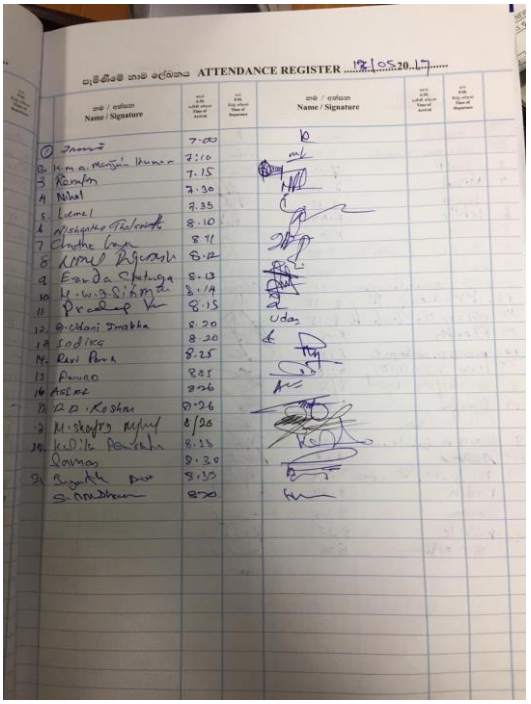
Currently, the company is using a manual attendance system for the stuff. They use and outdated attendance registry.

Response type	Question 01	Question 02	Question 03	Question 04	Question 05	Question 06	Question 07
strongly agree	20%	0	0	40%	20%	60%	0
Agree	80%	20%	40%	60%	80%	40%	20%
uncertain/ not applicable	0	20%	0	0	0	0	0
Disagree	0	40%	60%	0	0	0	80%
strongly disagree	0	20%	0	0	0	0	0

3. Observations

➤We done our observation by looking at their daily routine without any disturbances.

➤ Roughly there are more than 70 office staff



4. Documentary review

How documents handle in existing system

➤ *Existing Attendance system is a fully manual system.*

➤*The copy of the attendance sheet is sent to the head office through email by the Manager.*

2. Functional Requirements

- FINGERPRINT RECOGNITION

The thumb scanner will generate the thumb code for the received impression. The generated code is matched with the stored thumb code in the database. If there is no match for the generated code an error message will be displayed.

- ATTENDANCE CALCULATION

The attendance is marked for the matched impressions. The time duration between Intime and out time is calculated The time duration is stored as hours worked by the employee. Each time when the out time is marked the duration is calculated and hours worked (field) is updated.

- PAYROLL CALCULATION

The leave taken by the employee is calculated as loss of pay.
The loss of pay will be used to calculate net pay for the employee.
Salary calculation includes monthly attendance, loss of pay, the allowance.

3. Nonfunctional Requirements

1) Performance: Performance should be higher than existing manual system.

2) Flexibility: The system must flexible for fulfill user needs and further developments in future

3) User friendliness: The computerized system should increase user friendliness to users.

4) Security: The system must include security for safeness of the company.

5) Maintainability: The system should flexible to maintain by adding or removing feature according to the user opinion.

4. Budget

- 1- Personal computer =75,000
- Windows 7 or Higher =12,000
- Fingerprint Reader =18,000
- LCD Monitor = 5,000
- Number Panel = 4,000
- Arduino Equipment's =10,000
- Software Building and Design cost =65,000

Total Rs. 195,000

5. Constrains and risk involved

- Some Respective Unions of employees does not like Computerized Attendance system because it is very strict. With this system no one can leave early by writing a wrong time and some employees are not liking it

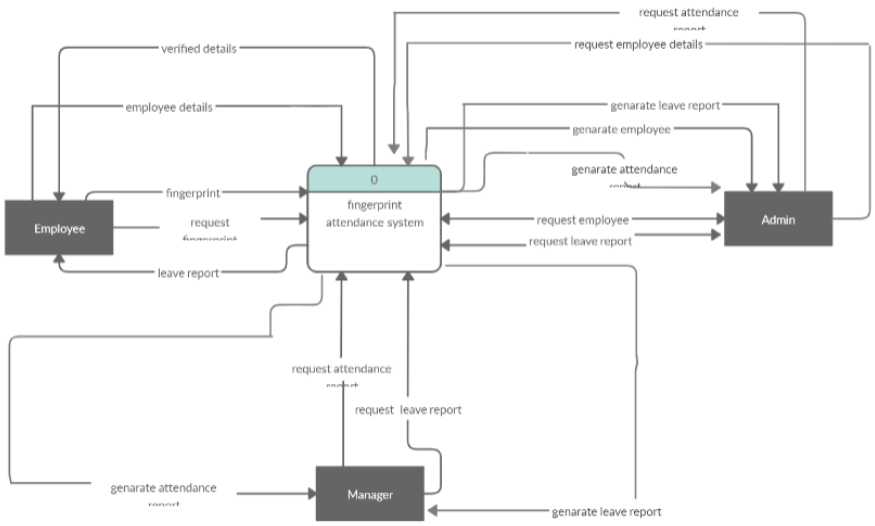
- The fingerprint system may not be able to register some users, as the fingerprint image does not contain enough fingerprint patterns for good quality verification

- The fingerprint system could register some users however after they attempt to verify their finger, it fails or false matches with other's finger. At the time of registration, the fingerprint scanner could have registered the low-quality image however later it doesn't match with the finger pictures captured at the time of verification.

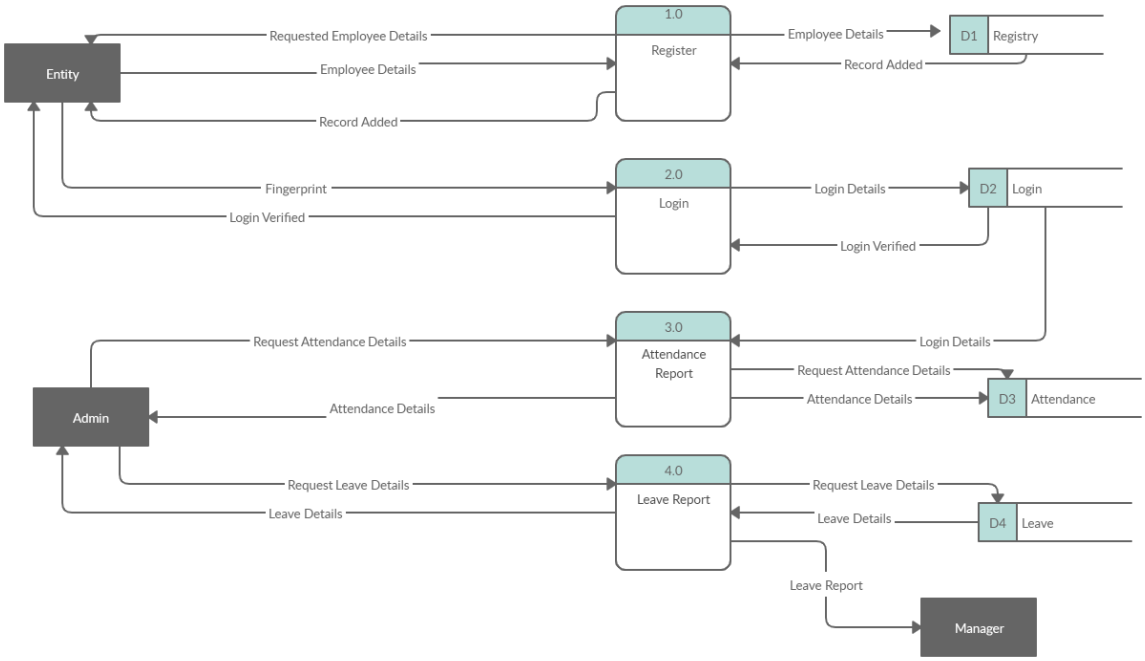
3. Chapter 03

1. Data flow diagrams

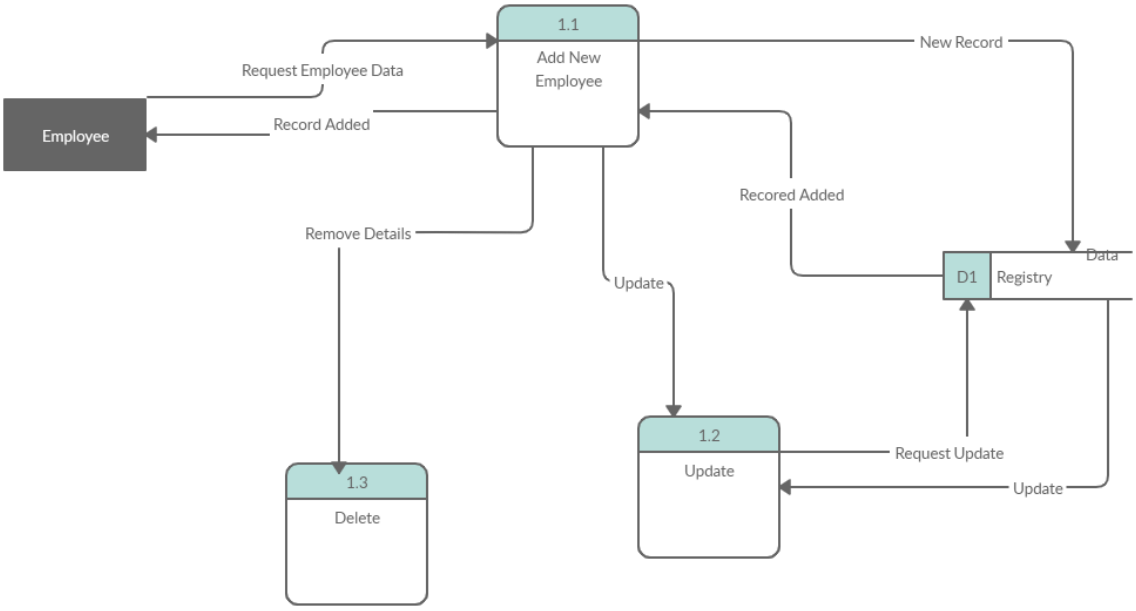
1. Context diagram

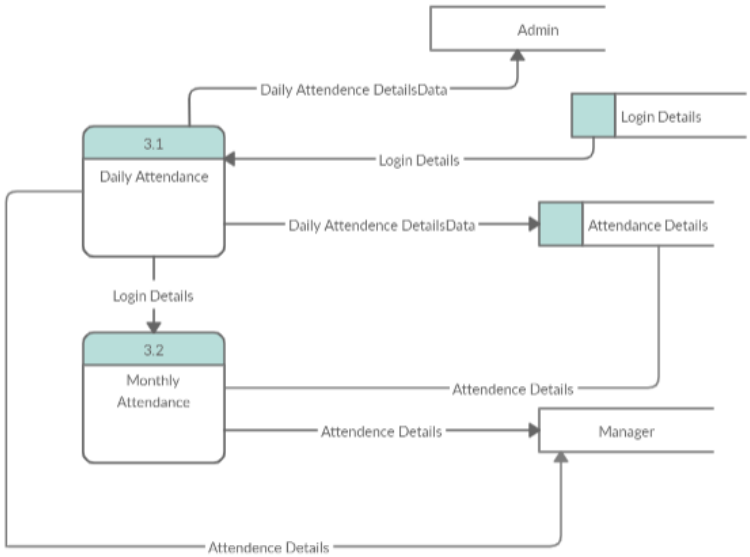


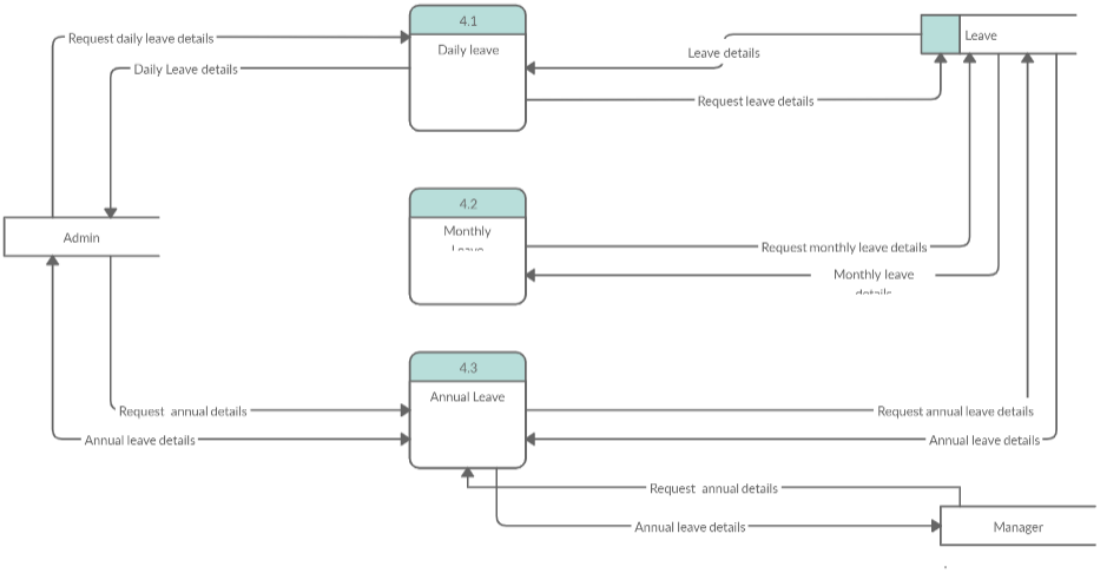
2. Level 0 diagram



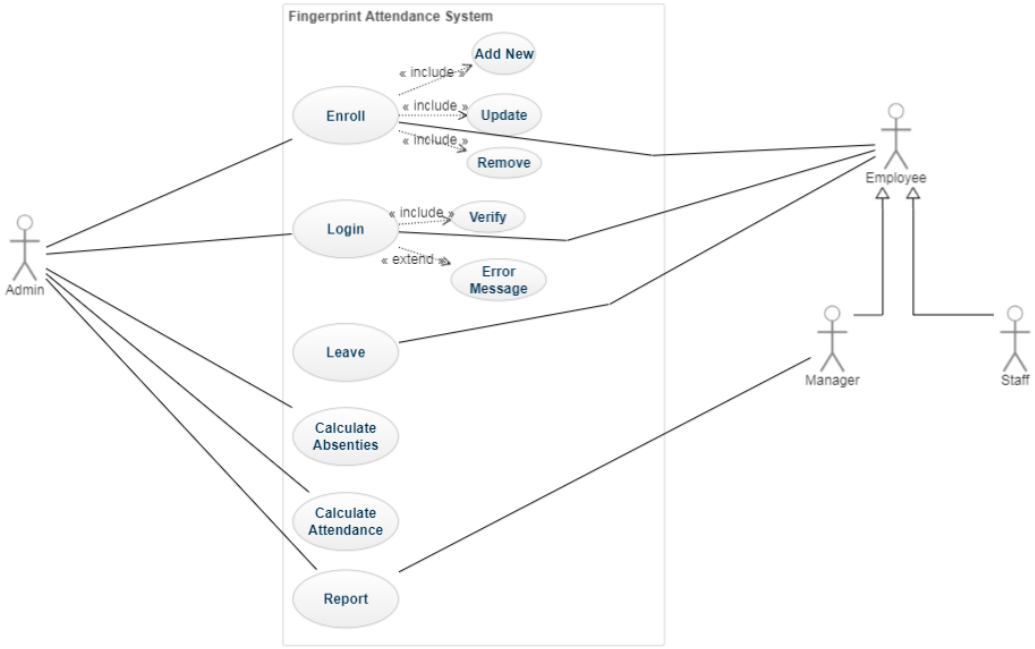
3. Level 1 diagram



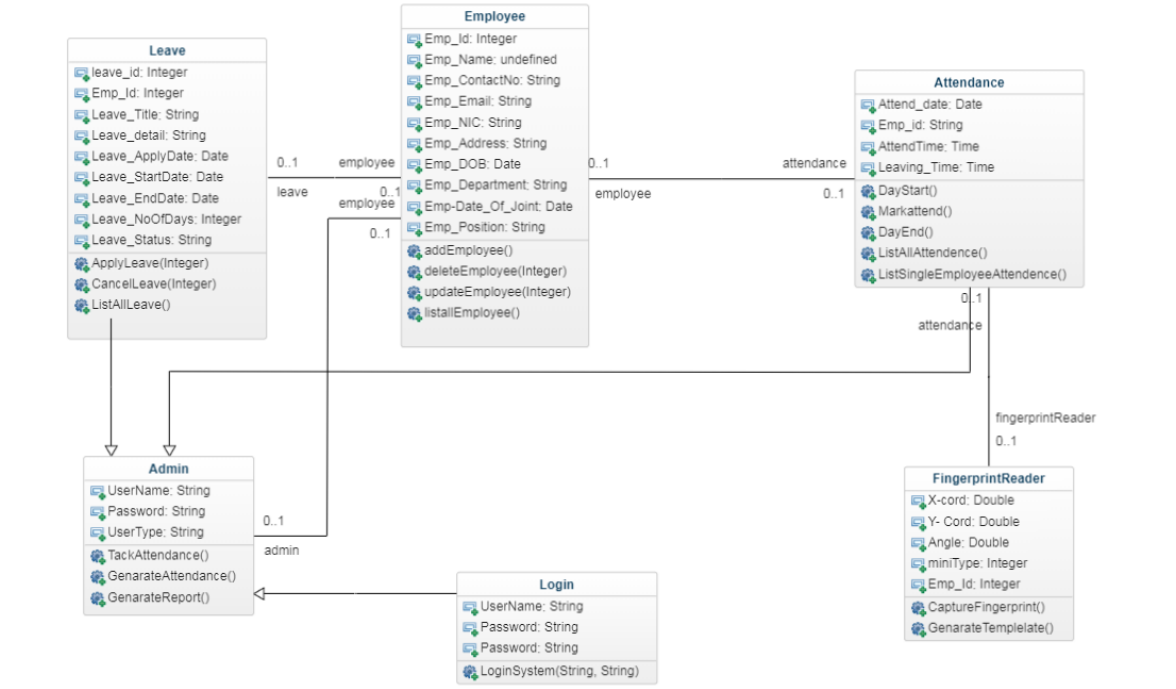

Admin
Daily Attendence DetailsData
Login Details
3.1
Daily Attendance
Login Details
Daily Attendence DetailsData
Attendance Details
Login Details
3.2
Monthly
Attendance
Attendence Details
Attendence Details
Manager
Attendence Details


Request daily leave details
Daily Leave details
4.1
Daily leave
Leave details
Request leave details
Leave
Admin
4.2
Monthly
Request monthly leave details
Monthly leave
Request annual details
Annual leave details
4.3
Annual Leave
Request annual leave details
Annual leave details
Request annual details
Annual leave details
Manager

2. Use Case diagram



3. Class Diagram



4. Workload matrix

SE103.3 - System Analysis and Design
Workload Matrix

Person ID	Task Completed by each member	Signature
10026581	Chapter 01,Chapter 02,DFD Level 0,Level 1	
10026735	Chapter 02,Questionnaire	
10026988	Chapter 01,Chapter 02,Questionnaire, DFD Level 0,Level 1	
10026992	Chapter 01,Final report printout	
10027015	DFD Context Diagram, Use Case diagram, Class Diagram, Final Report	

5. Appendixes

BSc in (Plymouth) Degree Program 18.1/18.2
1st Year – 2nd Semester
SE103.3 - System Analysis and Design
Group Assignment

Batch : .....18.2.....

Person ID	Student Name
10026581	H.S. Manawadu
10026735	D.M.A.N. Sanjula
10026988	H.M.C.J. Bandara
10026992	D.T.Livera
10027015	S.W. Wijesinghe

This is to certify that the above mentioned students were visited our organization/ department to collect information to conduct their group assignment of System Analysis and Design module.

Details of the Organization

Name of the Organization :...Ceylinco General Insurance (Nugegoda Branch).....

Name of the Department : Accounts Department

Details of the Authorized Officer

Name of the Officer : W. I. Nilmini

Designation : Assistant Accountant

Signature : W.I.Perera

Date : 13.06.2019

Contact Number : 0773587805

E-mail address : cienuact@ceyins.lk

(Note: Add the rubber stamp of the authorized officer)

For R. M. AMARASINGHE BANDARA
Manager - Financial Services
No 79, Stanley Thilakarathna Mw.
Nugegoda
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Mobile: 0773959873