CHAPTER - 1
INTRODUCTION

1. Introduction

1.1 Project Profile:

Project Name : Smart Society
Project Type : UDP
Development Team : RACHIT BHANAGE (140413107003)
BHUSHAN JOSHI (140413107009)
NAKUL PATEL (140413107013)
JAY UNEWAL (140413107025)
Internal Guide : Prof. Shrina Patel

Tools & Technology: MVC .Net , CSS, JavaScript, HTML, jQuery, Android, JSON, XML, Visual Studio, Android Studio

1.2 Problem Summary:

Currently, there are lot of problems occurring in a commercial society. Problems like:

- Improper management
- Lack of proper resources • Insecurity
- Opaque bill management
- Unknown vendors in the area
- Unknown residents nearby

To solve these problems, we have tried to provide best possible software called Smart Society.

Smart society is and internet based solution for the end to end management of commercial and housing societies. It is a Web based plus Android based platform for the management of residents and staff, who can only see the information that they require. Through computerized management of resources and timely data, smart society helps in reduction of time, efforts and manual paperwork, leading to lowering overall costs of managing commercial society.

1.3 Aim and Objectives of the project:

AIM:

- The main objective of the project is to design and develop a user friendly ecosystem making tasks of members easy and productive.
- Reduction in manual paperwork.
- Easy to use and efficient computerized automated system.
- Computerized automation can be helpful as means of saving time & money.
- To provide better graphical user interface in.
- Portable application which can be accessed from anywhere.
- A secure system for household purpose providing good security features

Objective:

- The objective of the "Smart Society" is to provide a system which handles the information of the residents of a commercial housing society.
- Providing the residents, a system for using the resources of the society efficiently like booking an asset of the society for a private or public use, checking the vendors available for society, visitor's information etc.

1.4 Problem Specification:

Today's societies are working manually. The current system is costly and time consuming as it involves a lot of manual paper work which is tedious and tiring.

As we have computerization and automation it is possible to make a system for solving the mentioned problems.

The following are the reasons why the current system should be computerized:

- Recording details of each and every member and staff consumes time.
- It is very difficult to maintain the visitor log information.
- The records are manually maintained which consumes time and energy.
- Lot of paper work is involved as the records are maintained in the registers
- Less efficiency and costly.
- As files and registers are used the they are vulnerable to environmental calamities as they can wear and tear.
- Also files and registers uses lot of space.
- Use of papers for storing valuable data information is not at all reliable.
- Manual systems mean increased human error.
- Manual collection of society maintenance payments is tiring job for the secretary.

1.5 Existing System and Proposed System Comparison:

Drawbacks of Existing System:

- Time consuming.
- Updating and Retrieval tasks are very tedious and tiring.
- Vulnerable to errors.
- Less social.
- Lot of paper work results in lot of confusion.
- No direct role for the higher officials.
- Zero transparency in expenditures of the maintenance cheques.

To avoid all these limitations and make the system working more accurately it needs to be computerized.

Merits of Proposed System:

The system is very simple in design and to implement. The system requires Very low system resources and the system will work in almost all Configurations.

Merits are:

- Security of data and residents/members
- Ensure data accuracy
- Administrator and secretary controls the entire system
- Portable
- E-notice generation.
- Online payments
- Error prone
- Proper event management of assets of society
- Proper Visitor log generation for increased security
- Direct Connection with the security guards for increased security
- Minimize manual data entry
- Greater efficiency
- User friendly and interactive
- Time saving
- Retrieval and Updating tasks can be performed much faster and easier

CHAPTER - 2

DESIGN ANALYSIS, DESIGN METHODOLOGY AND IMPLEMENTATION STRATEGY

2. Design analysis, Design Methodology and Implementation Strategy

2.1 Requirement Gathering

2.1.1 Functional Requirement

- **Wing configuration and Unit configuration**
  - Create a new wing
  - Configure wing information
  - Define a new unit within a wing
  - Manage all units
  - Browse units
  - Remove wing
  - Remove unit
- **Customer account setup and Unit association**
  - Register through Mobile App
  - Show registration status
  - Approve registration and associate unit
  - Login by customer login
  - View my profile
  - Edit my profile
- **Service catalogue configuration**
  - Create a new service type for
  - Manage service type
  - Remove service type
  - List view of services
  - Grid view of services
- **Service provider configuration and browsing**
  - Select a service type
  - Add new service provider
  - Upload a photo of a service provider
  - Browse service provider list
  - Remove/upload service provider profile
  - View provider profile with photo and pricing
  - Call the provider
  - Send message to provider
- **Service selection and reviews**
  - View all units who have selected a service provider
  - View user reviews for provider
  - Select a service
  - Write review for provider
  - Remove service selection
- **Secretary configuration and note generation**
  - Appoint a customer as secretary
  - Select wing for secretary

    - Generate a system notice
    - Attach optional photo to notice
    - Send notice to all members
    - View/download notice photo
- **Group event invitations and configuration**
    - create a new group event
    - send invitation to all members
    - member's confirmation
    - summary report to secretary
    - graphical report for confirmation
- **Amenities configuration, usage and registration**
    - Amenities creation with capacity, space and pricing
    - Photo upload for amenity
    - Amenity lookup and availability
    - Amenity reservation and configuration
    - Daily schedule/ monthly schedule
- **Visitor logs and photo check-ins**
    - Watchman visitor check-in
    - Visitor's photo from app and upload
    - Visitor vehicle number and count with unit
    - Time based check-in
    - Visitor checkout
    - Visitor history report
- **Watchman account configuration**
    - create a new watchman account
    - configure mobile number and details
    - view all watchmen
    - call a watchman
    - upload photo of watchman
    - view photo of watchman

2.1.2 Non-Functional Requirement

Reliability

- User can be able to access system if he/she is an authorized one.
- Service providers and services available are reliable.

Maintainability

- Bugs should be fixed in a quick amount of time when reported.
- Changes, if any, in the schema/data, should be easy to update and alter.

Performance

- For very large number of users, the server should be able to handle requests efficiently.
- Data Storing and Retrieval should be quick.
- The system must be interactive and the delays involved must be less .

Security

- Only authorized users must be able to view the visitor log, events and services etc.
- Only the secretary who is authorized can update the notice and circulars.
- Data such as password and personal details are in encrypted.

Scalability

- The system can be implemented from a small scale to a large scale.

Safety

- Information transmission should be securely transmitted to server without any changes in information.

2.1.3 Hardware and Software Requirement

The following Software's required to fulfil the requirement for our application for development

Minimum Software Configuration

OS	Windows 10, Android 4.0.3
Front End	Microsoft visual studio 15
Back End	MS SQL 2012 or above
Web Server	Microsoft IIS
Supportive Development Tools	Microsoft Word 2010
Browser	Chrome, opera

Minimum Hardware Configuration

Computer/Processor	Intel Core i5,2.60GHz
Memory	4.00GB RAM
Hard disk	500GB

2.2 STUDY OF FEASIBLITY

2.2.1 Technical Feasibility

The following technical feasibility areas were probed during the Feasibility study phase:

- The necessary technology i.e. front-end development tool, back-end database technologies are various tools for developing the system are already available within the organization.
- The front-end tool proposed is easily compatible with the current hardware configuration in the organization.
- The back-end tool proposed has the capacity to hold the data require for using the new system.
- The system is expandable in many dimensions with respect to addition of more functionality, features etc.
- The front-end and the back-end technologies provide a way to preserve the accuracy, reliability and ease of access and data security.
- Begin a web-based system; the system does not require to be installed on all client machines.

2.2.2 Time Feasibility

- The system is made in such a way that it takes less time in data processing and gives the result as fast as possible.
- Order evaluation is also done fast by estimating total money and recognizing receiver's address from database.

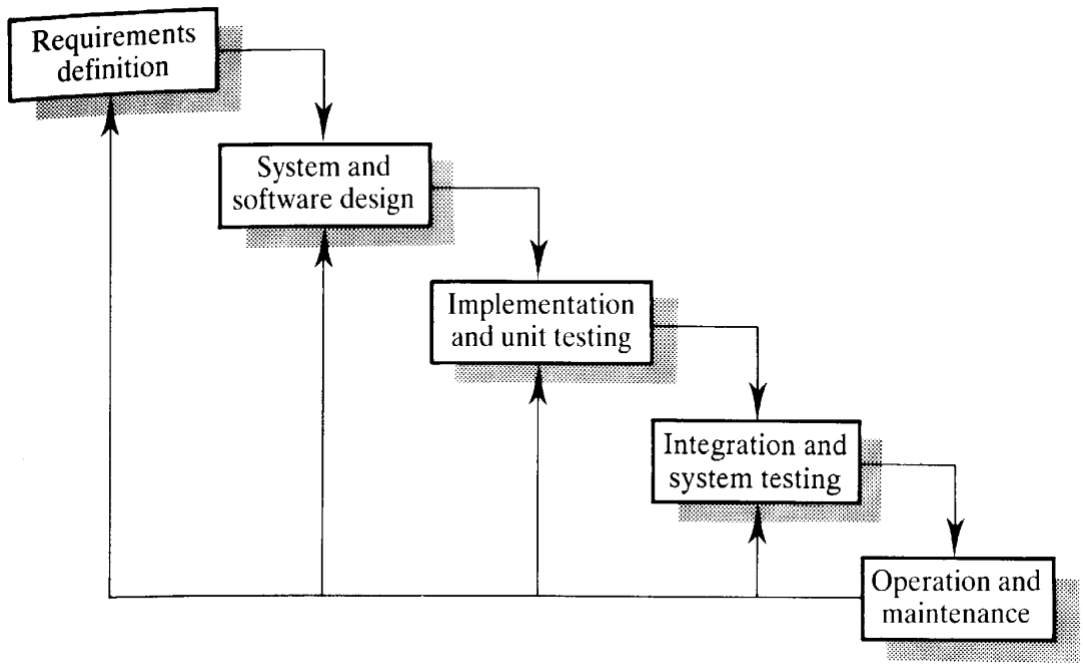
2.2.3 Economical Feasibility

- The purpose of the economic feasibility assessment is to determine the positive economic benefits to the organization that the proposed system will provide. The following are the benefits that would be derived from the proposed system.
- Speed up the archival of information in the form of corresponding between employees, Approval or disapproval of order etc. When necessary.

All this benefits in terms of saving time, minimization of error, etc. can improve the quality of software being development, since more time can be devoted to the development

2.3 SYSTEM DESIGN

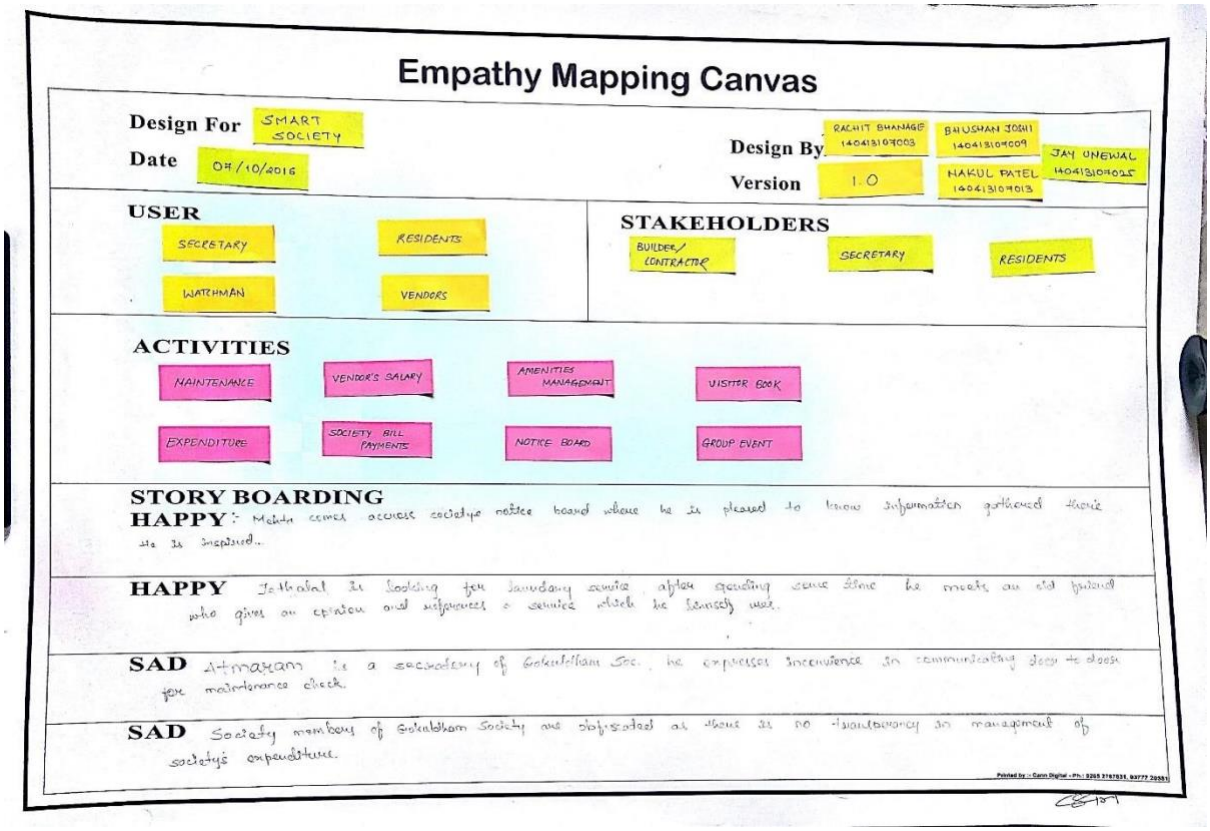
- Water Fall model has been revised later to be Iterative.
- Everything remains the same as Waterfall Model.
- It is easy to use.



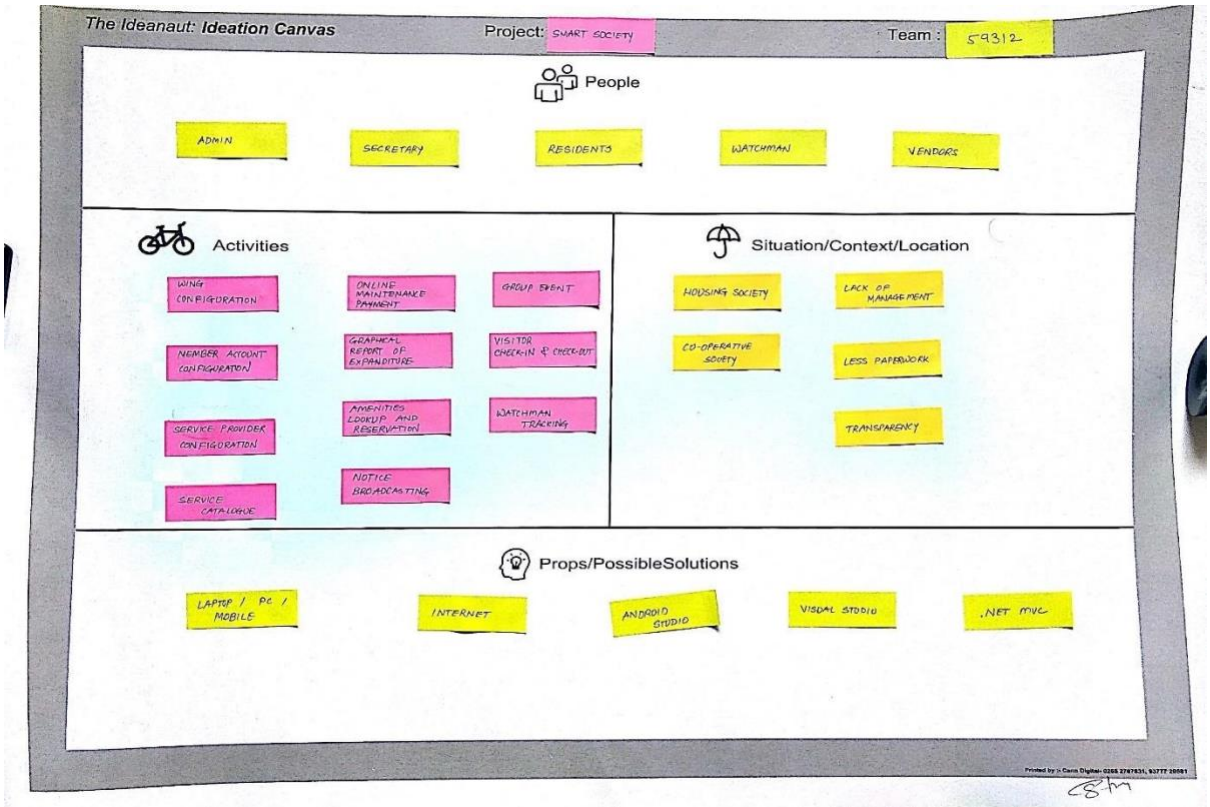
- Each iteration involves Design Analysis and Implementation as well as verification of the current build/version of the system.
- If the application lacks any requirements or has any problems then the phase will be looped back to previous iteration.
- It supports redesign, acceptance and review of any new requirement.
- It involves analysis of usability, achievement of goals, reliability, efficiency, and structure.

2.4 Canvases

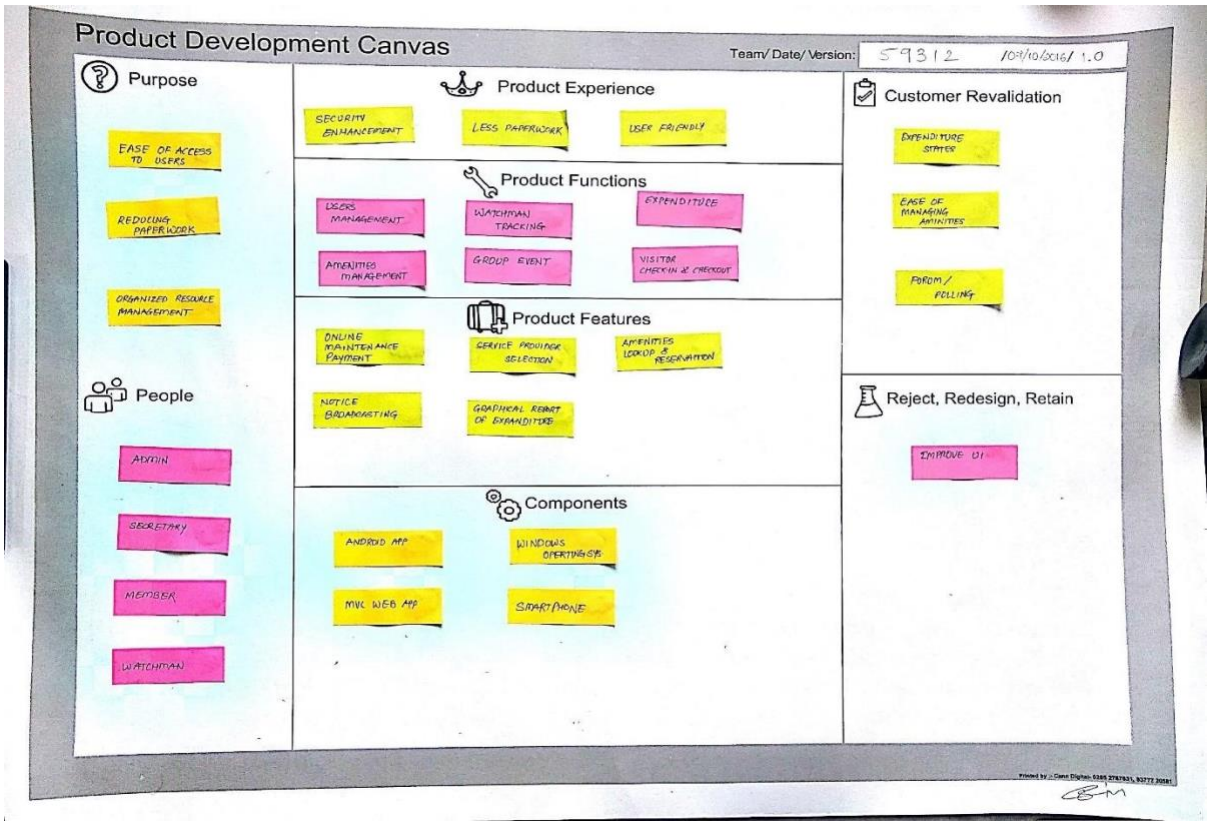
2.4.1 EMPATHY MAPPING CANVAS



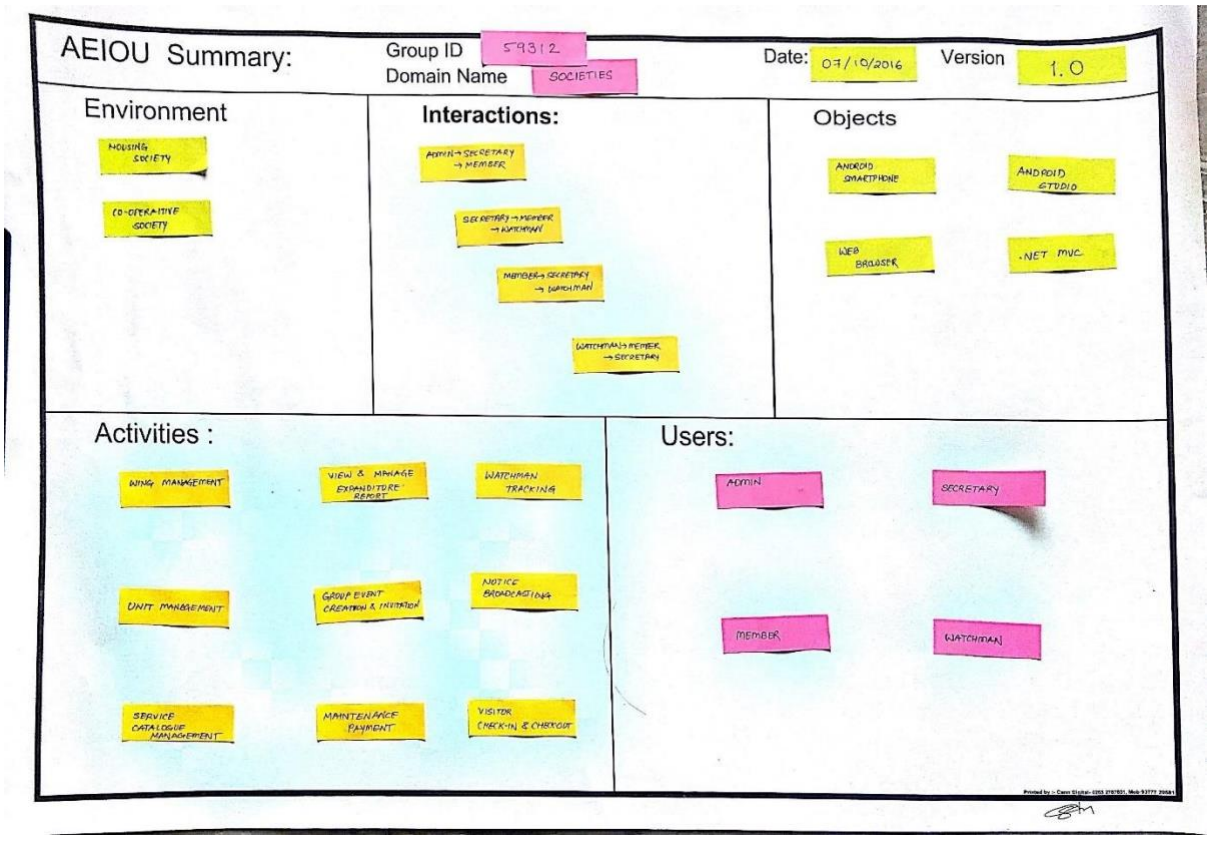
2.4.2 IDEATION CANVAS



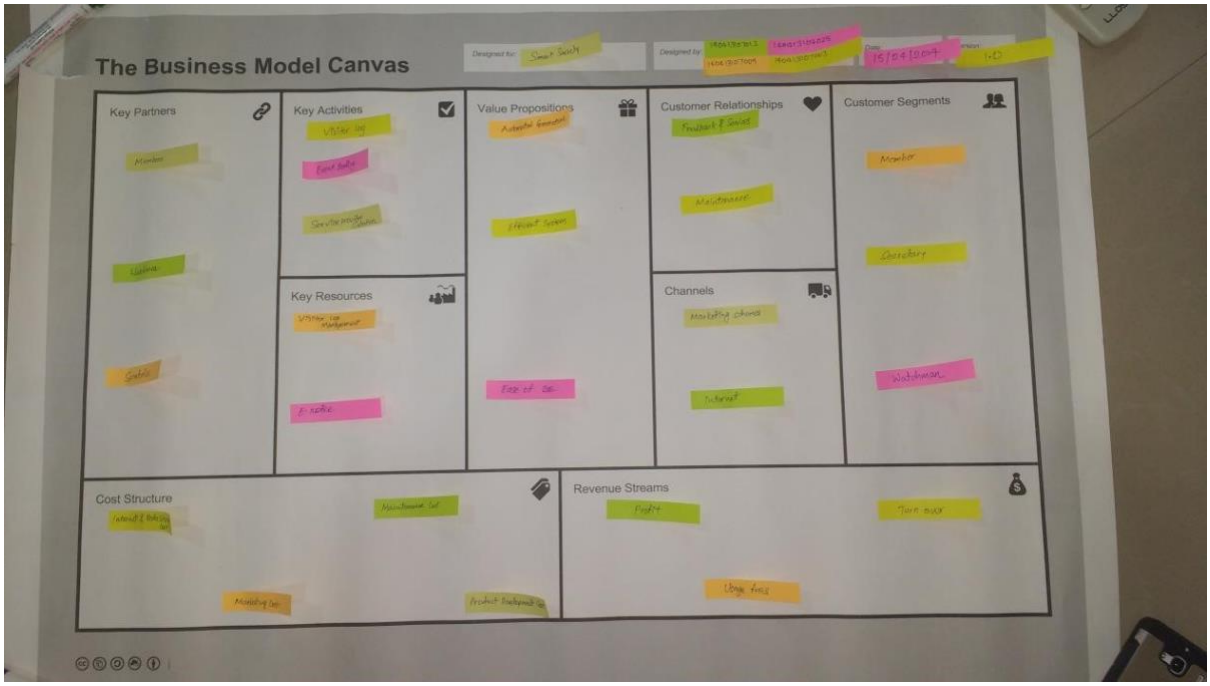
2.4.3 PRODUCT DEVELOPMENT CANVAS



2.4.4 AEIOU FRAMEWORK



2.4.5. BUSINESS MODEL CANVAS



The Business Model Canvas is a strategic management and lean start-up template for developing new or documenting existing business models. It is a visual chart with elements describing a company or product's value, infrastructure, customers, and finances. It assists firms in aligning their activities by illustrating potential trade-offs.

KEY PARTNERS

In order to optimize operations and reduce risks of a business model, organization usually cultivate buyer-supplier relationships so they can focus on their core activity. Complementary business alliances also can be considered through joint ventures, strategic alliances between competitors or non-competitors. The following constitute as our key partners:

- Members, Watchmen: The people who use the products and services produced by the business. Customer is the one who demands for goods and services.
- Secretaries: They provide the necessary details about the society layout, facilities and vendor details.

KEY ACTIVITIES

These are the crucial things the business needs to do in order to deliver on its propositions and make the rest of the business work. It includes maintaining superior expertise on the segment(s) and creating or acquiring products and services that are a good fit, whatever that entails. Similarly for an infrastructure business, it includes keeping the infrastructure working reliably and making it more efficient. The key activities of our business model are as follows:

- Visitor log: It is very important part of any residential or commercial area. To maintain all the records on your figure tap is the ultimate goal.

- Event booking: Residents of the society can post their events in the society App and book the amenities for the event and the secretary will approve or disapprove the event through the system.
- Service provider selection: Residents of the society can know all the service providers who provide different types of services to the other society members and can contact them as well.

KEY RESOURCES

These are the resources that are necessary to create value for the customer. They are considered an asset to a company, which are needed in order to sustain and support the business. These resources could be human, financial, physical and intellectual. The following are our key resources:

- Visitor log: Watchman will be able to check in and checkout of the visitor through the application only (no need for the paper). All the data will be stored on the server securely.
- E-notice: all the circulars and the general notices can be viewed with the image and the attachment by the members and can only be uploaded by the secretary or admin.

VALUE PROPOSITIONS

It includes problems and requirements of people, that we are going to solve and satisfy through our product and various reasons for which they would like to choose our product over the rest. The various value proposition of our product are as follows:

- Automated generation: Our system completely eliminates the manual system and provides an automated expenditure.
- Efficient system: High degree of efficiency as it removes the errors that manual efforts are prone to.
- Ease of use: removes unnecessary complexity and makes it very user friendly system to interact with.

CUSTOMER RELATIONSHIPS

When it comes in increasing profits, it's tempting to concentrate on making new sales or pursuing bigger accounts. But providing attention to your existing customers, no matter how small they are, is essential to keep your business thriving. The following will be our initiatives to build strong

- Feedback and Service: Take the feedback of customers about the product and provide support for the product in terms of servicing, part replacement, and warranties.
- Maintenance: It is a facility provided to repair damaged or faulty product of customer in minimum time period.

CHANNELS

An organization can reach its clients either through its own channels, partner channels or a combination of both. The channels which we may use are:

- Marketing Schemes: Marketing schemes mean different ways to represent the product in market so buyers gain interest.
- Internet

CUSTOMER SEGMENTS

This section mainly focuses on three things: Segment Dimensions, Segment composition and Problems, Needs, Habits & Current Alternatives.

- Members
- Secretary
- Watchman

COST STRUCTURE

- Product Development cost: It is the cost of production along with the initial investment in raw material.
- Maintenance cost: It is the cost of maintenance of all the equipment's, machinery and salary of employees.
- Marketing cost: It is the cost of marketing and advertisement of product.
- Internet and data storage cost: costs for the connection and data-storage.

REVENUE STREAMS

• Profits • Usage fees • Turn over

CHAPTER – 3

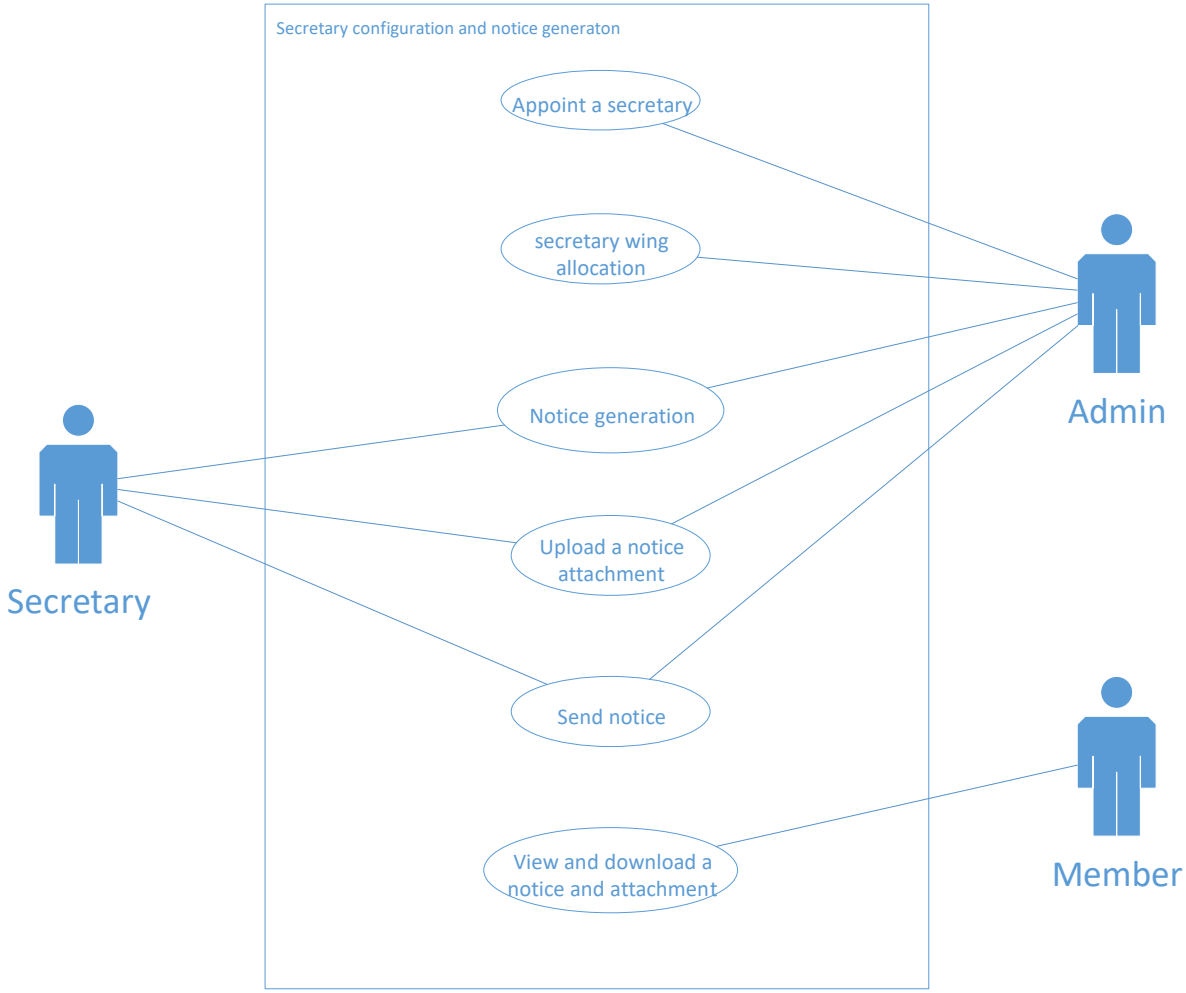
SYSTEM DESIGN & IMPLEMENTATION

3. SYSTEM DESIGN AND IMPLEMENTATION

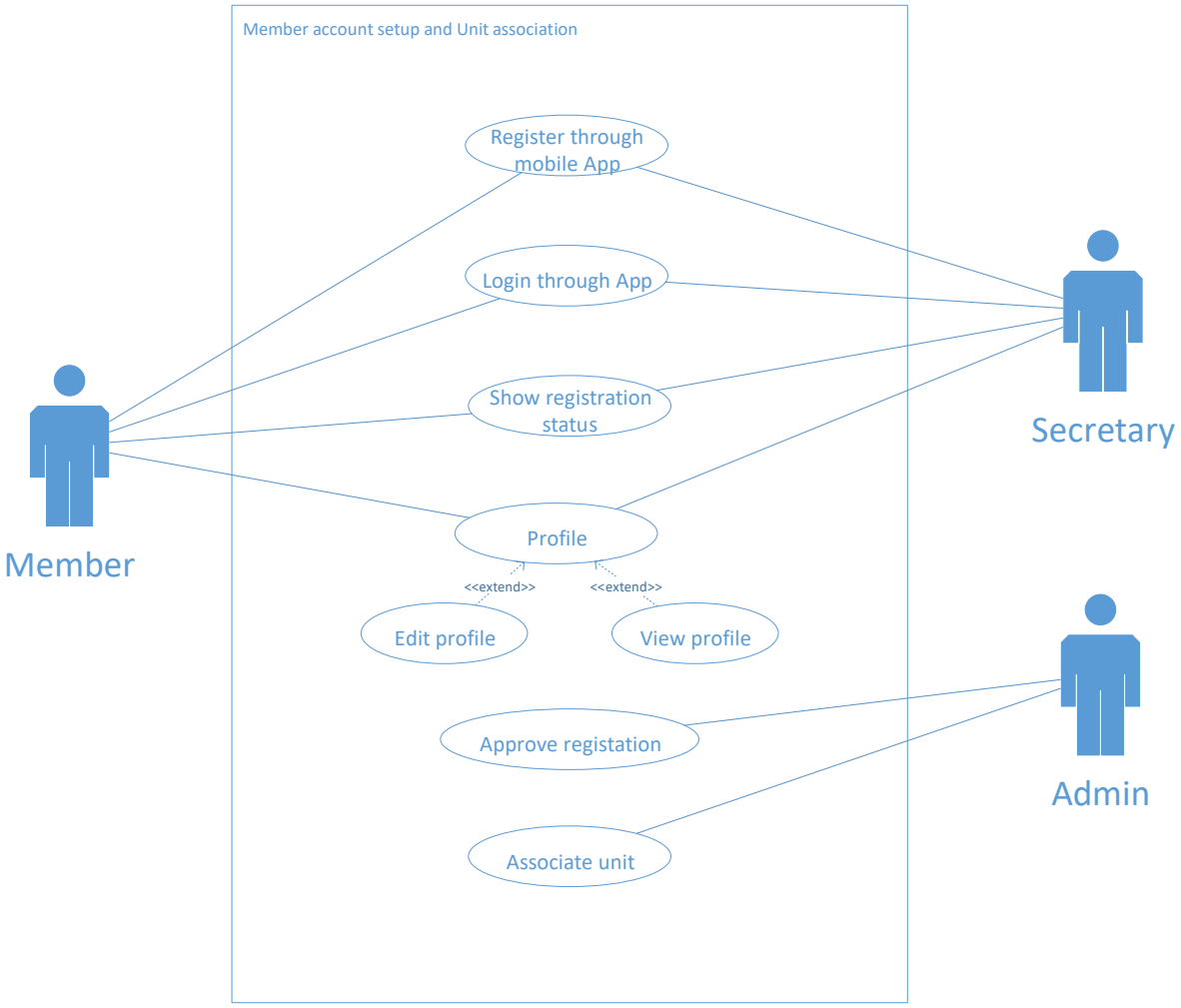
3.1 SYSTEM DIAGRAMS

3.1.1 Use Case Diagram

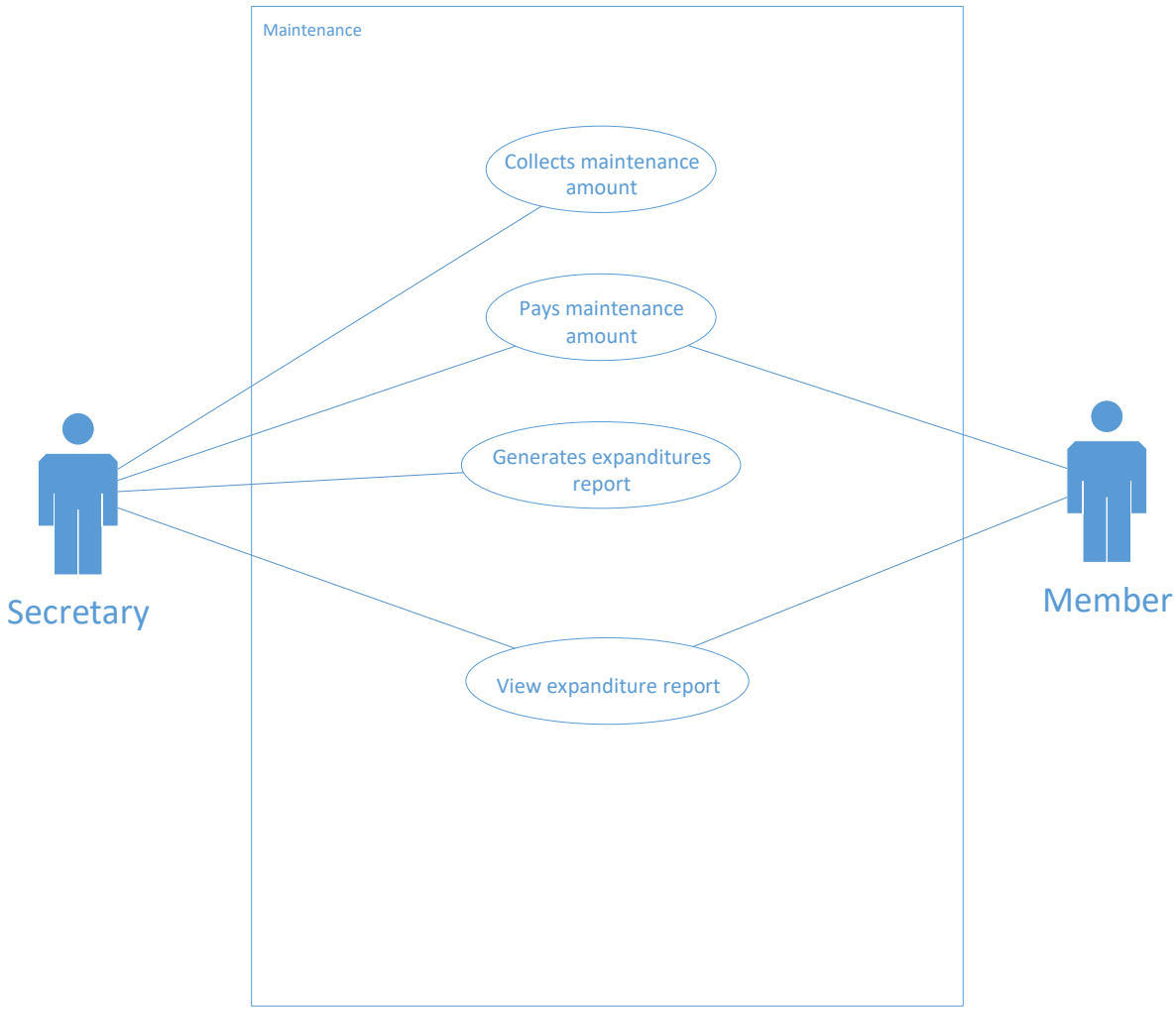
3.1.1.1 Secretary configuration and notice generation



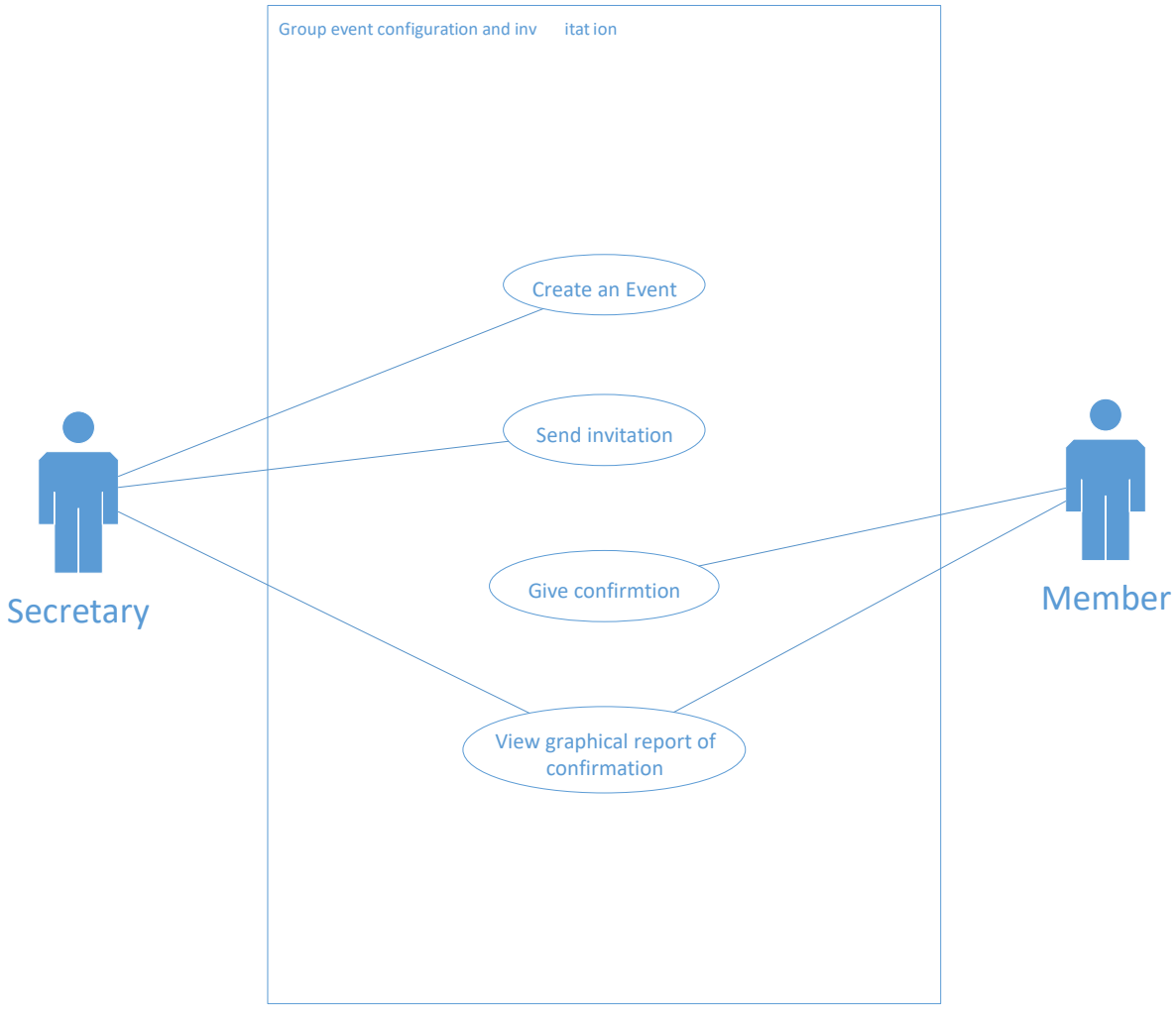
3.1.1.2 Member account setup and unit association



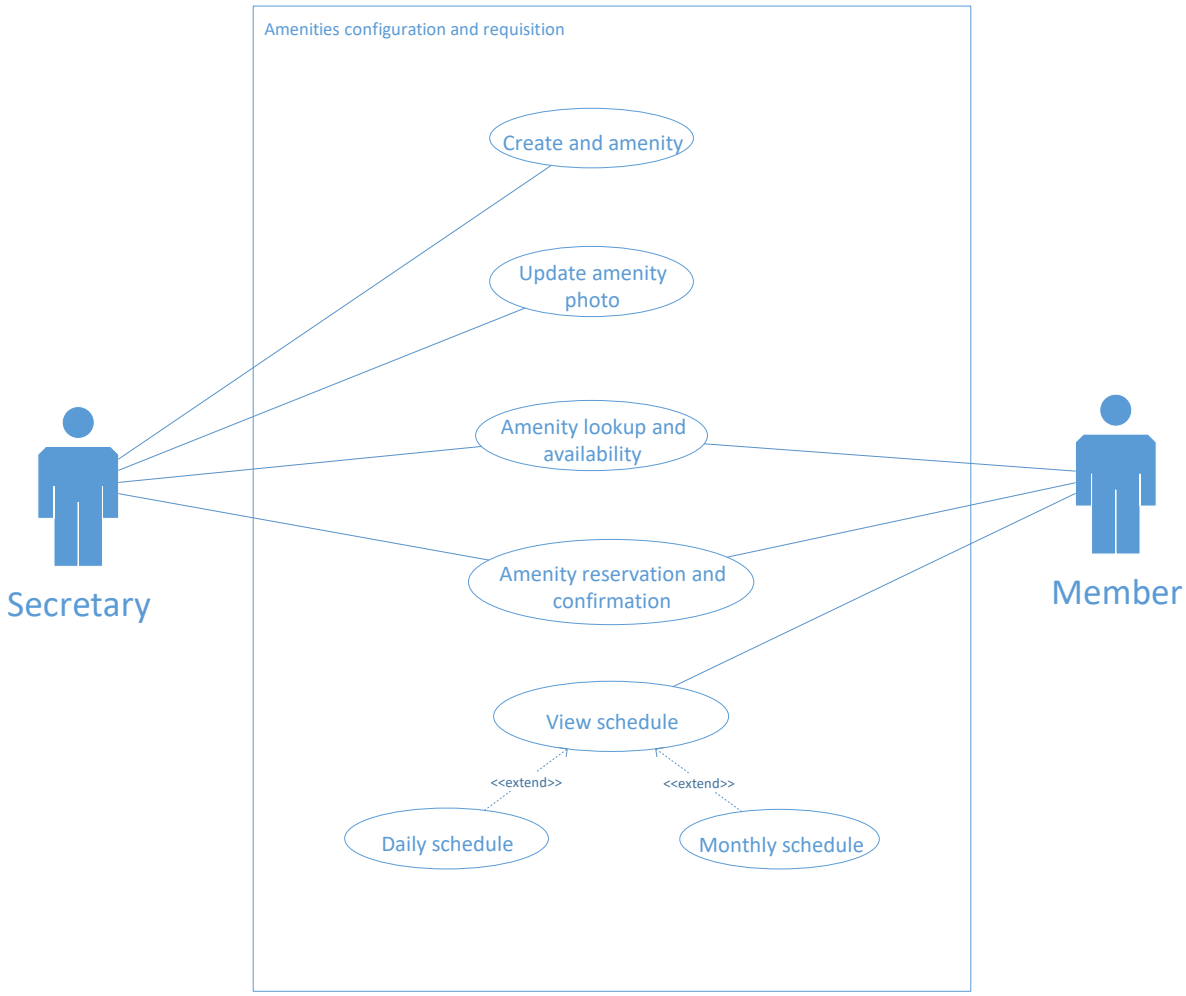
3.1.1.3 Maintenance



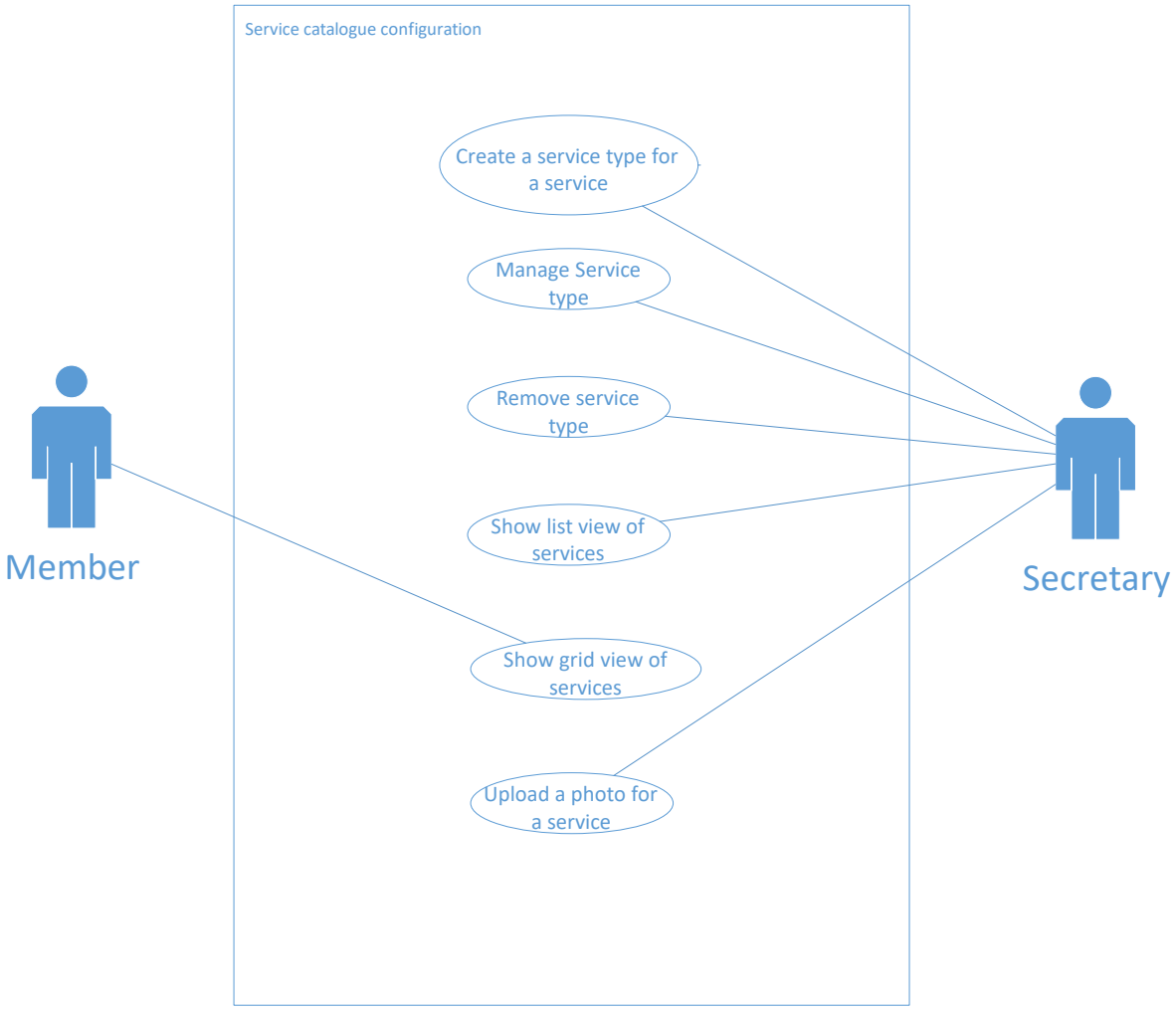
3.1.1.4 Group event creation and invitation



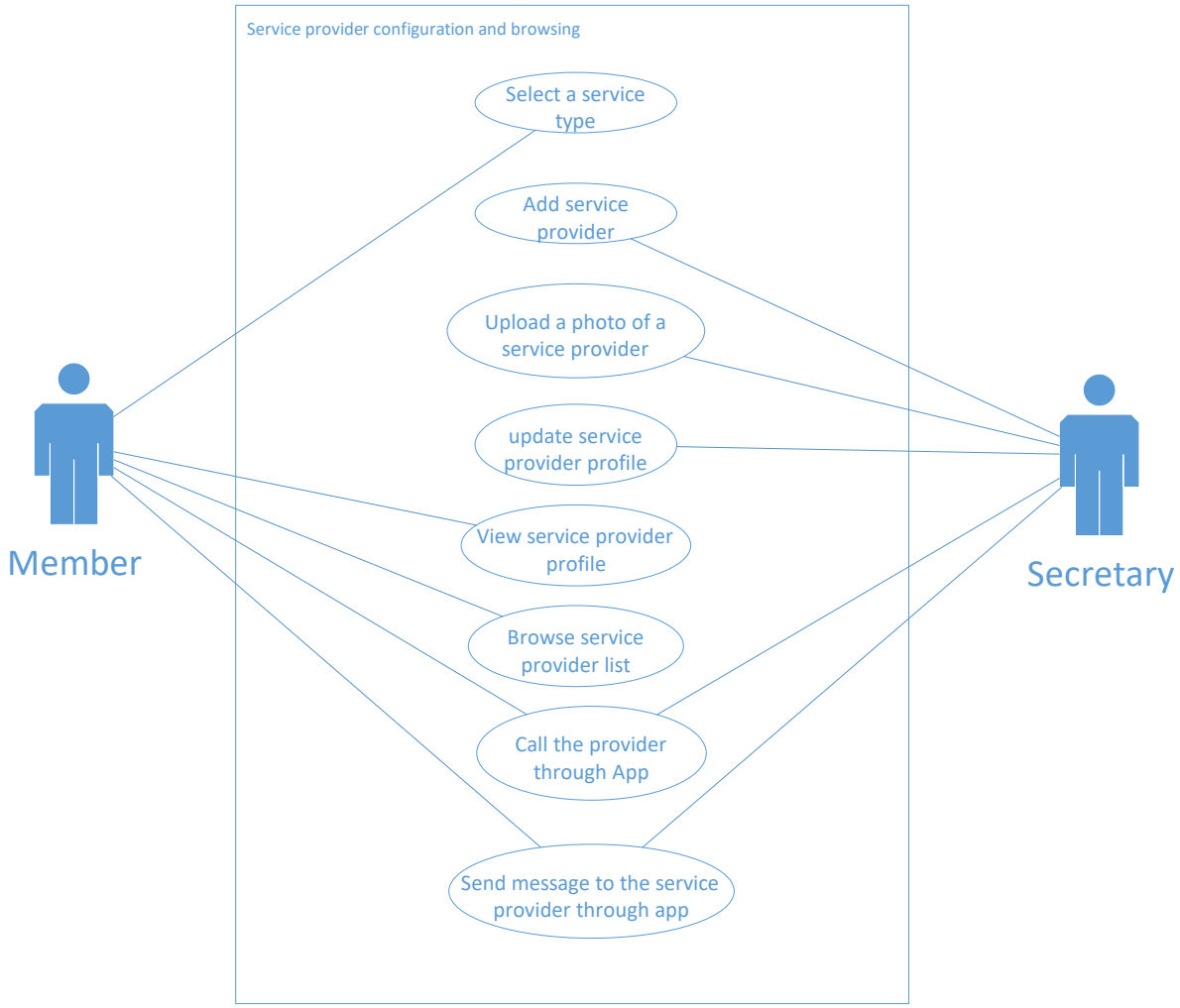
3.1.1.5 Amenities creation and requisition



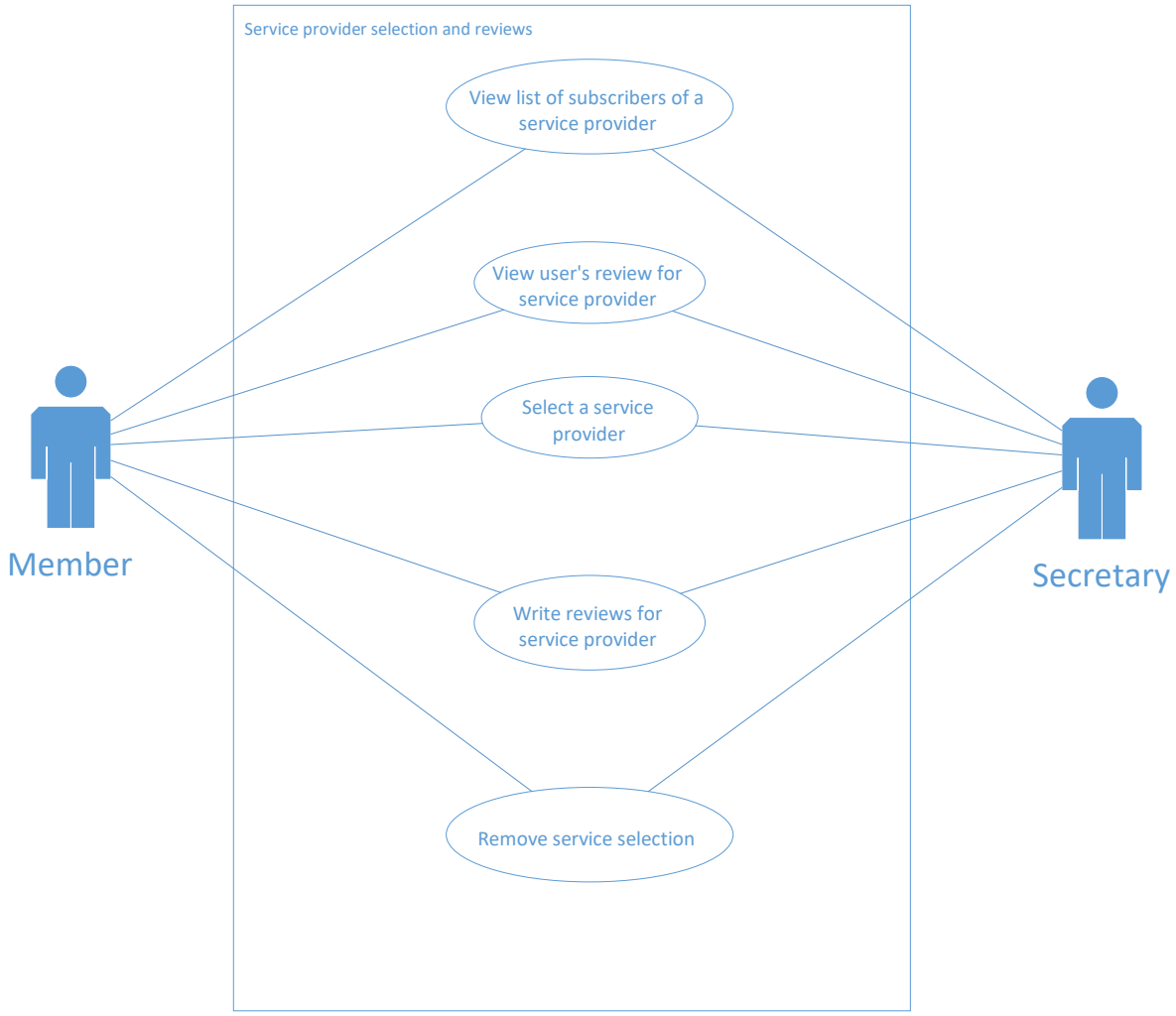
3.1.1.6 Service catalogue configuration



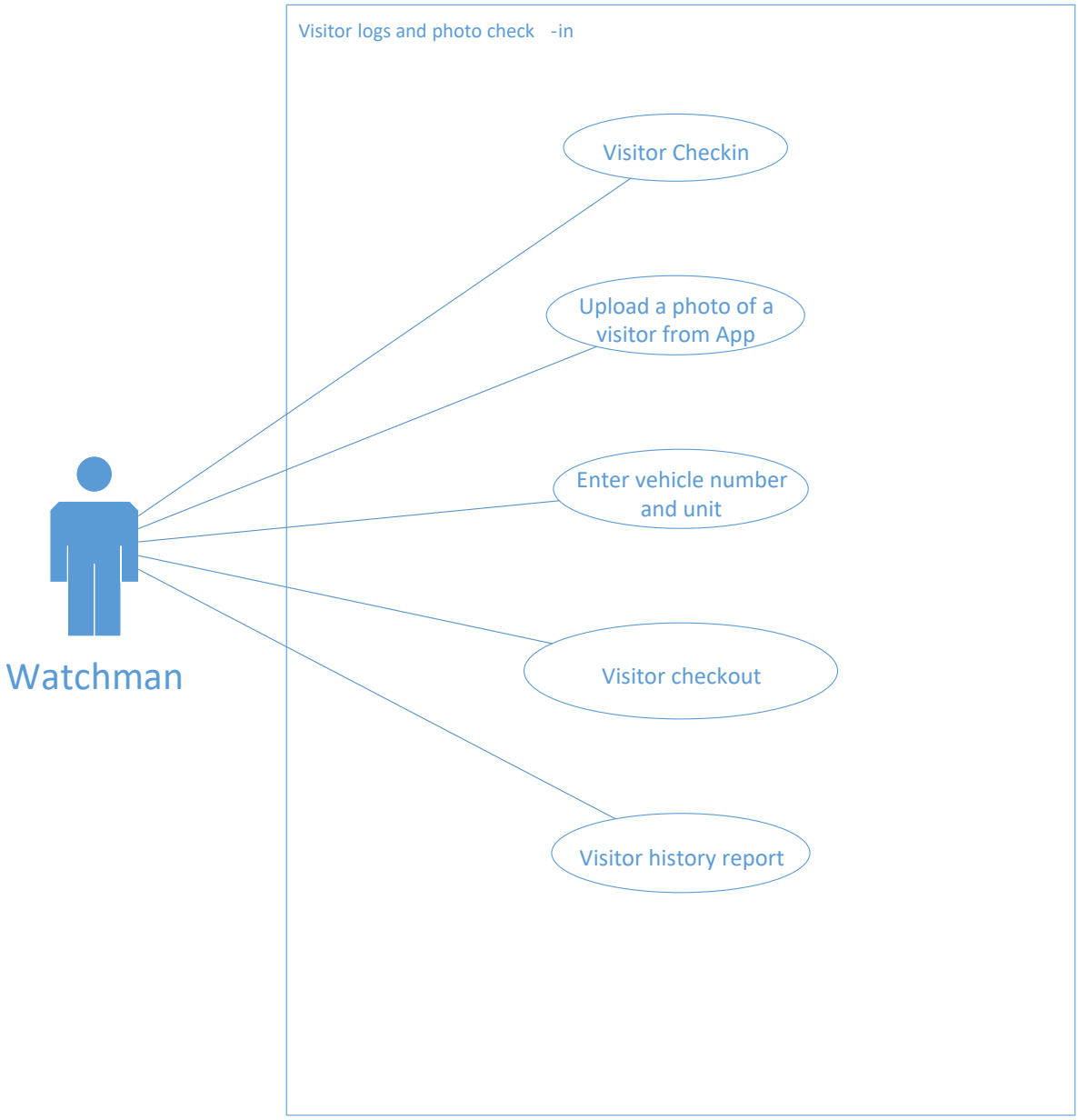
3.1.1.7 Service Provider configuration and browsing



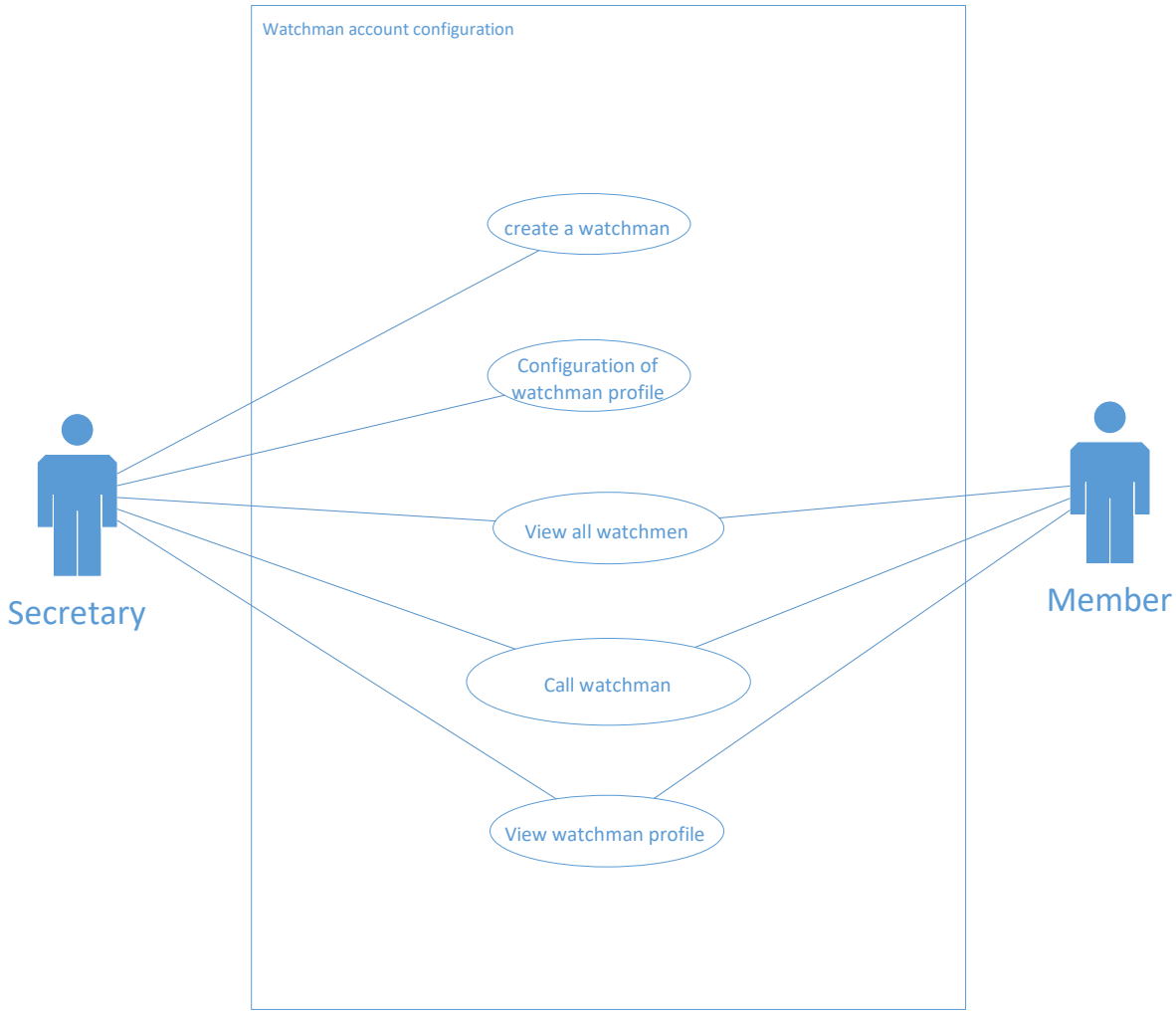
3.1.1.7 : Service provider selection and review



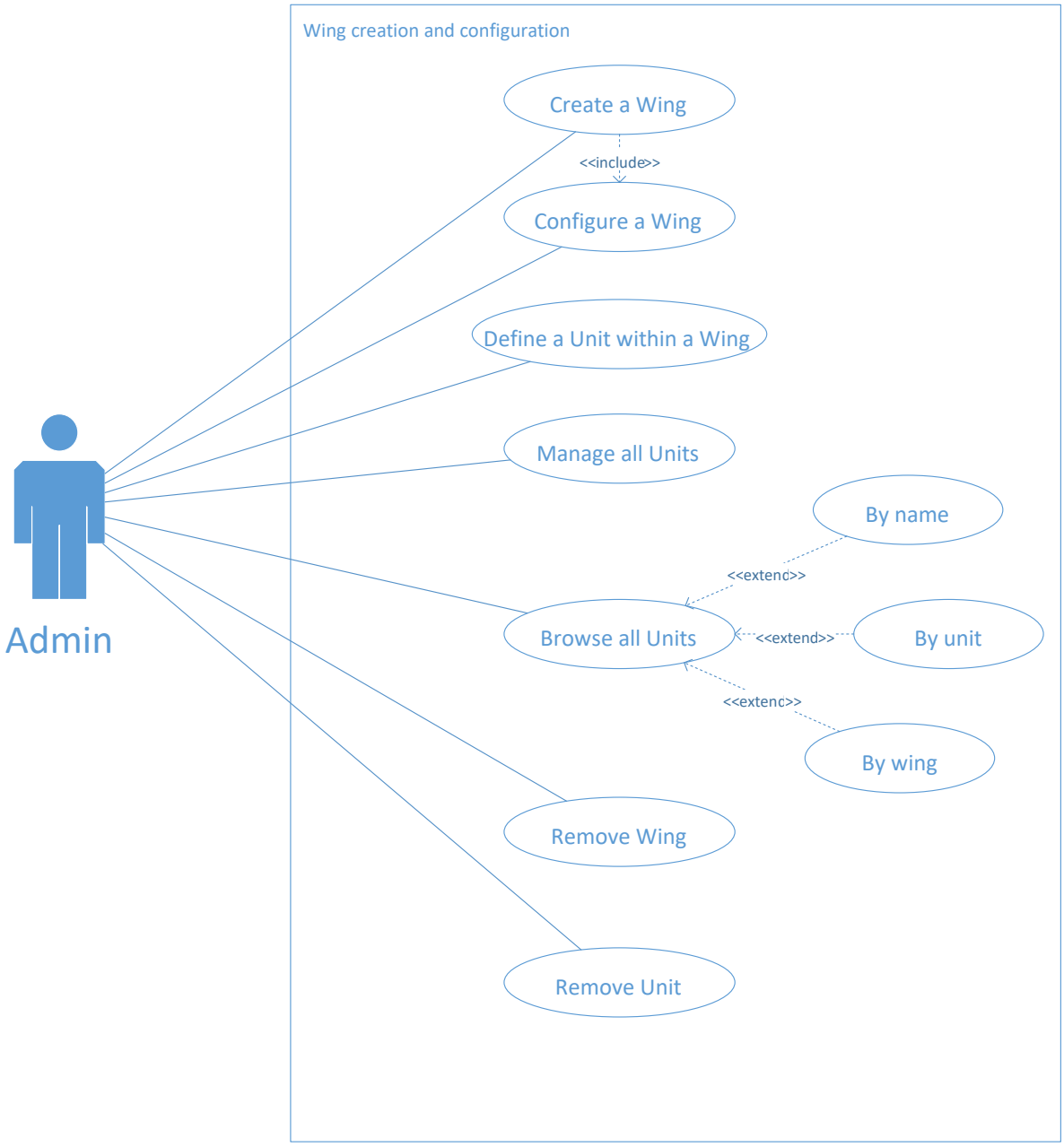
3.1.1.8 Visitor log and photo check-in



3.1.1.9 Watchman account configuration

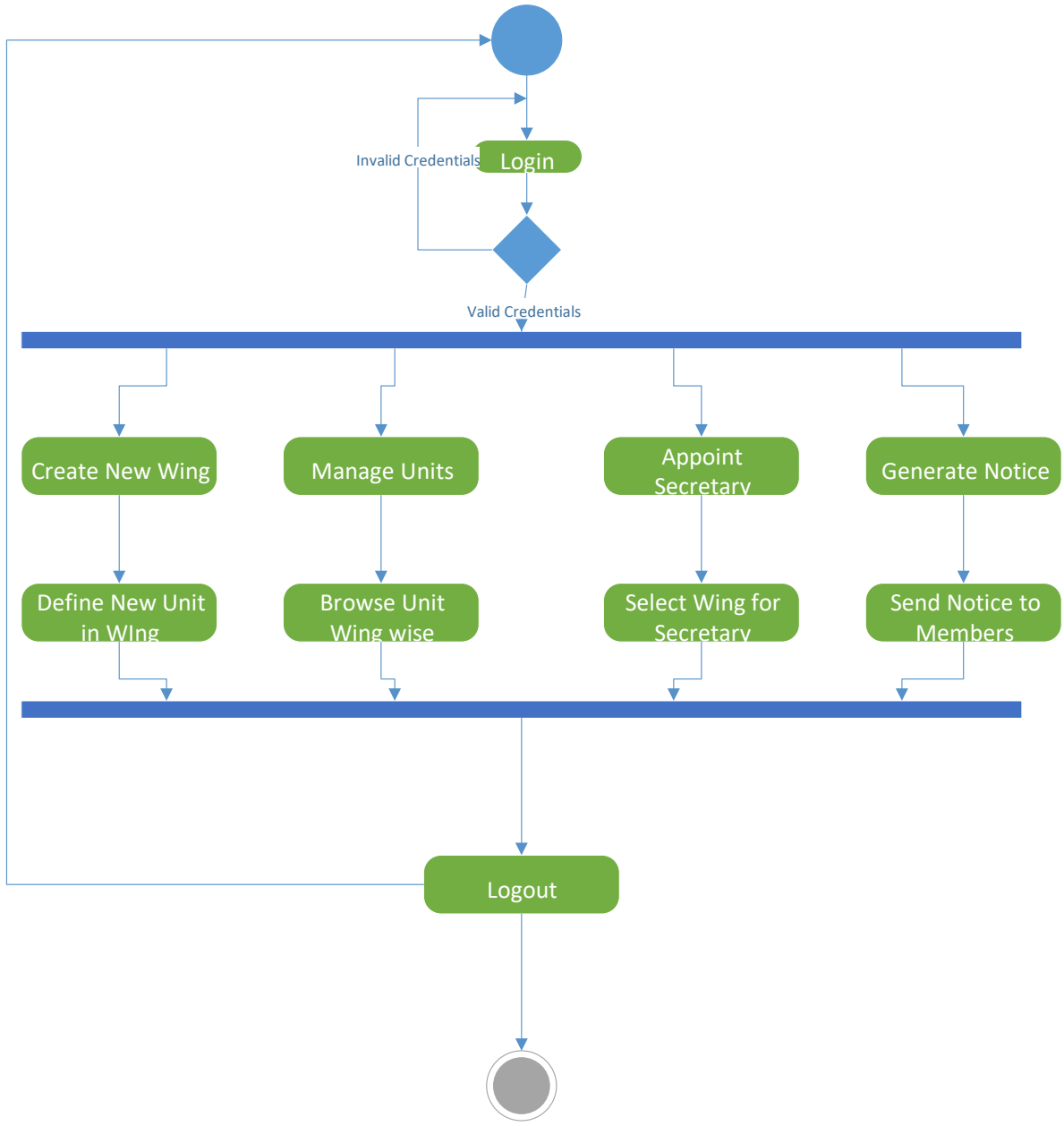


3.1.1.10 Wing creation and configuration

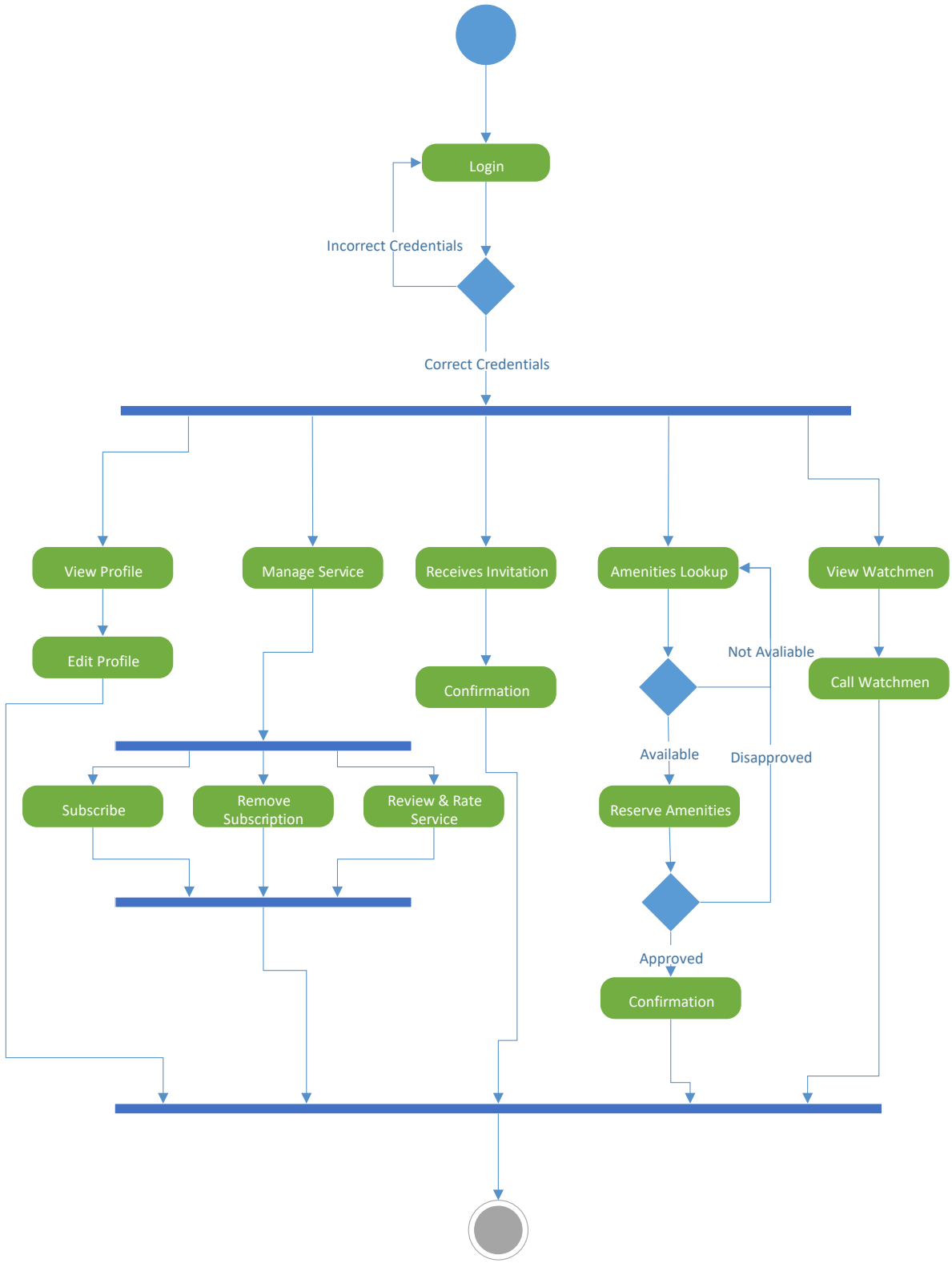


3.1.2 Activity Diagram:

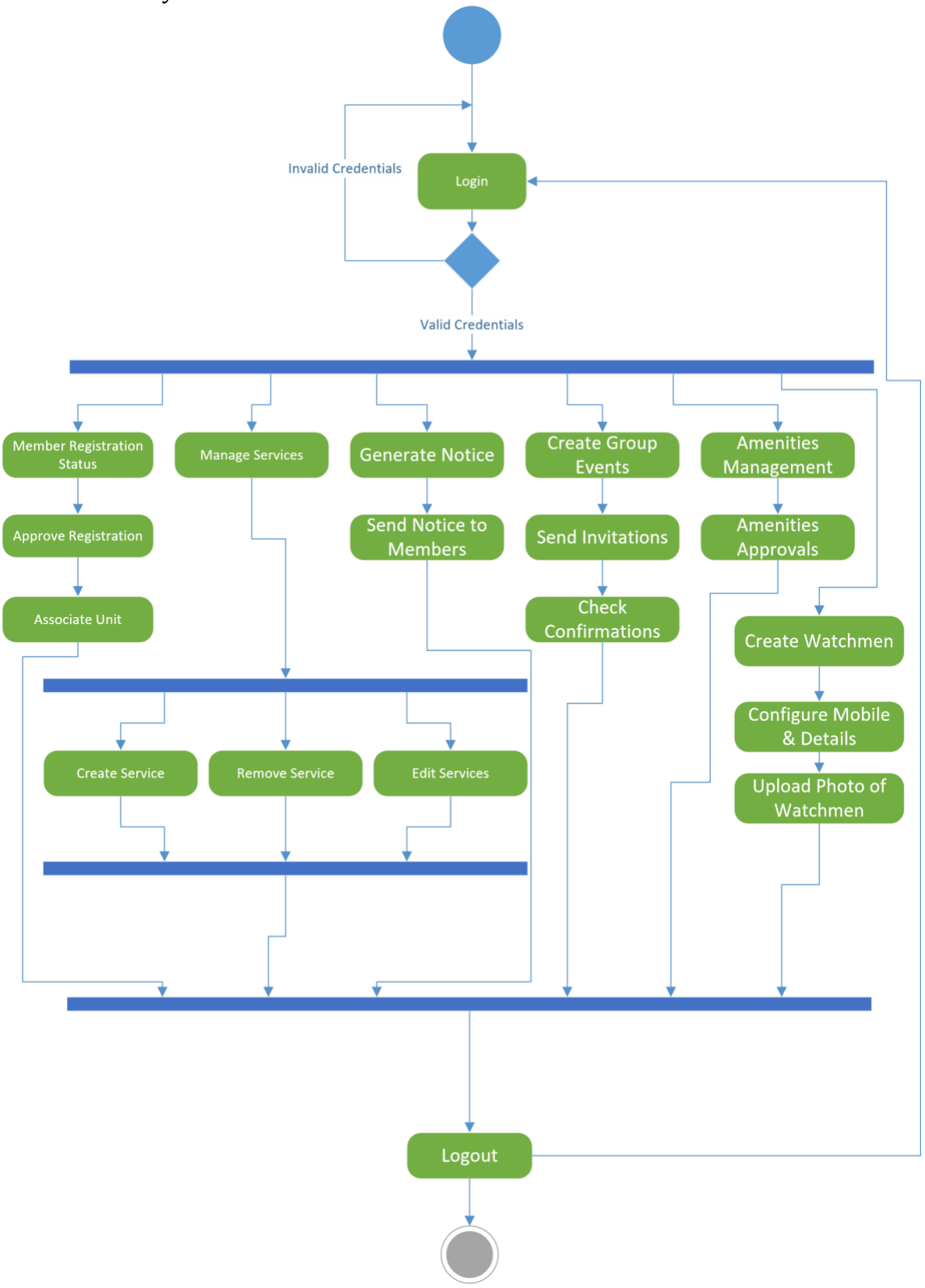
3.1.2.1 Admin



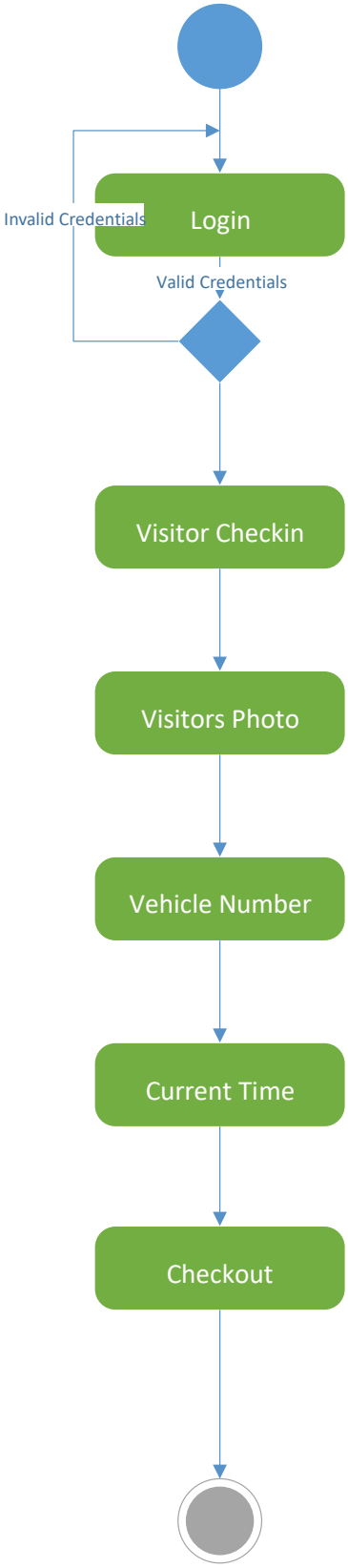
3.1.2.2 Member


Login
Incorrect Credentials
Correct Credentials
View Profile
Manage Service
Receives Invitation
Amenities Lookup
View Watchmen
Edit Profile
Confirmation
Not Avaliable
Call Watchmen
Available
Disapproved
Subscribe
Remove Subscription
Review & Rate Service
Reserve Amenities
Approved
Confirmation

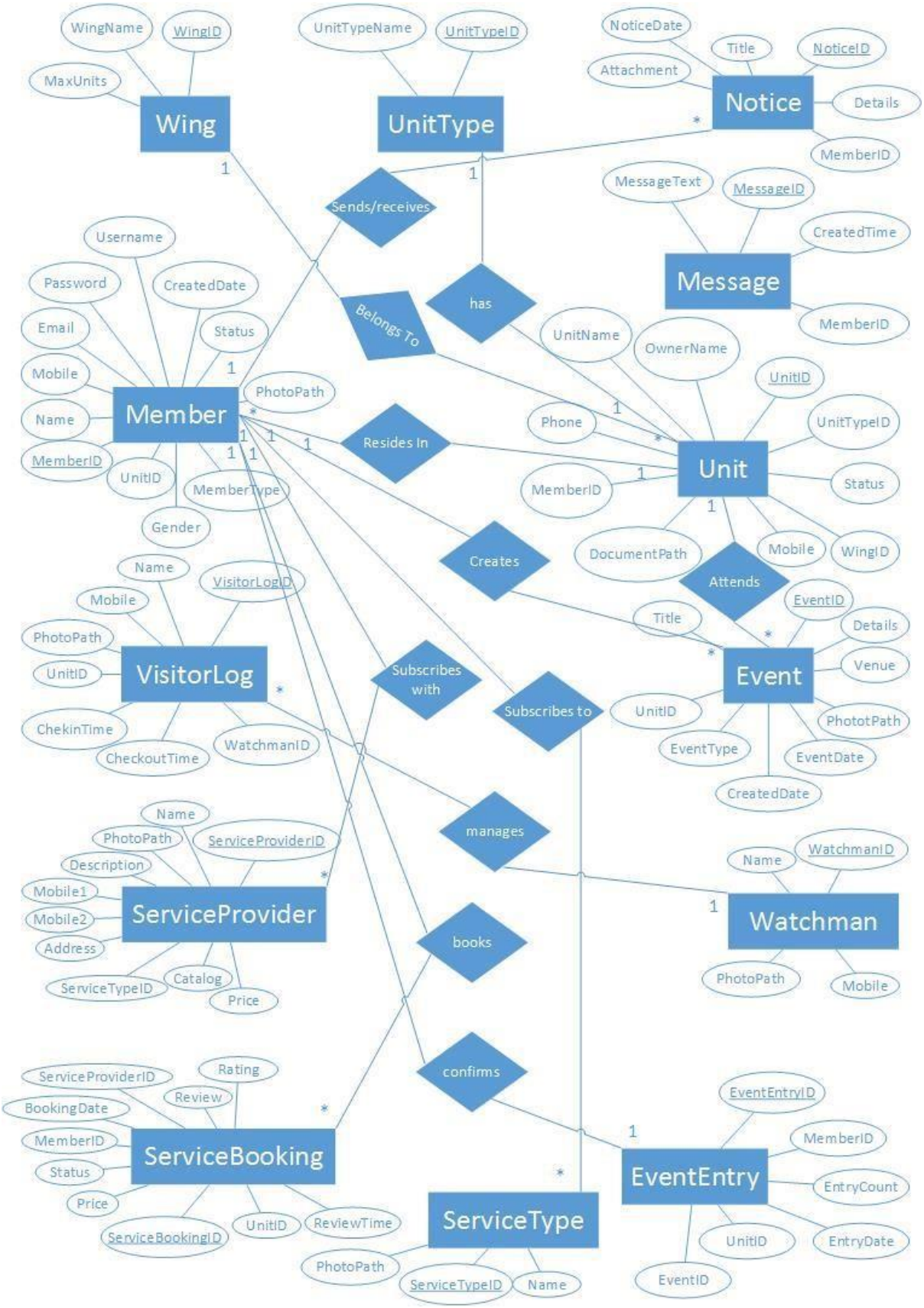
3.1.2.3 Secretary



3.1.2.4 Watchman



3.1.3 E-R diagram



3.2 Data Dictionary

Wing

No.	Column Name	Datatype	Key	Nullable
1	WingID	Int	Primary Key	No
2	WingName	Varchar(100)		Yes
3	MaxUnit	Int		Yes

Unit

No.	Column Name	Datatype	Key	Nullable
1	UnitID	Int	Primary Key	No
2	UnitName	Varchar(100)		Yes
3	WingID	Int	Foreign Key	No
4	UnitTypeID	Int	Foreign Key	No
5	Status	Varchar(100)		Yes
6	OwnerName	Varchar(100)		Yes
7	DocumentPath	Varchar(100)		Yes
8	Mobile	Varchar(100)		Yes
9	Phone	Varchar(100)		Yes
10	MemberID	Int	Foreign Key	No

UnitType

No.	Column Name	Datatype	Key	Nullable
1	UnitTypeID	Int	Primary Key	No
2	UnitTypeName	Varchar(100)		Yes

Member

No.	Column Name	Datatype	Key	Nullable
1	MemberID	Int	Primary Key	No
2	Name	Varchar(100)		Yes
3	Mobile	Varchar(100)		Yes
4	Email	Varchar(100)		Yes
5	Username	Varchar(100)		Yes
6	Password	Varchar(100)		Yes
7	CreatedDate	DateTime		Yes
8	UnitID	Int	Foreign Key	No
9	Status	Varchar(100)		Yes
10	PhotoPath	Varchar(100)		Yes
11	Gender	Varchar(100)		Yes
12	MemberType	Varchar(100)		Yes

ServiceType

No.	Column Name	Datatype	Key	Nullable
1	ServiceTypeID	Int	Primary Key	No
2	Name	Varchar(100)		Yes
3	PhotoPath	Varchar(100)		Yes

ServiceProvider

No.	Column Name	Datatype	Key	Nullable
1	ServiceProvideID	Int	Primary Key	No
2	Name	Varchar(100)		Yes
3	PhotoPath	Varchar(100)		Yes
4	ServiceTypeID	Int	Foreign Key	No
5	Description	Varchar(500)		Yes
6	Mobile1	Varchar(100)		Yes
7	Mobile2	Varchar(100)		Yes
8	Address	Varchar(100)		Yes
9	Catalog	Varchar(100)		Yes
10	Price	Varchar(100)		Yes

Notice

No.	Column Name	Datatype	Key	Nullable
1	NoticeID	Int	Primary key	No
2	Title	Varchar(100)		Yes
3	Details	Varchar(500)		Yes
4	Attachment	Varchar(100)		Yes
5	NoticeDate	DateTime		Yes
6	MemberID	Int	Foreign Key	No

Event

No.	Column Name	Datatype	Key	Nullable
1	EventID	Int	Primary Key	No
2	Title	Varchar(100)		Yes
3	PhotoPath	Varchar(100)		Yes
4	Details	Varchar(500)		Yes
5	Venue	Varchar(100)		Yes
6	EventDate	DateTime		Yes
7	CreatedDate	DateTime		Yes
8	EventType	Varchar(100)		Yes
9	UnitID	Int	Foreign Key	No

ServiceBooking

No.	Column Name	Datatype	Key	Nullable
1	ServiceBookingID	Int	Priimary Key	No
2	UnitID	Int	Foreign Key	No
3	ServiceProviderID	int	Foreign Key	No
4	BookingDate	DateTime		Yes
5	MemberID	Int	Foreign Key	No
6	Status	Varchar(100)		Yes
7	Price	Varchar(100)		Yes
8	Review	Varchar(100)		Yes
9	Rating	Varchar(100)		Yes
10	ReviewTime	DateTime		Yes

EventEntry

No.	Column Name	Datatype	Key	Nullable
1	EventEntryID	Int	Primary Key	No
2	EventID	Int	Foreign Key	No
3	UnitID	Int	Foreign Key	No
4	MemberID	Int	Foreign Key	No
5	EntryCount	Int		Yes
6	EntryDate	DateTime		Yes

VisitorLog

No.	Column Name	Datatype	Key	Nullable
1	VisitorLogID	Int	Primary Key	No
2	Name	Varchar(100)		Yes
3	Mobile	Varchar(100)		Yes
4	PhotoPath	Varchar(100)		Yes
5	UnitID	Int	Foreign Key	No
6	CheckinTime	DateTime		Yes
7	CheckoutTime	DateTime		Yes
8	WatchmanID	int	Foreign Key	No

Watchman

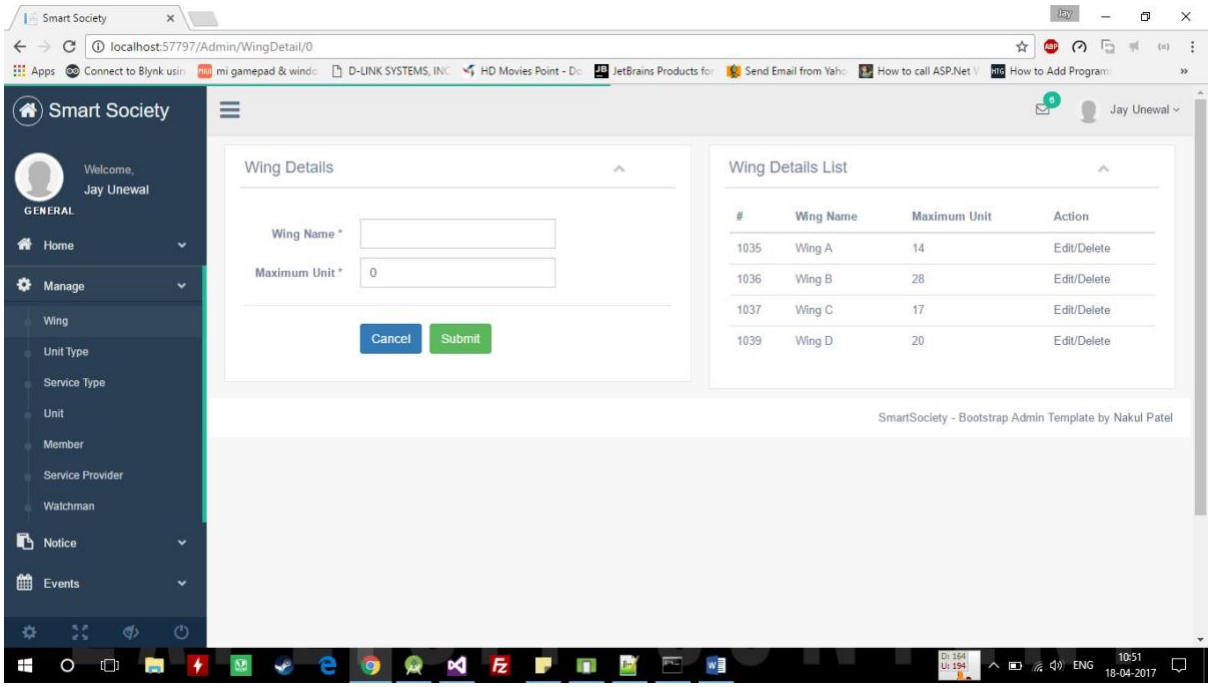
No.	Column Name	Datatype	Key	Nullable
1	WatchmanID	Int	Primary Key	No
2	Name	Varchar(100)		Yes
3	Mobile	Varchar(100)		Yes
4	PhotoPath	Varchar(100)		Yes

Message

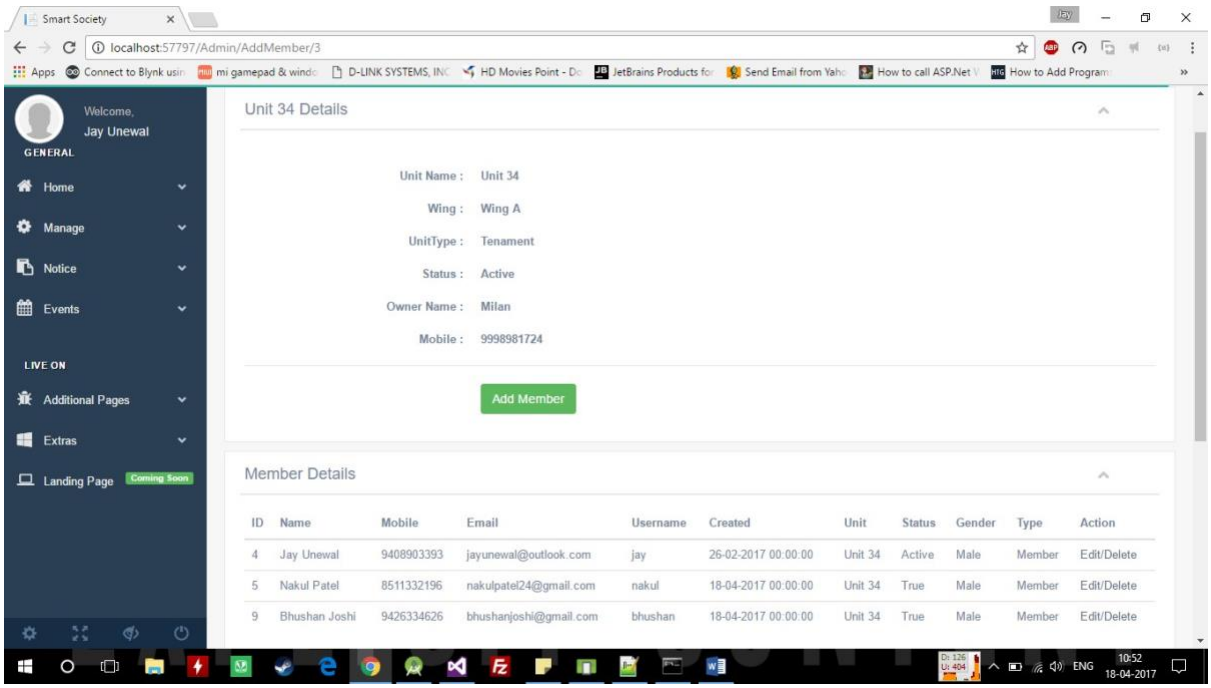
No.	Column Name	Datatype	Key	Nullable
1	MessageID	Int	Primary Key	No
2	MessageText	Varchar(100)		Yes
3	CreateTime	DateTime		Yes
4	MemberID	int	Foreign Key	No

3.3 Application Screenshots /Implementation:

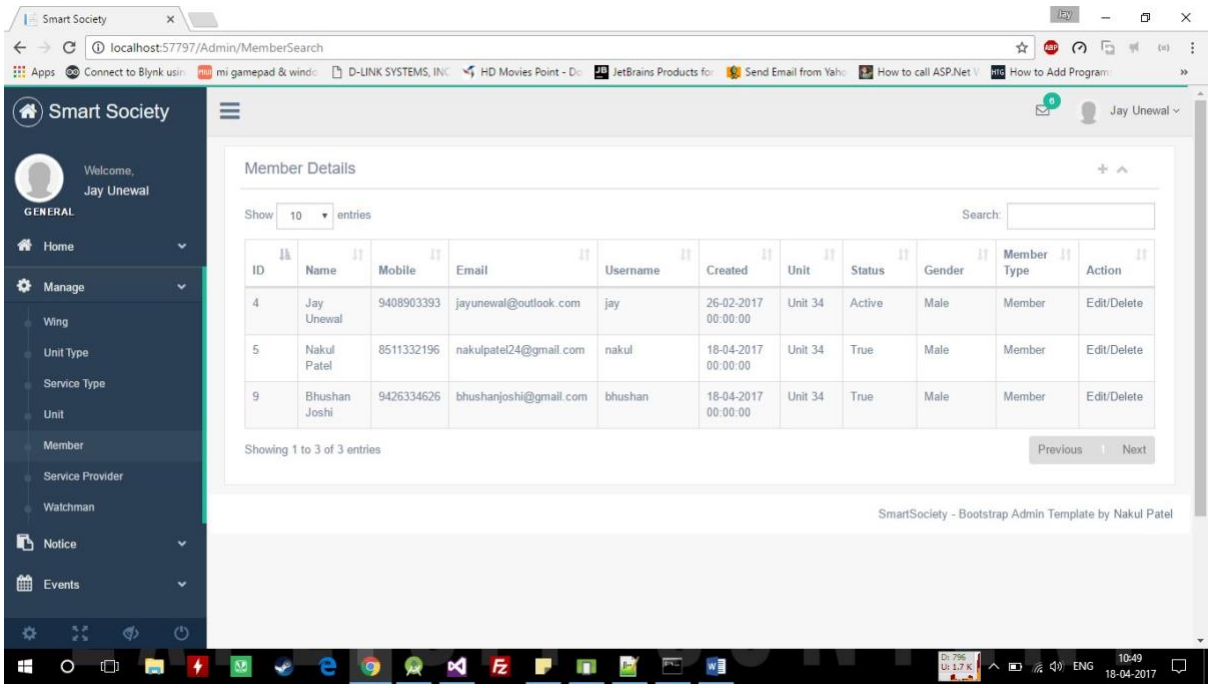
Wing



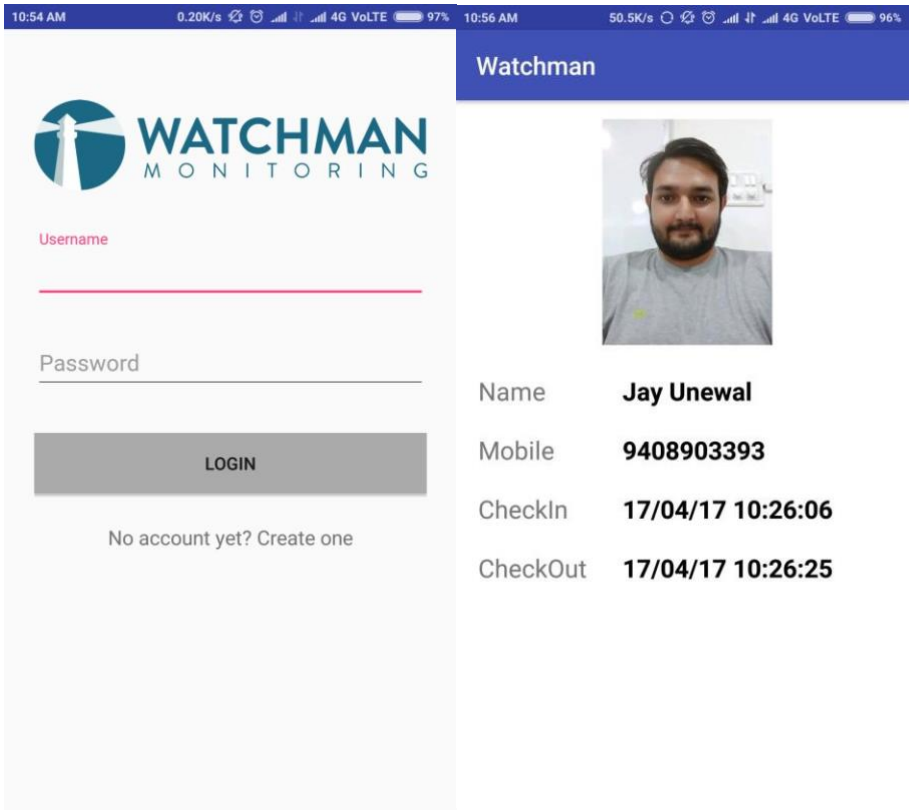
Unit/Add Member

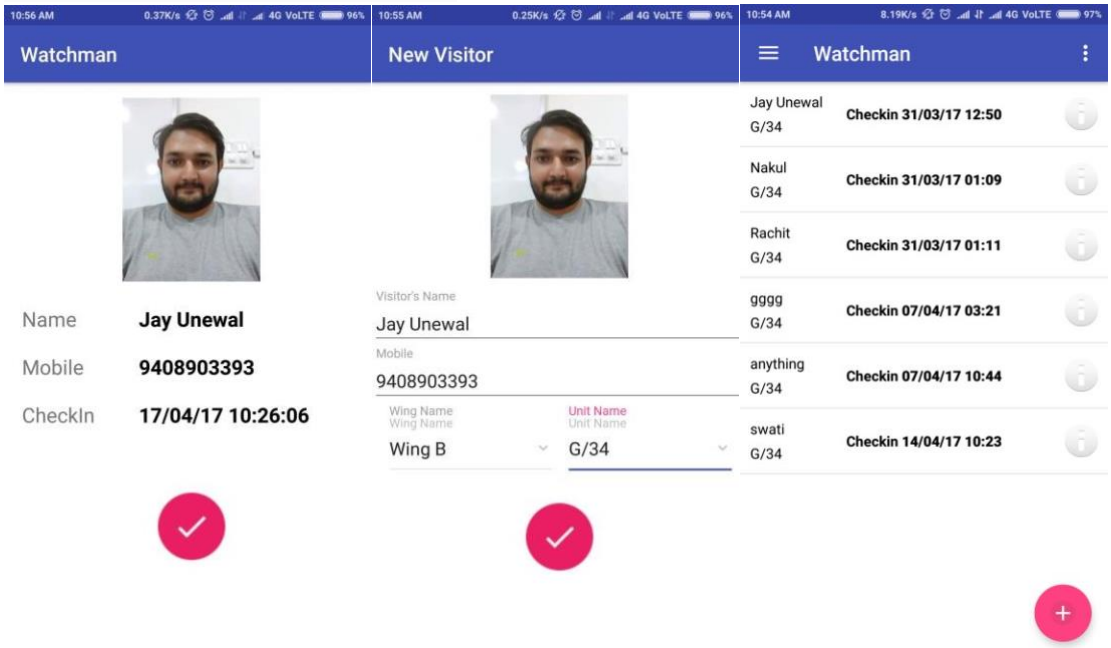


Member


Smart Society
localhost:57797/Admin/MemberSearch
Smart Society
Welcome,
Jay Unewal
GENERAL
Home
Manage
Wing
Unit Type
Service Type
Unit
Member
Service Provider
Watchman
Notice
Events
Jay Unewal
Member Details
Show 10 entries
Search:
ID
Name
Mobile
Email
Username
Created
Unit
Status
Gender
Member Type
Action
4
Jay Unewal
9408903393
jayunewal@outlook.com
jay
26-02-2017 00:00:00
Unit 34
Active
Male
Member
Edit/Delete
5
Nakul Patel
8511332196
nakulpatel24@gmail.com
nakul
18-04-2017 00:00:00
Unit 34
True
Male
Member
Edit/Delete
9
Bhushan Joshi
9426334626
bhushanjoshi@gmail.com
bhushan
18-04-2017 00:00:00
Unit 34
True
Male
Member
Edit/Delete
Showing 1 to 3 of 3 entries
Previous
1
Next
SmartSociety - Bootstrap Admin Template by Nakul Patel
ENG
10:49
18-04-2017

Watchman


WATCHMAN
MONITORING
Username
Password
LOGIN
No account yet? Create one
Watchman
Name Jay Unewal
Mobile 9408903393
CheckIn 17/04/17 10:26:06
CheckOut 17/04/17 10:26:25


Watchman
Name Jay Unewal
Mobile 9408903393
CheckIn 17/04/17 10:26:06
New Visitor
Visitor's Name
Jay Unewal
Mobile
9408903393
Wing Name
Wing B
Unit Name
G/34
Watchman
Jay Unewal G/34 Checkin 31/03/17 12:50
Nakul G/34 Checkin 31/03/17 01:09
Rachit G/34 Checkin 31/03/17 01:11
gggg G/34 Checkin 07/04/17 03:21
anything G/34 Checkin 07/04/17 10:44
swati G/34 Checkin 14/04/17 10:23

3.4 TESTING

Software testing is a process of executing a program or application with the intent of finding the software bugs. It can also be stated as the process of validating and verifying that a software program or application or product:

Meets the business and technical requirements that guided it's design and development. Works as expected. Can be implemented with the same characteristic.

Let's break the definition of Software testing into the following parts:

1) **Process:** Testing is a process rather than a single activity.

2) **All Life Cycle Activities:** Testing is a process that's take place throughout the *Software Development Life Cycle (SDLC).* The process of designing tests early in the life cycle can help to prevent defects from being introduced in the code.

Sometimes it's referred as "verifying the test basis via the test design". The test basis includes documents such as the requirements and design specifications.

3) **Static Testing:** It can test and find defects without executing code. Static Testing is done during verification process. This testing includes reviewing of the documents (including source code) and static analysis. This is useful and cost effective way of testing. For example: reviewing, walkthrough, inspection, etc.

4) **Dynamic Testing:** In dynamic testing the software code is executed to demonstrate the result of running tests. It's done during validation process. For example: unit testing, integration testing, system testing, etc.

5) **Planning:** We need to plan as what we want to do. We control the test activities, we report on testing progress and the status of the software under test.

6) **Preparation:** We need to choose what testing we will do, by selecting test conditions and designing test cases.

Evaluation: During evaluation we must check the results and evaluate the software under test and the completion criteria, which helps us to decide whether we have finished testing and whether the software product has passed the tests.

CHAPTER - 4
CONCLUSION

Conclusion

Smart society is an android plus and MVC .net web application proposed for an efficient interaction between members of a society, secretary and admin for managing and utilizing various resources. Moreover, it provides visitor status which implies in taking care of all the visitor check in and check out information, keeping track of those activities for the formation of more secure system.

Efficient database management will be provided by this system which will reduce the effort and the time for managing the data.

These changes results in more portable, secure, efficient, resourceful, interactive system which is vital for every member living in a society.

Future scope:

The software has been developed in such a way that it can accept modifications and further changes. The software is very user friendly and future any changes can be done easily.

Software restructuring is carried out. Software restructuring modifies source code in an effort to make it amenable to future changes. In general, restructuring does not modify the overall program architecture. It tends to focus on the design details of individual modules and on local data structure defined within modules.

Every system should allow scope for further development or enhancement. The system can be adapted for any further development. The system is so flexible to allow any modification need for the further functioning of programs.

Since the objectives may be brought broad in future, the system can be easily modified accordingly, as the system has been modularized. The future expansion can be done in a concise manner in order to improve the efficiently of the system.

CHAPTER - 5
BIBLIOGRAPHY AND REFERENCES

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- Learn MVC
- Samay Software
- .Net Knowledge Book: Web Development with ASP.Net MVC and Entity Framework: .Net Knowledge Book: Web Development with ASP.Net MVC and Entity Framework
- Net Knowledge Book : Web Development with Asp.Net MVC and Entity Framework

CHAPTER - 6
APPENDIX