

# **Software Requirements Specification**

Version 1.0;

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## **Campus In and Out**

**Submitted in partial fulfillment of the  
requirements of CS223 Software Engineering**

**This work is based upon the submissions of course Software Engineering (CS223). The students who submitted this team project were:**

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## **1.0. Introduction**

### **1.1. Purpose**

The purpose of this document is to provide a detailed description of the development and operation of the campus in and out management. It will illustrate the purpose and complete declaration for the development of software. It will also explain system constraints, user interface, and the response of the system to any external factors. This document is primarily meant for the client, but will also be used by the developers as a scale measure to gauge them progress.

### **1.2. Scope of Project**

This software system will be designed to increase the security of the institute and managing who and for how much time the person can stay inside the campus. Someone should not use our campus for some kind of shortcut so someone not belonging to the campus can enter into the campus for a valid reason only and then he/she can get off the campus through the same gate he/she used to get into the campus other gates will not be opened for them to get out.

Students are only allowed to get in/out of the campus till 2:00 AM so the student who wants to get in should have some special kind of permission otherwise the student luggage will be checked as it should not have any kind of alcohol, etc. and then will be allowed to get into the hostel he/she will be given a special room where the student will spend his/her night and the student will not be allowed to get out after 2:00 AM till 6:00 AM.

### **1.3 Constraints**

1. Permission according to the purpose of the person to get inside.
2. Guard must be present at the gate.

### **1.4 Assumptions and Dependencies**

1. Every person has Id either an Institute Id or a valid Personal Id.
2. Only one Admin.
3. Initially all the Institute members are inside the Institute and Non Institute members are outside the campus.
4. Institute member's vehicle are initially green colored.
5. Special Guest's vehicles are registered before they have entered.
6. Guard will check ID card very carefully.

## 1.5 Glossary

Person	One who wants to enter into the campus
Institute Member	Student, Institute Workers, Security guard, Faculty
Non Institute Member	Anyone not belonging to the Institute Member
Invalid Time	Time at which a particular actor is not generally allowed to get in/out

## 1.6. References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.  
<http://www.cse.chalmers.se/~feldt/>  
<http://aakashtechsupportdocs.readthedocs.org/>

## 1.7 Overview of Document

The rest of the document is designed in the following way:

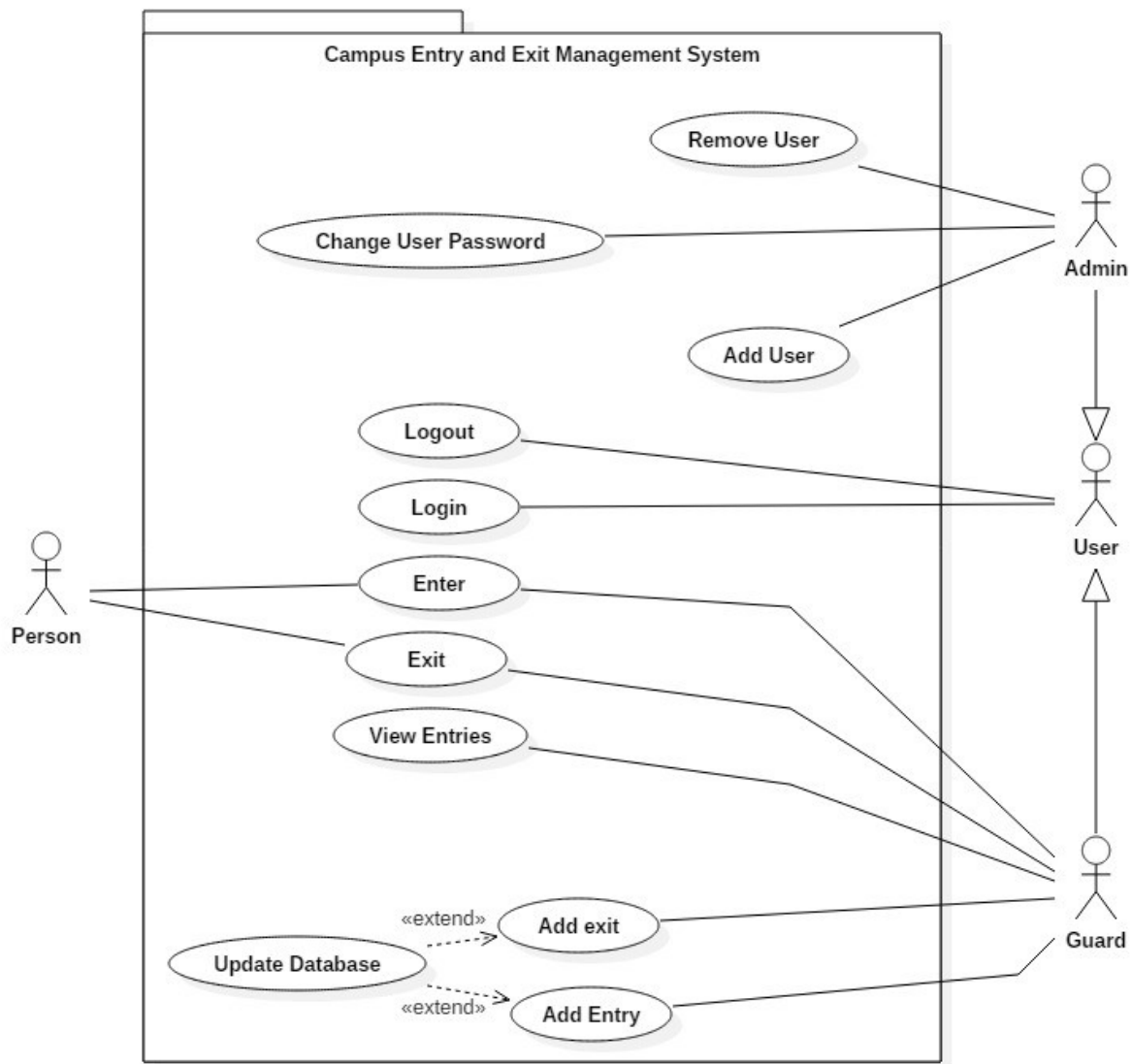
## 2.0. Overall Description

### 2.1. *System Requirement*

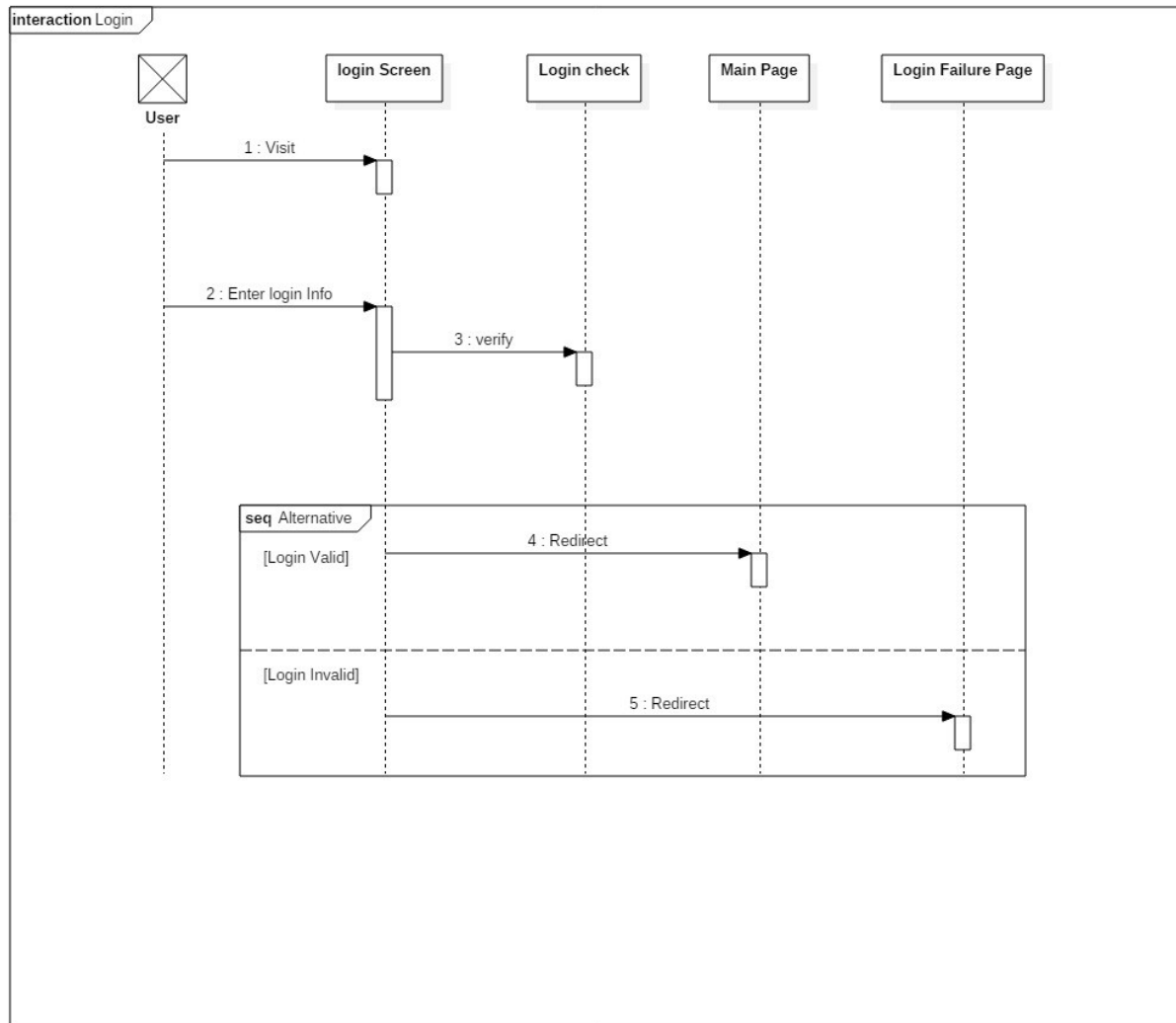
Windows operating systems or Linux based operating systems

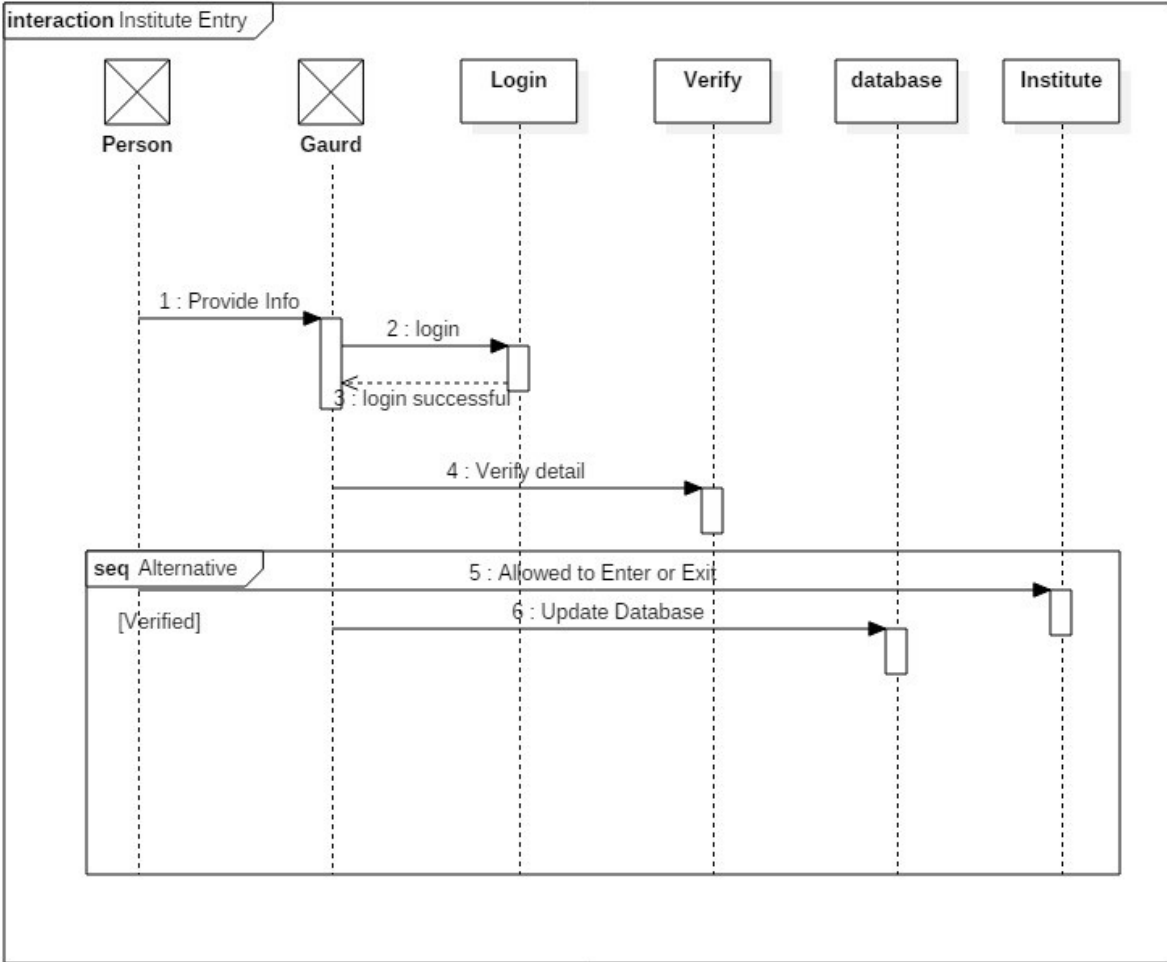
## 2.2. Functional Requirements and Specification

### 2.2.1 Usecase Diagram



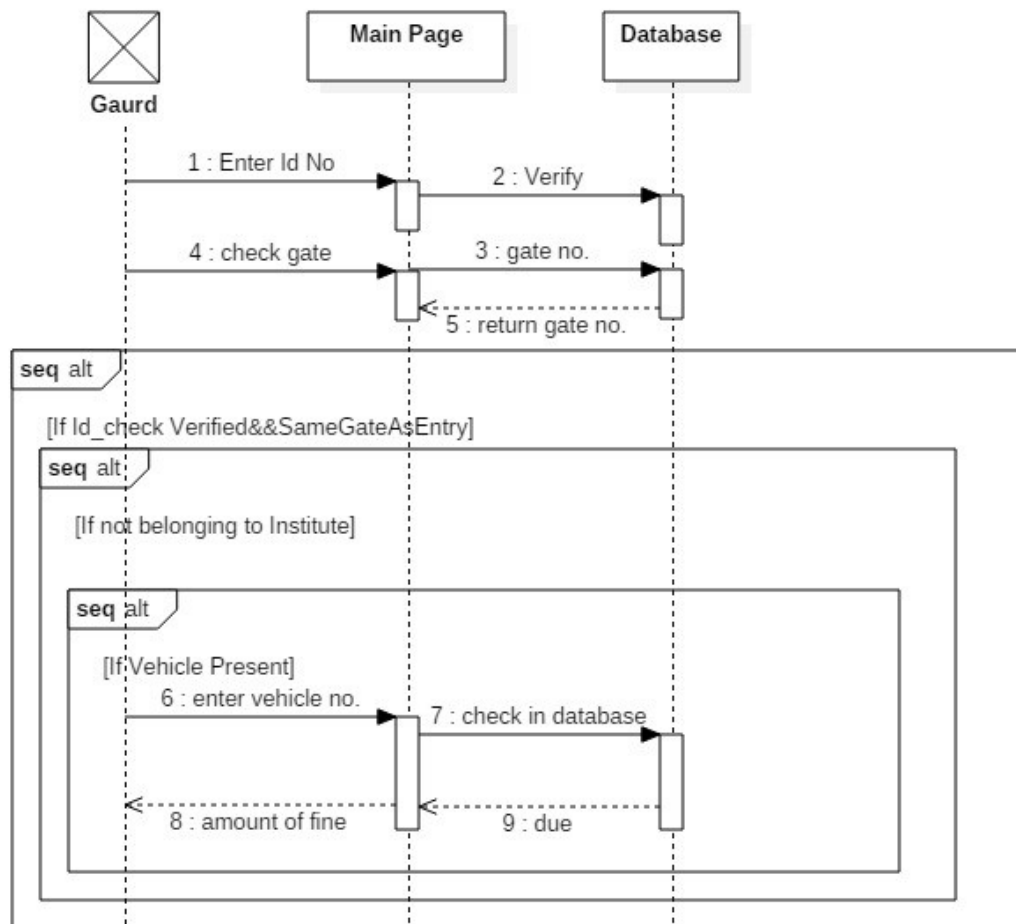
## 2.2.2. Sequence Diagram



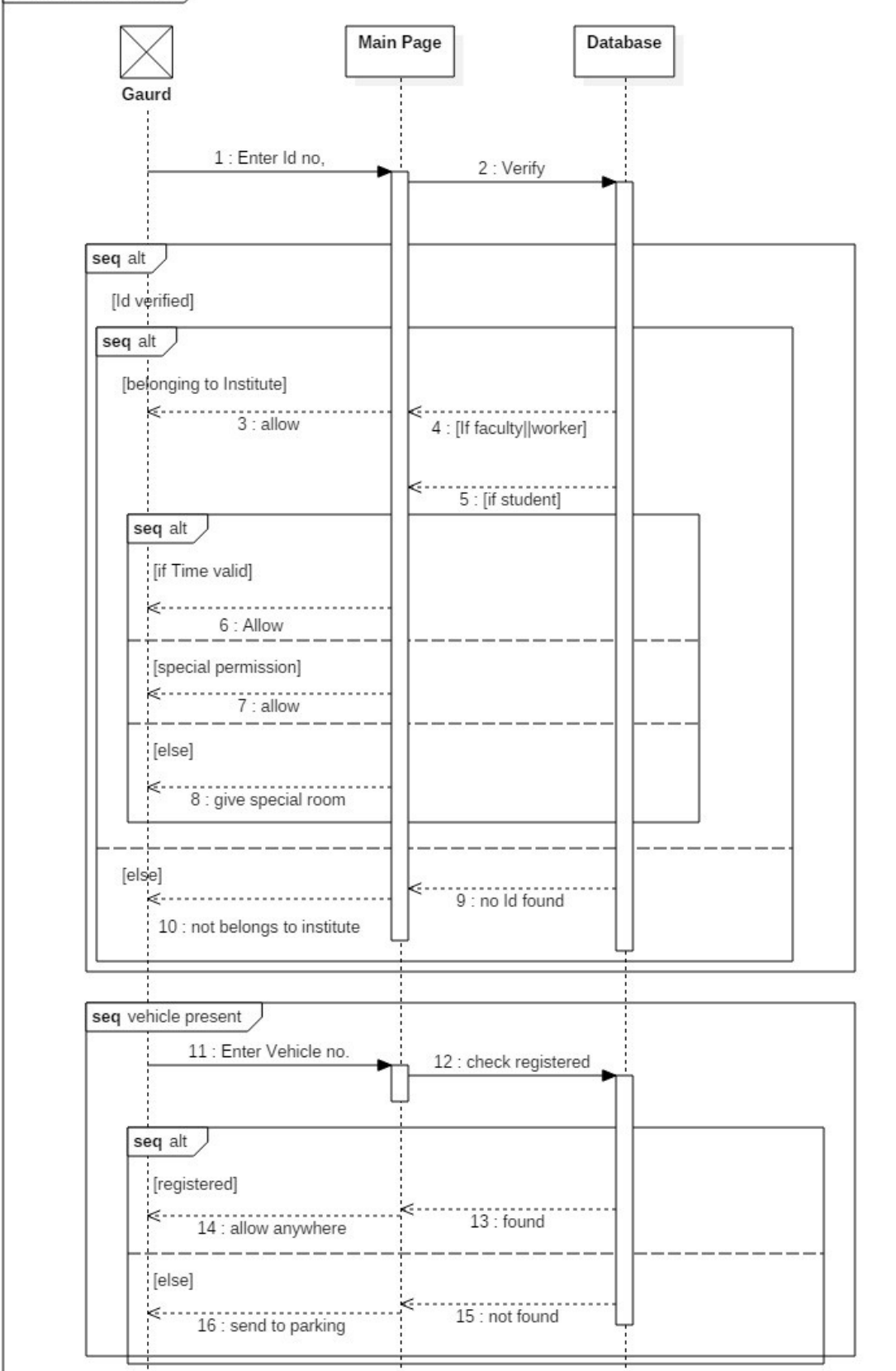




interaction VerifyExit(Non-Institute)



# interaction VerifyEntry



interaction logout



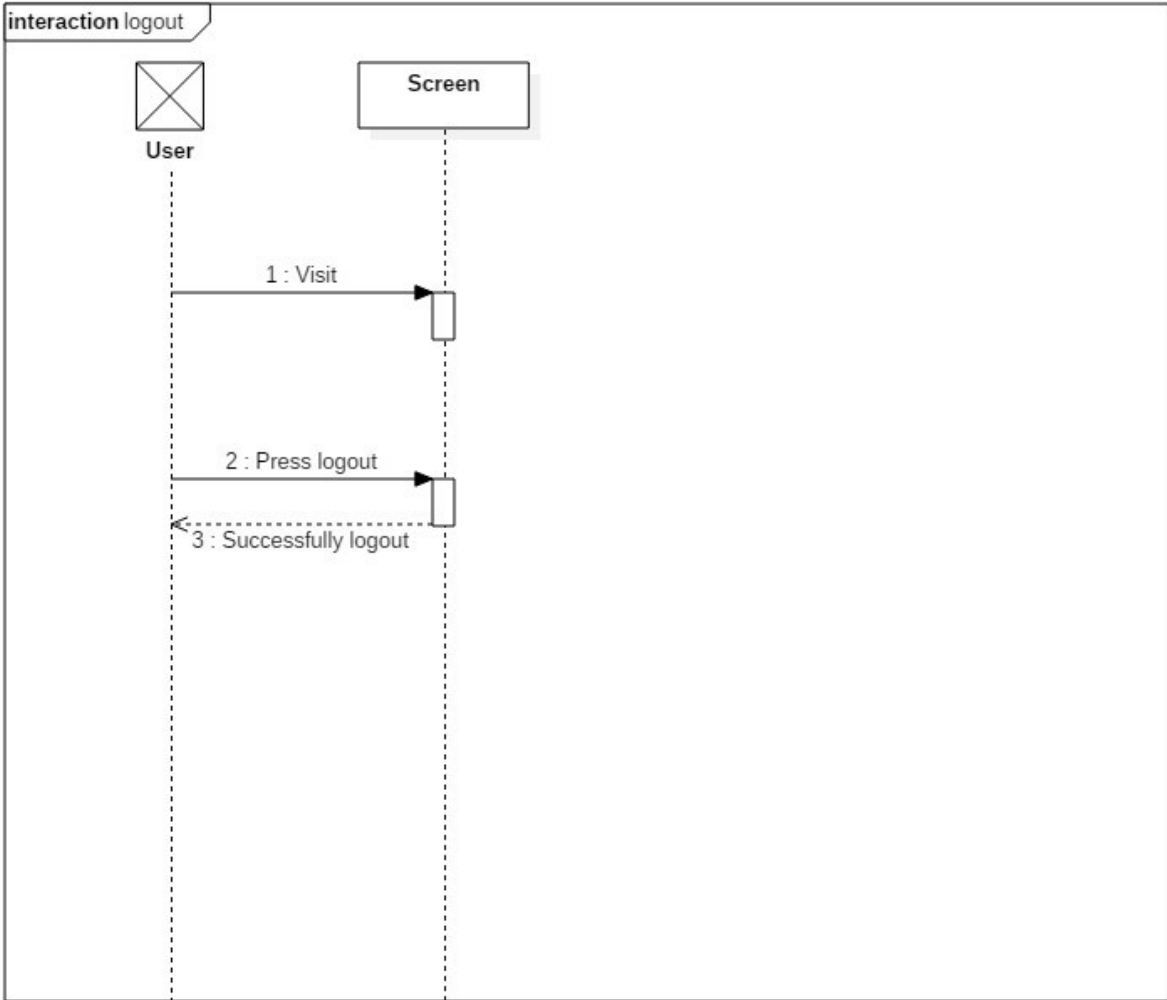
User

Screen

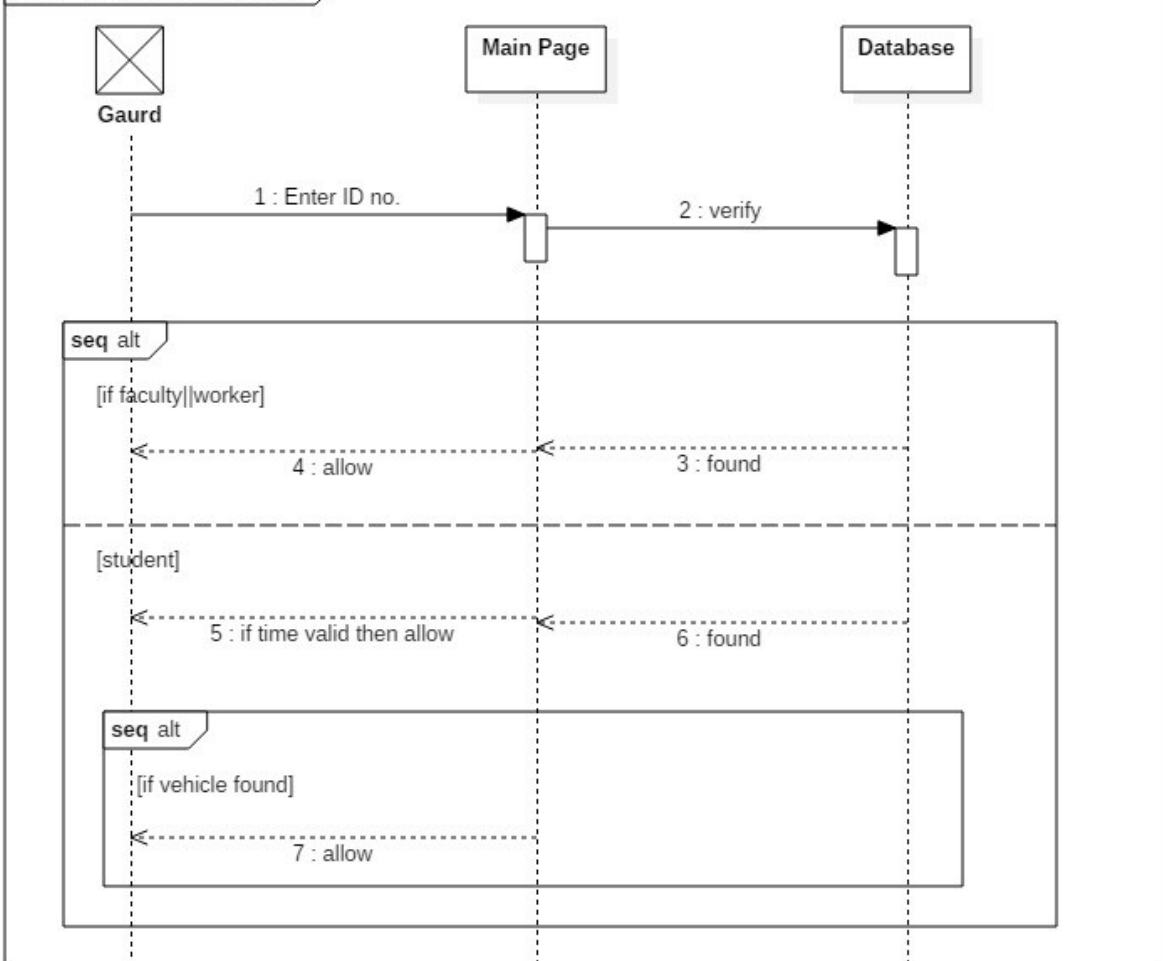
1 : Visit

2 : Press logout

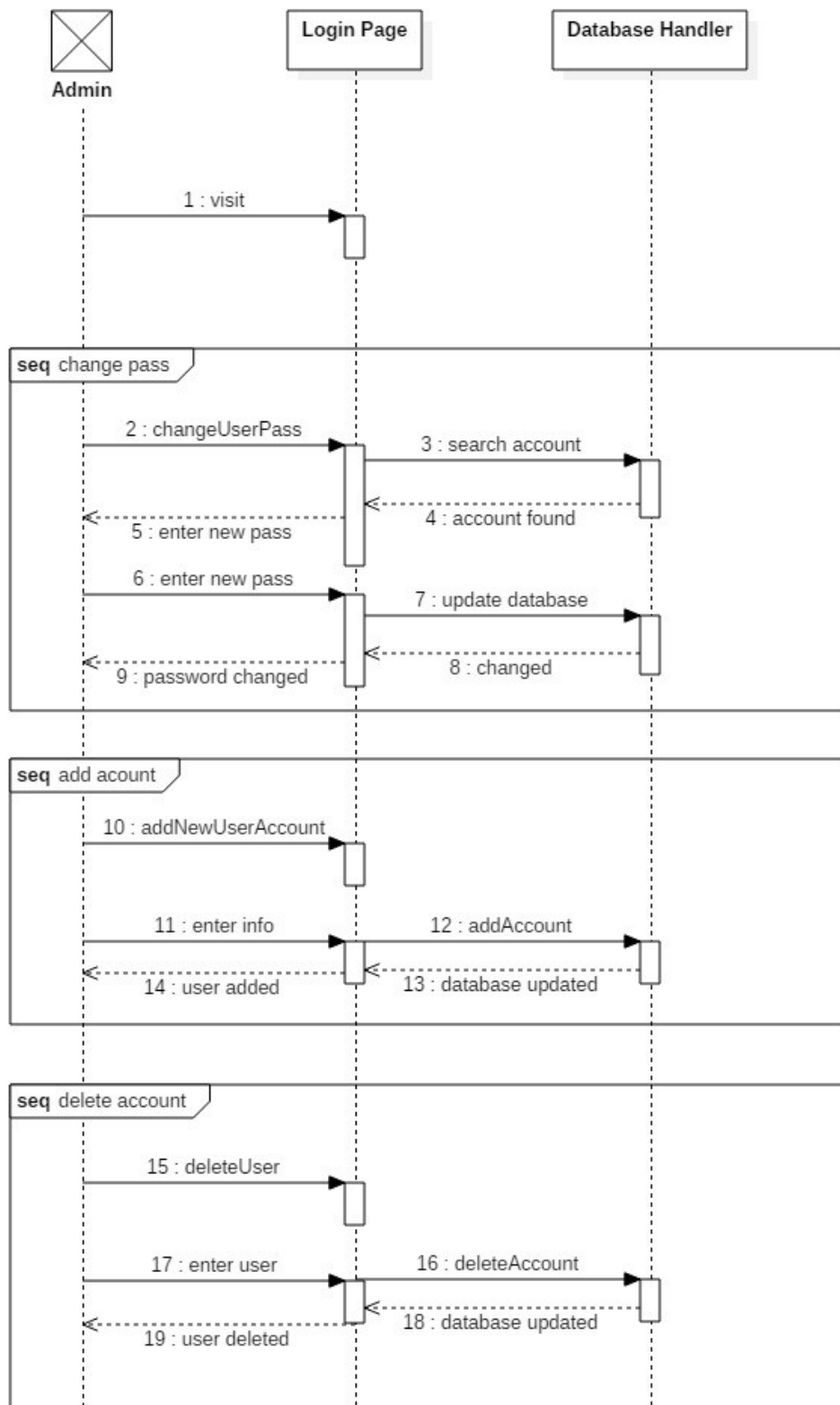
3 : Successfully logout



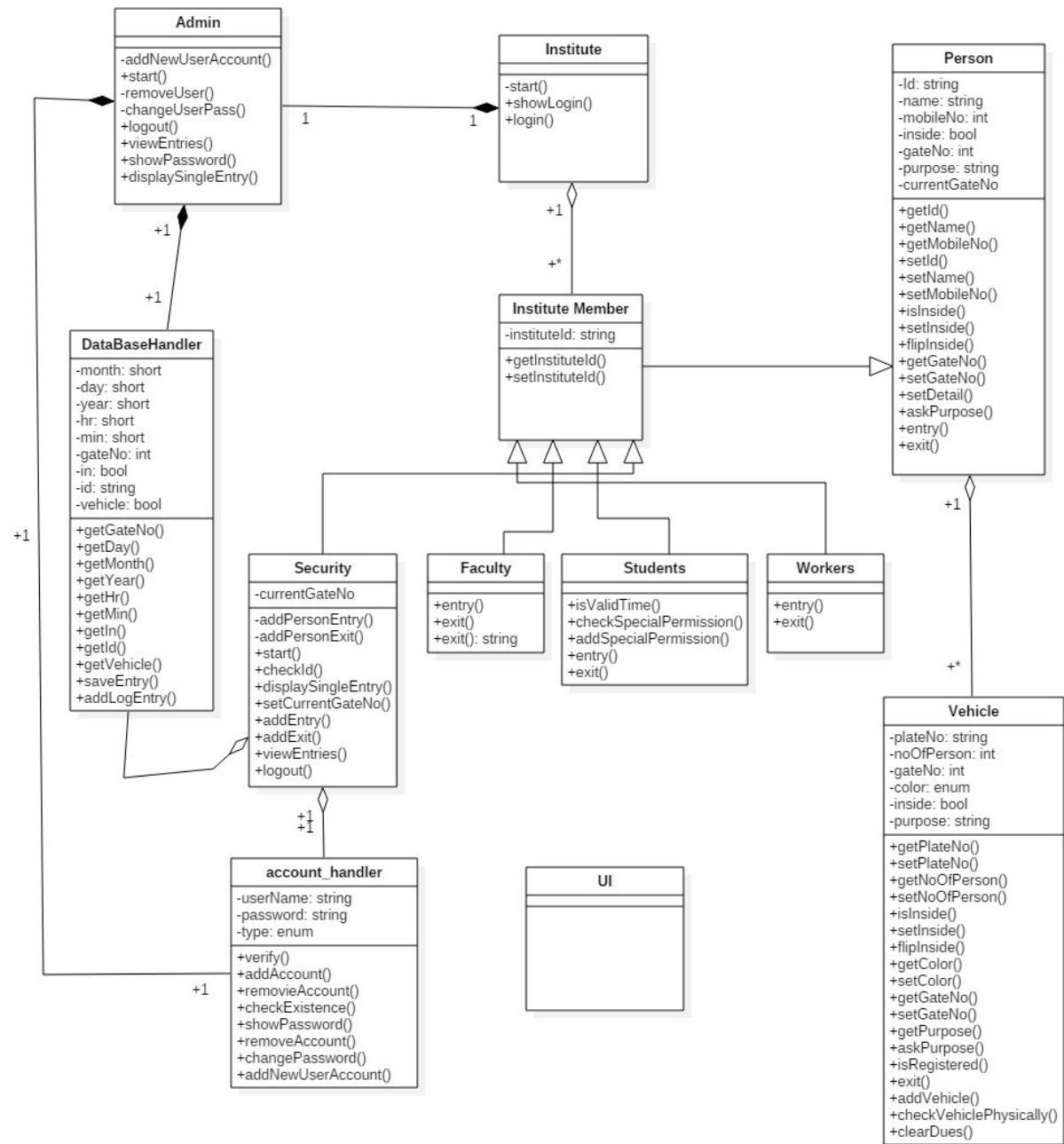
interaction VerifyExit(Institute)



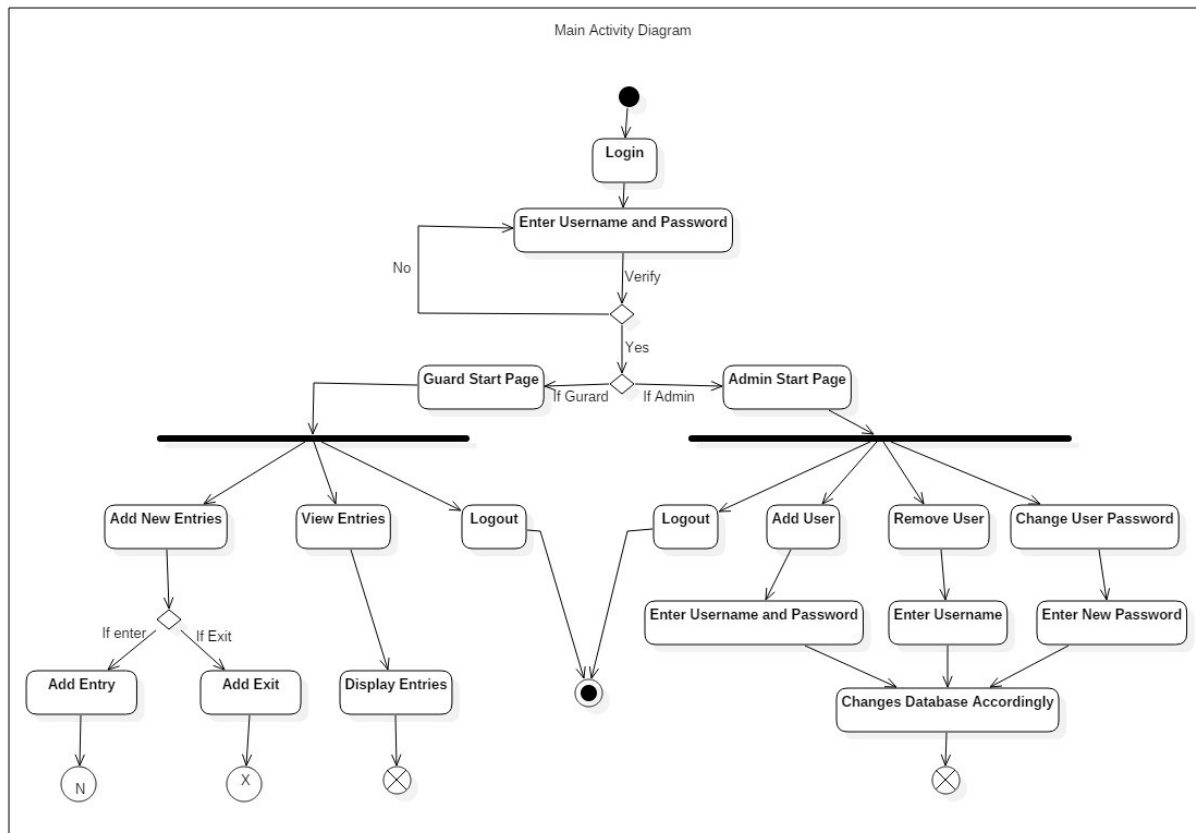
interaction admin



## 2.2.3. Class Diagram

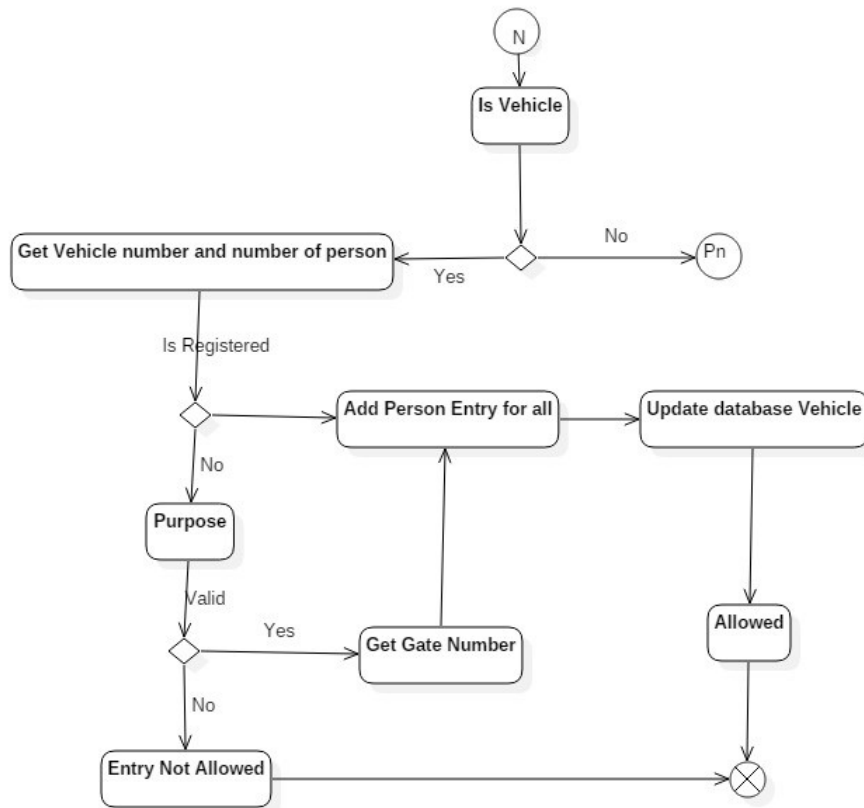


## 2.2.4. Activity Diagram



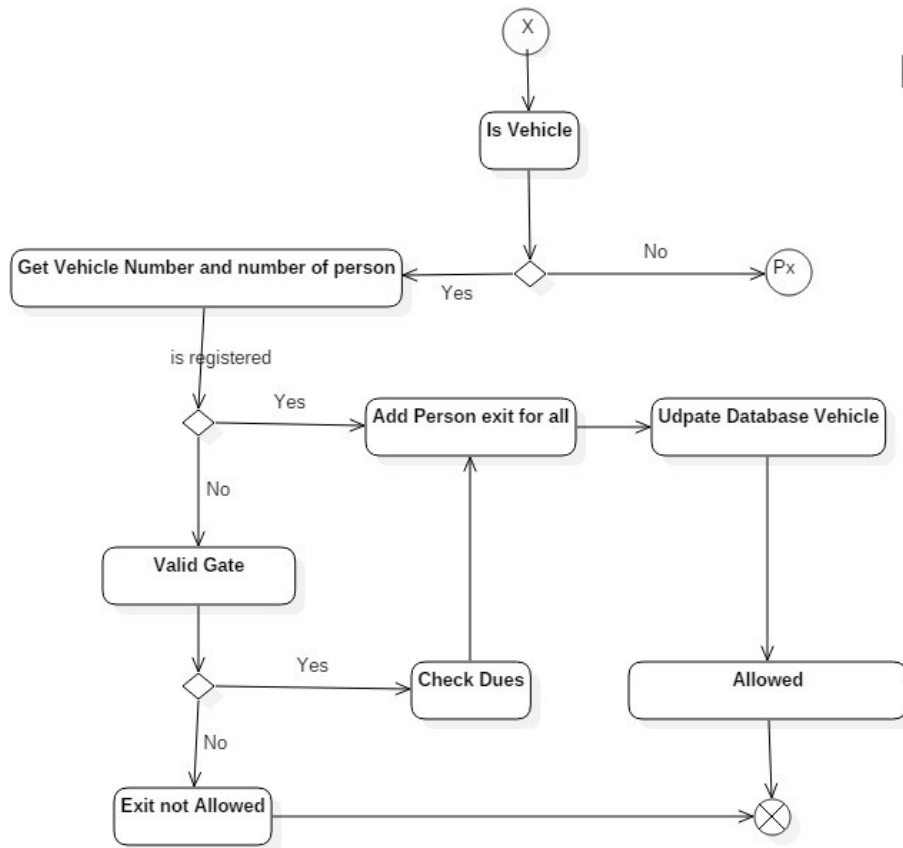
# Add Entry

N : Entry

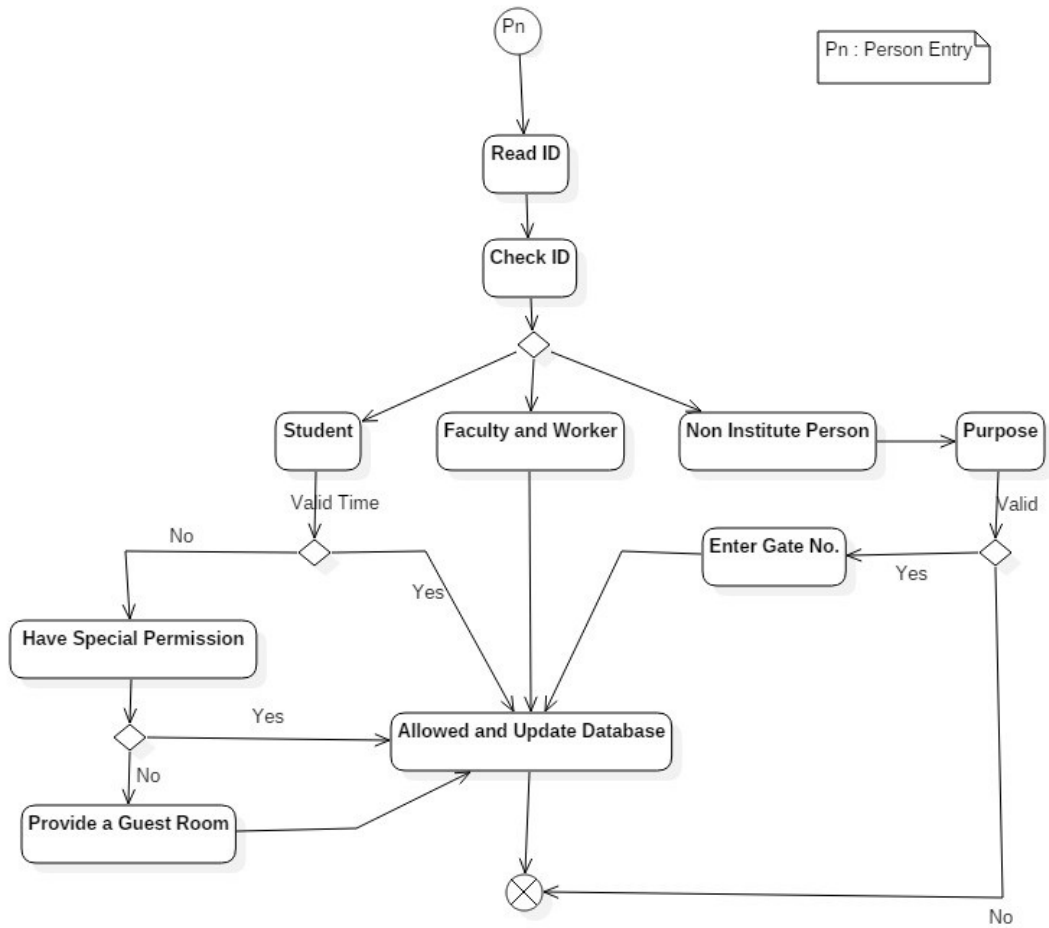




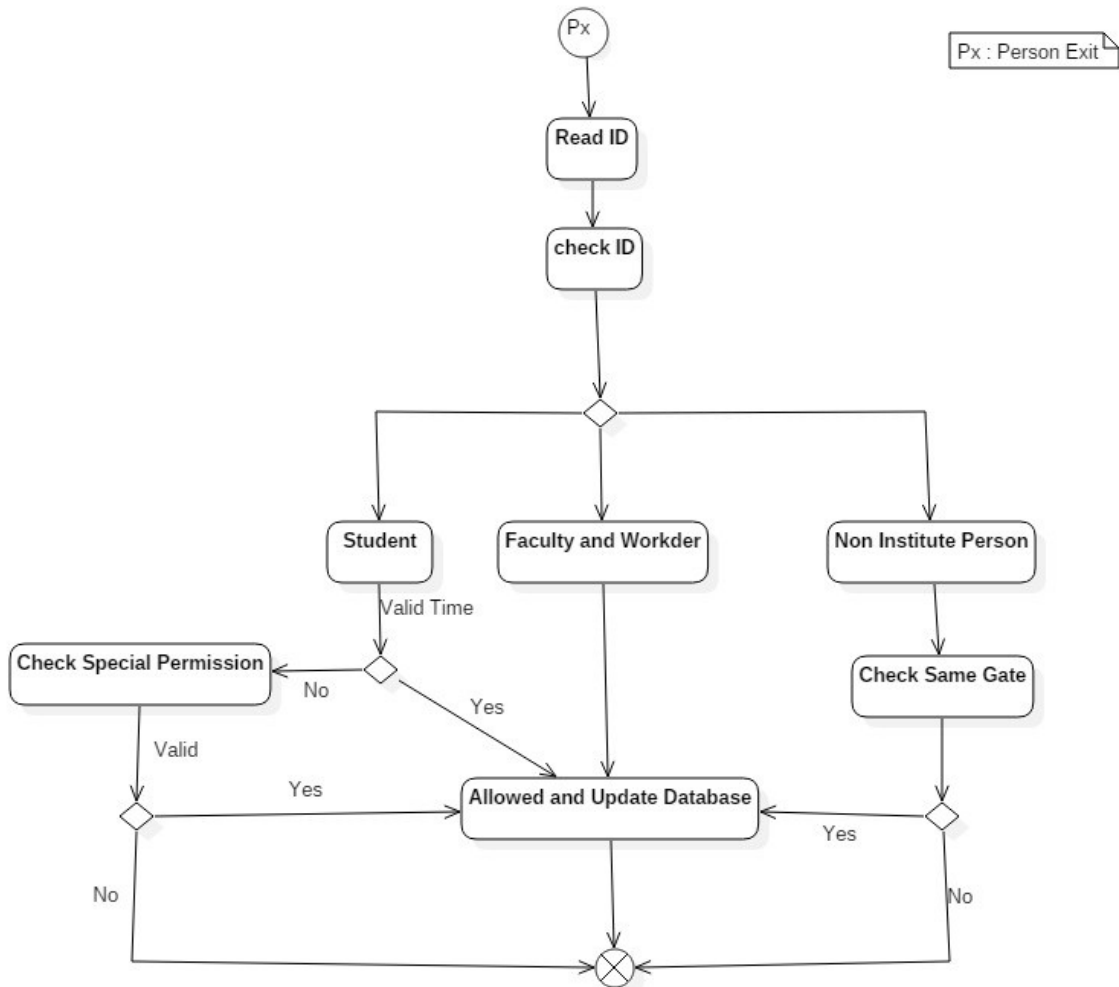
# Add Exit



# Add Person Entry



# Add Person Exit



## **2.3 User Characteristics**

There is only two type of user can use this software, and that are security guards and Admin.

The Security Guards will use this software to maintain and improve security of the campus by allowing what kind of person/vehicle will enter into the campus and for what amount of time some vehicles should be allowed into the campus.

Guard will also define a color for kind of Vehicle like if someone vehicle is banned from the campus then that vehicle is marked as black listed and guard will not allow such kind of vehicle to enter.

Guard will also make sure that the vehicle is only allowed to exit through the gate from which it enters the Institute except the registered vehicles.

Admin can add new users, remove existing users and change their password.

## **3.0. Requirements Specification**

### **3.1. Functional Requirements**

#### **3.1.1. Enter**

Use Case Name	Enter
Trigger	When Person wants to Enter the Institute
Precondition	1. Security Guard is present at the door with software 2. Person has ID either Institute or Non-institute ID (Adhar)
Basic Path	Person came to the Institute Gate and he wants to enter the Institute
Alternative Paths	No alternative path
Post Condition	Either he/she is allowed to enter the Institute or not
Exception Path	No
Other	No

### 3.1.2. Exit

Use Case Name	Exit
Trigger	When Person wants to Exit the Institute
Precondition	1. Security Guard is present at the door with software 2. Person has ID (Institute or Non-institute)
Basic Path	Person came to the Institute Gate and he wants to enter the Institute
Alternative Paths	No alternative path
Post Condition	Either he/she is allowed or not
Exception Path	No
Other	No

### 3.1.3. Add Entry

Use Case Name	Add Enter
Trigger	When someone wants to enter the Institute
Precondition	Person has ID
Basic Path	1. If person has vehicle, then count no. of person and check the vehicle is registered or not. 2. For non-registered vehicle asked for purpose and then note down gate number 3. Enter the detail of each Person in the vehicle if allowed and directed the vehicle to go in the parking region 4. Update database accordingly
Alternative Paths	If Person has not vehicle:  1. Check ID 2. For faculty, worker, student and non-institute person are allowed 3. Check for special permission in case if student wants exit in invalid time 4. Note down the gate no. for non-institute person 5. If allowed update database
Post Condition	Either entry is recorded or not
Exception Path	No
Other	Special guest vehicle are registered day before he/she came

### 3.1.4. Add Exit

Use Case Name	Add Exit
Trigger	When someone wants to exit the Institute
Precondition	Person has ID
Basic Path	<ol style="list-style-type: none"><li>5. If person has vehicle, then count no. of person and check the vehicle is registered or not.</li><li>6. For non-registered vehicle check gate then check due</li><li>7. Enter the detail of each Person in the vehicle</li><li>8. Update database accordingly</li></ol>
Alternative Paths	<p>If Person has not vehicle:</p> <ol style="list-style-type: none"><li>6. Check ID</li><li>7. For faculty, worker, student and non-institute person are allowed</li><li>8. For non-institute person check the gate no.</li><li>9. Check for special permission in case if student wants exit in invalid time</li><li>10.If allowed update database</li></ol>
Post Condition	Either exit is recorded or not
Exception Path	No
Other	Special guest vehicle are registered day before he/she came

### 3.1.5. View Entries

Use Case Name	View Entries
Trigger	When guard wants to check the previous entries
Precondition	Account should be login
Basic Path	<ol style="list-style-type: none"><li>1. Guard enter the detail of the entries</li><li>2. Result generated on the screen</li></ol>
Alternative Paths	No
Post Condition	Either entries are found or not
Exception Path	No
Other	Entries are view by Date, Name and ID.

### 3.1.6. Login

Use Case Name	Login
Trigger	User want to login
Precondition	Login screen must be appeared
Basic Path	1.Enter Username 2.Enter Password 3.Verfiy
Alternative Paths	No
Post Condition	If logged in, then redirected to main page Else redirected to login failure page
Exception Path	No

### 3.1.7. Logout

Use Case Name	Logout
Trigger	User wants to logout his account
Precondition	He must be logged in
Basic Path	Click on logout Button
Alternative Paths	No
Post Condition	The account is logout and Login screen appear
Exception Path	No
Other	No

### 3.1.8. Change User Password

Use Case Name	Change User Password
Trigger	When Admin wants to change user password
Precondition	Admin is logged in
Basic Path	<ol style="list-style-type: none"><li>1. Select username</li><li>2. Enter new password</li><li>3. Confirm new password</li><li>4. Database is updated</li></ol>
Alternative Paths	Change the file
Post Condition	Either password is changed or not
Exception Path	No
Other	No

### 3.1.9. Add User

Use Case Name	Add User
Trigger	When Admin wants to add new User
Precondition	Admin must be logged in
Basic Path	<ol style="list-style-type: none"><li>1. Enter new username</li><li>2. Check whether it is already existing or not</li><li>3. Provide the password then confirm it</li><li>4. Update database</li></ol>
Alternative Paths	Directly change in the file
Post Condition	New User is added
Exception Path	No
Other	No



### 3.1.10. Remove User

Use Case Name	Remove User
Trigger	When Admin wants to remove a user
Precondition	Admin must be logged in
Basic Path	<ol style="list-style-type: none"><li>1. Select username</li><li>2. Delete username</li><li>3. Update database</li></ol>
Alternative Paths	Remove from the file
Post Condition	User is removed
Exception Path	No
Other	No

### 3.1.11. Update Database

Use Case Name	Update Database
Trigger	<ol style="list-style-type: none"><li>1. Person enter or exit.</li><li>2. User want to see previous detail</li></ol>
Precondition	User must be Logged in
Basic Path	<ol style="list-style-type: none"><li>1. Check whether person want to enter or exit, or user want to see detail</li><li>2. Check whether person is already in/out.</li><li>3. If wants to enter than 'inside = true' otherwise 'inside = false'</li></ol>
Alternative Paths	Admin can also change the database forcefully
Post Condition	Database is updated
Exception Path	No
Other	'inside' is a variable which store whether a person is inside a campus or not

### **3.2 Detailed Non-Functional Requirements**

The computer must be connected to internet or LAN so it can sync the data to the database properly and the system should function properly.