



# Android App on NITC CLASS MANAGEMENT SYSTEM

---



Presented by :

Abhinaba Audhya (M120360CA) Leader  
Gagandeep Kaur (M120388CA)  
Jay Shankar Yadav (M120387CA)  
Sourav Das (M120358CA)  
Vikash Kumar (M120354CA)



# Introduction

---



- NITC CMS is an Android Application.
- Designed to help Faculty and Students of NITC.
- Faculty will be able to manage classes in a better way.
- Faculty will be able to take attendance and check student details from his mobile device.
- Students can view their attendance in subject and can check faculty details.



# Why NITC CMS?



- It makes attendance evaluation simple.
- Helps Faculty to get rid of paper documentation.
- Easily accessible from mobile device.
- Information about attendance and classes can be kept at one place.
- Facilitates students to check their attendance from mobile device.



# Literature Survey

---



- Most of the information gathered about how and why this project needs to be done is by observing how things are done and managed in NIT Calicut, specially the DSS.
- The needs of the students also played a vital role in deciding the requirements of this project.



# Requirements



## Overall System

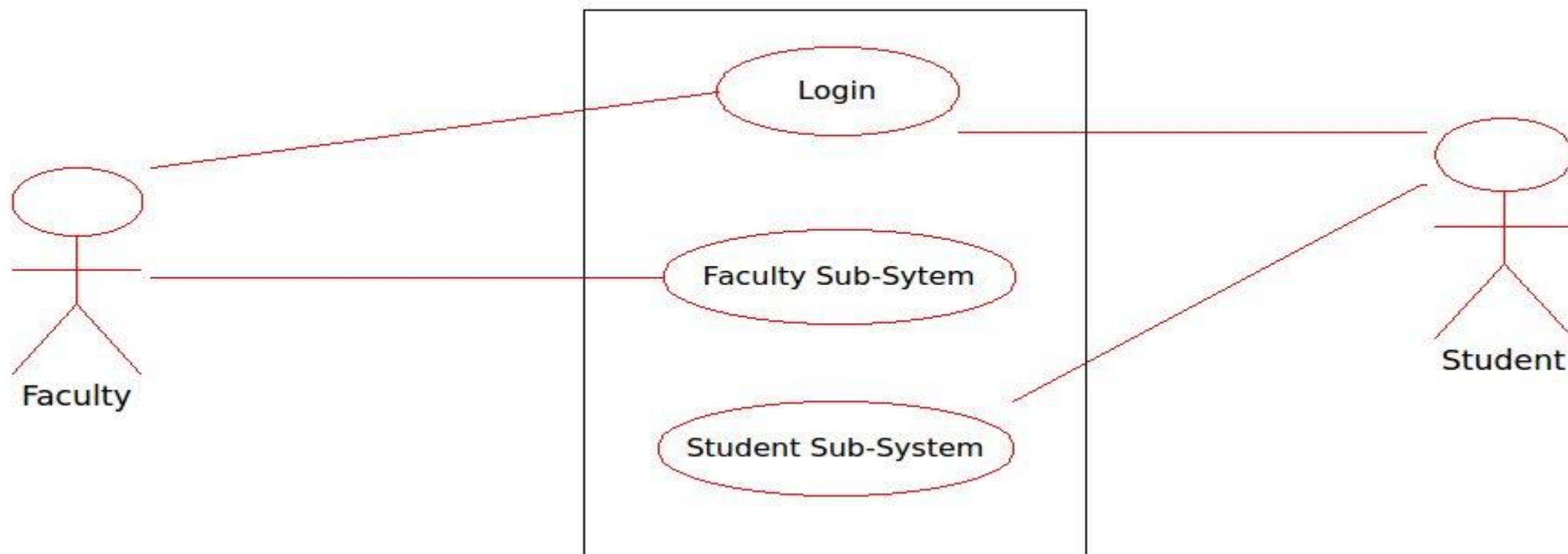


Figure 1 : NITC CMS Overall

## Faculty Sub-System

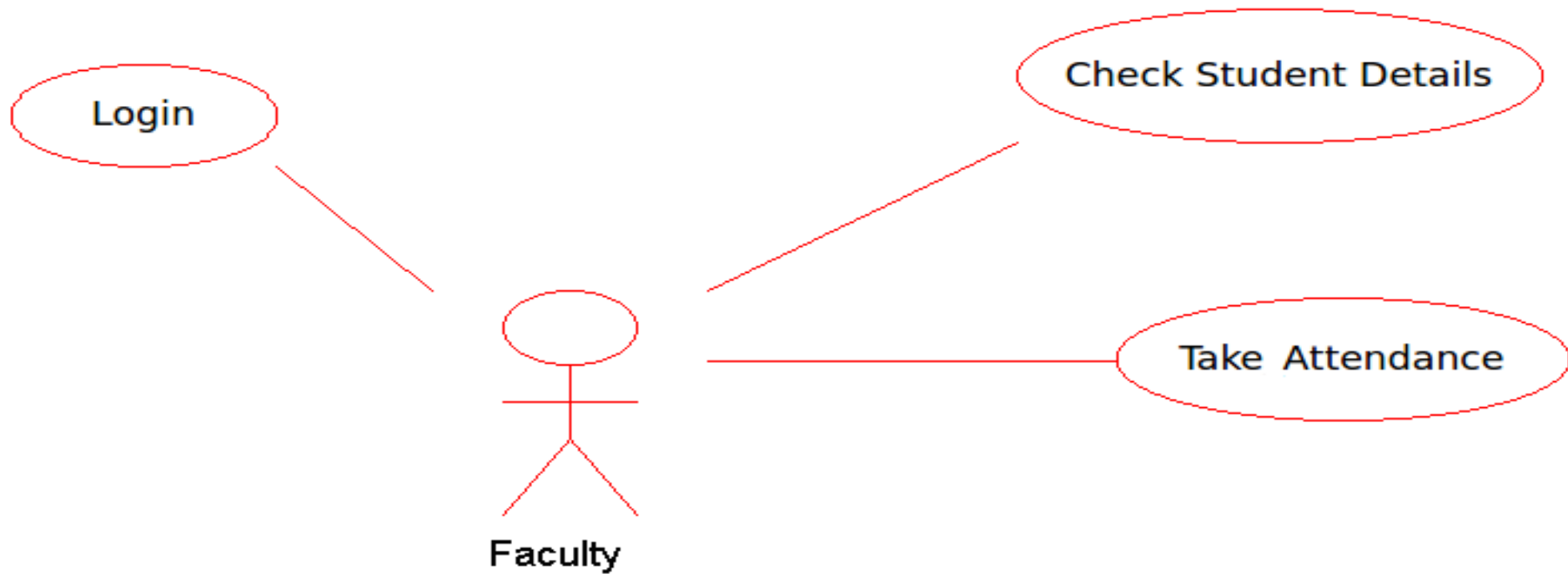


Figure 2 : Faculty Sub-System



## Use Case : Faculty Login

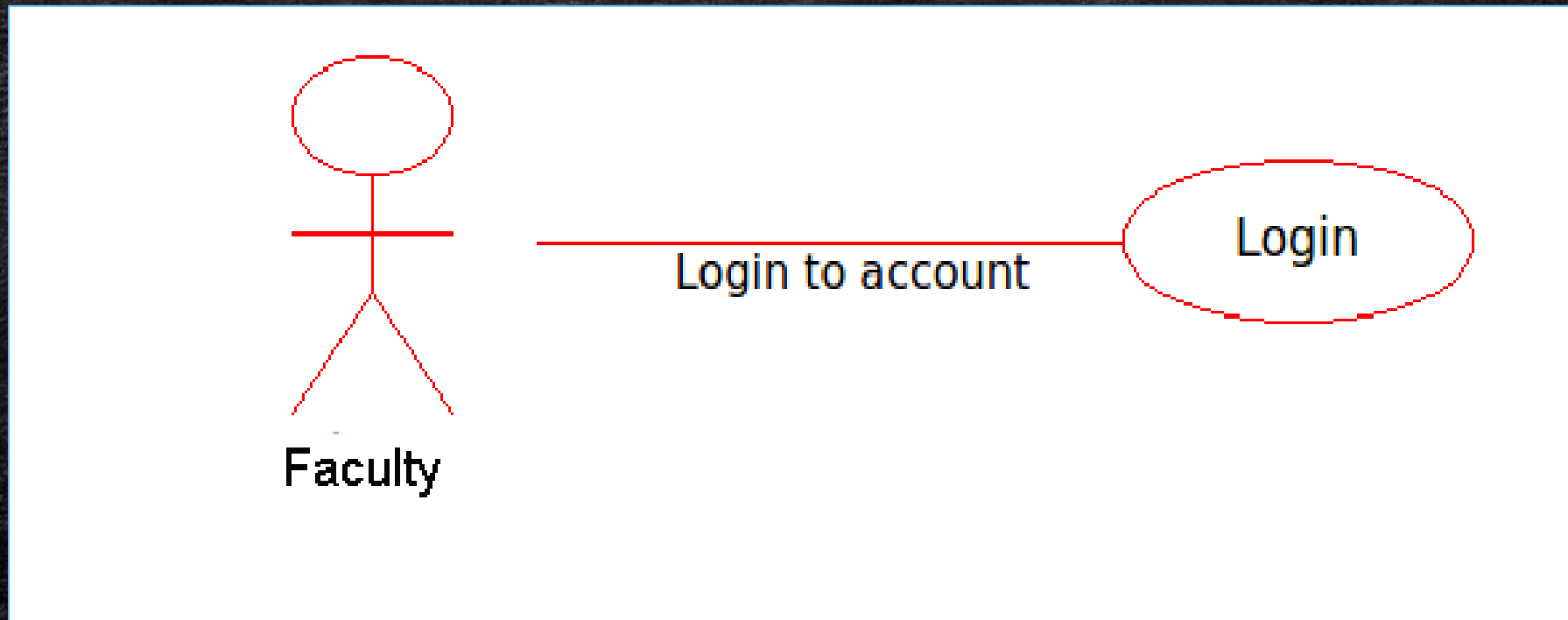


Figure 3 : Faculty Login





## Actors

Faculty

---

## Trigger

Faculty will access NITC CMS app.

## Precondition

NITC CMS App should be installed in the Faculty's android phone and should be connected to the Internet.

## Basic Path

- Class Management System launched from the Android home screen.
- The Faculty is prompted to enter Faculty Id and Password and then press Login button.
- This information is sent to server and verified with the details stored in the database.
- If the details are verified, then Faculty is authenticated.





## **Alternative Path**

None

## **Post Condition**

After the Faculty is authenticated, he/she is taken to the "Welcome" page.

## **Exception Path**

If the details entered by the Faculty are incorrect, or if Internet Connection is lost, then login fails.

## **Other**

Registration is not needed. Every Faculty will be given a unique Faculty Id and default password and will be provided with an option to change password.



# Use Case : Check Student Details

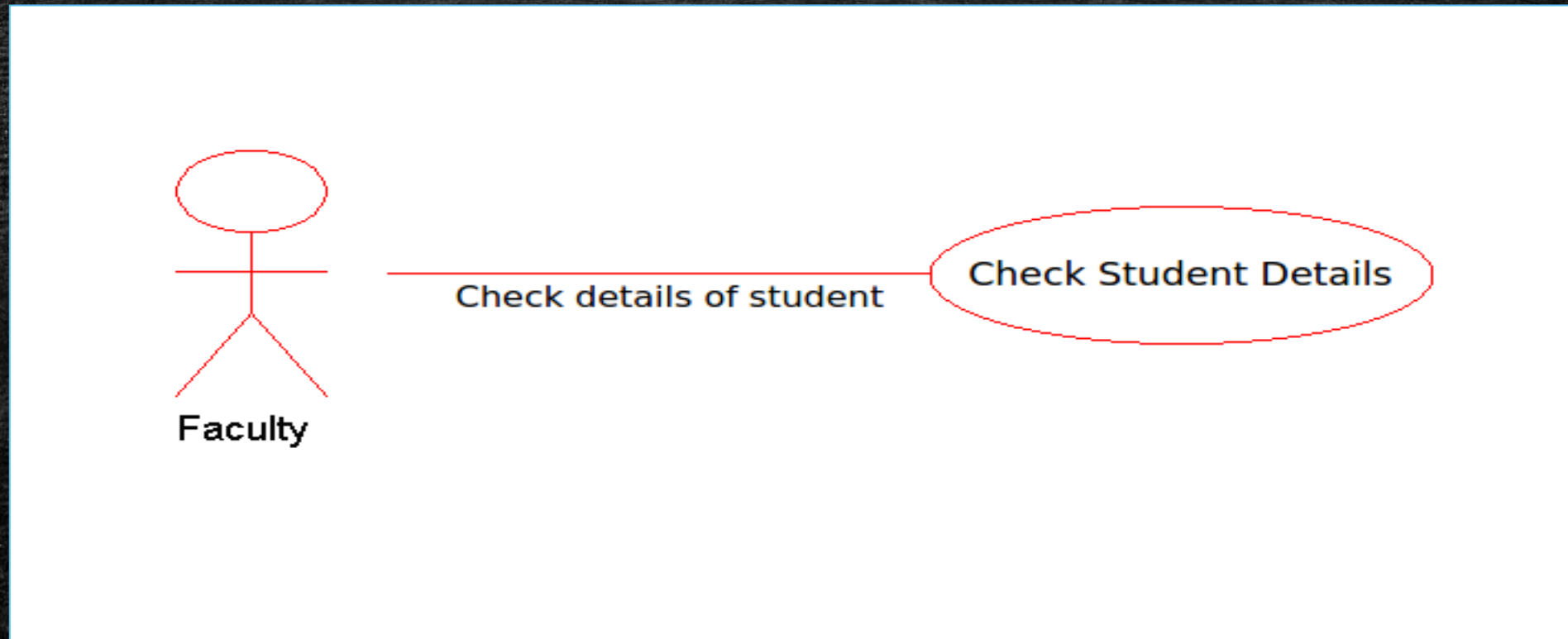


Figure 4 : Check Student Details





## Actors

Faculty

## Trigger

The Faculty selects "Check Student Details" from the Welcome screen.

## Precondition

The Faculty has successfully logged in his/her Id and Internet Connection is available.

## Basic Path

- When the Faculty selects "Check Student Details" option from **Welcome Screen**, page will appear containing the list of batches (classes) that Faculty takes.
- The Faculty will select any one Batch (class).
- After selecting Batch, screen containing list of students of that particular batch will appear.
- The Faculty can click on the student name to check his details.





## **Alternative Path**

None

---

## **Post Condition**

The details of the selected student will be displayed on the screen.

## **Exception Path**

If Internet Connection is lost, then details will not be retrieved from database.

## **Other**

Student details include name, roll number, email id, mobile number, classes missed, etc.



# Use Case : Take Attendance

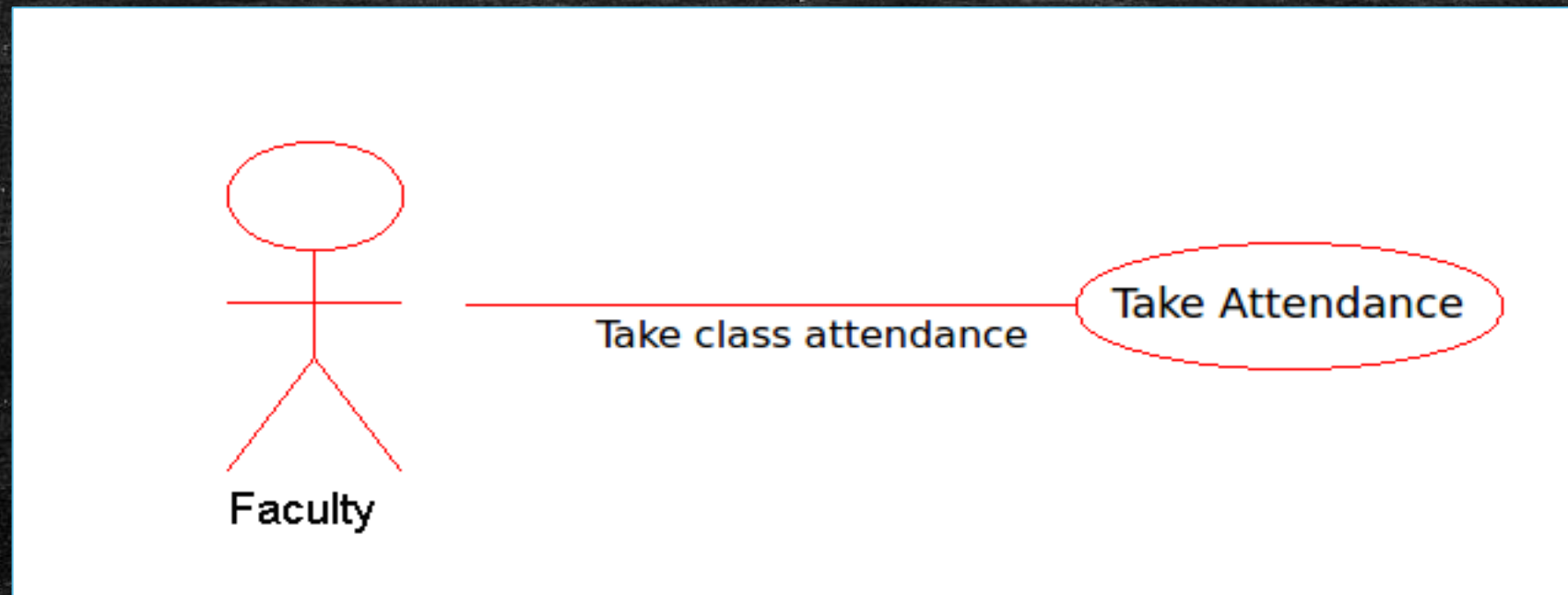


Figure 5 : Take Attendance



## Actors

Faculty



---

## Trigger

The Faculty selects "Take Attendance" from the Welcome screen.

## Precondition

The Faculty has successfully logged in his/her Id and Internet Connection is available.

## Basic Path

- When the Faculty selects "Take Attendance" option from **Welcome Screen**, page will appear containing the list of batches (classes) taken by that Faculty.
- The Faculty will select any one Batch (class).
- Selecting the Batch will display the list of students of that batch along with a check box beside their name.
- The Faculty can check each student who is absent and submit.





## Alternative Path

None

---

## Post Condition

After Submit, Attendance will be updated in the database.

## Exception Path

If Internet Connection is lost then details will not be updated in the database.



# Student Sub-System

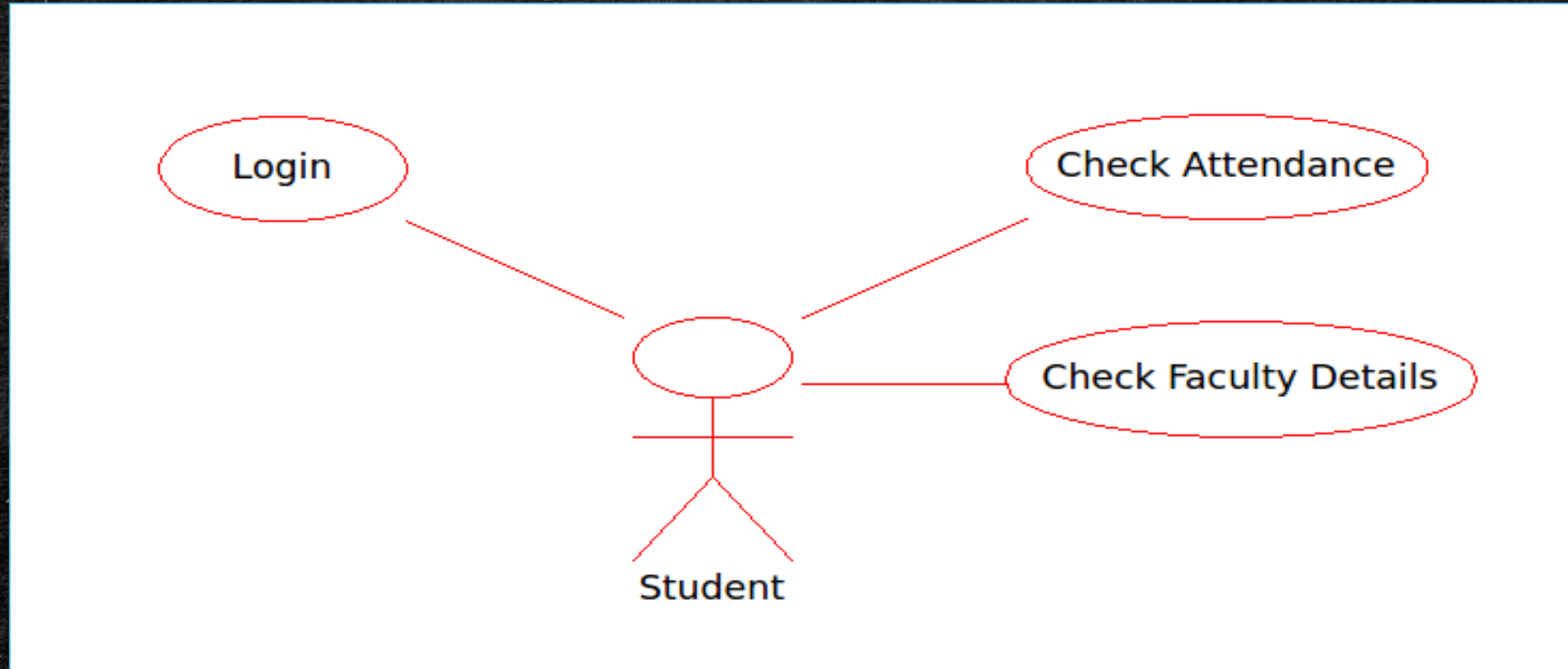


Figure 6 : Student Sub-System



# Use Case : Student Login

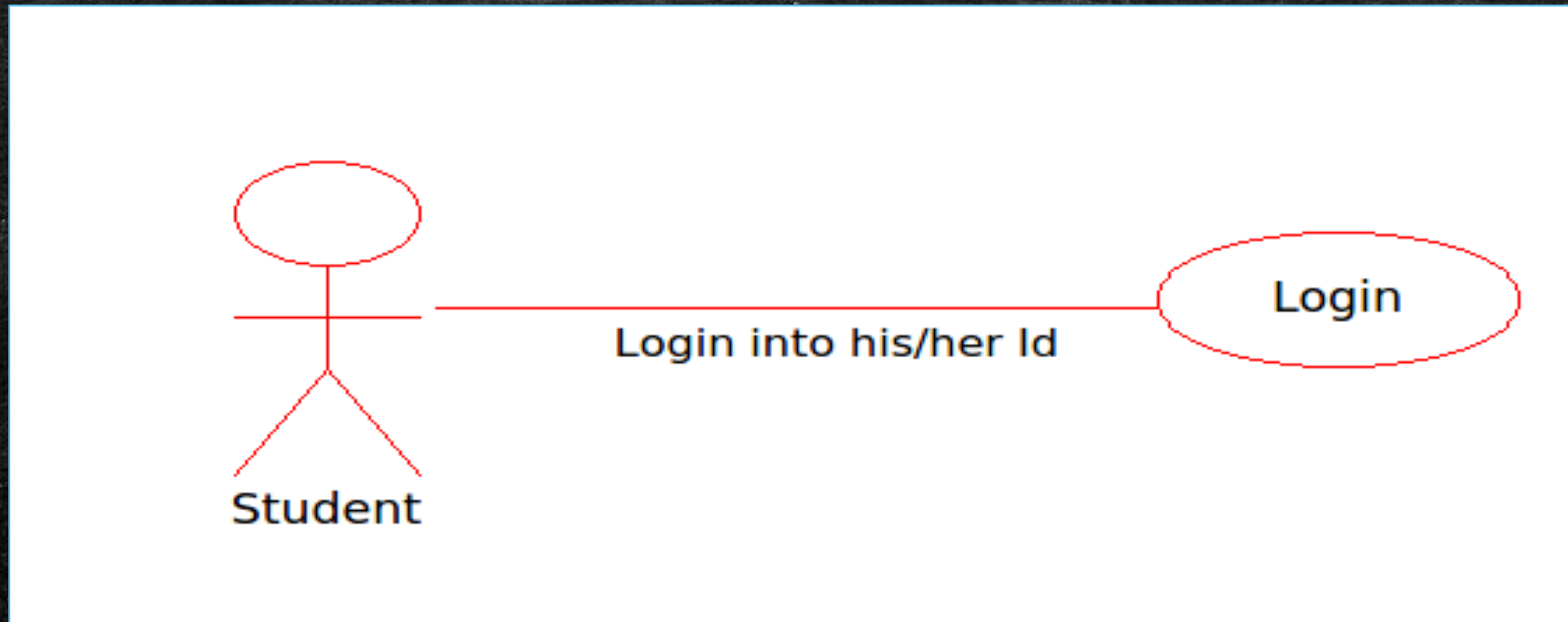


Figure 7 : Student Login



## Actors

Student



---

## Trigger

Student will access NITC CMS app.

## Precondition

NITC CMS App should be installed in the student's android phone and should be connected to the Internet

## Basic Path

- Class Management System launched from the Android home screen.
- The student is prompted to enter Student Id and Password and then press Login button.
- This information is sent to server and verified with the details stored in the database.
- If the details are verified, then user is authenticated.





## Alternative Path

None

## Post Condition

After the user is authenticated, he/she is taken to the “Welcome” page.

## Exception Path

If the details entered by the user are incorrect, or if Internet Connection is lost, then login fails.

## Other

Registration is not needed. Every student will be given unique Student Id and default password and will be provided with an option to change password.



# Use Case : Check Attendance

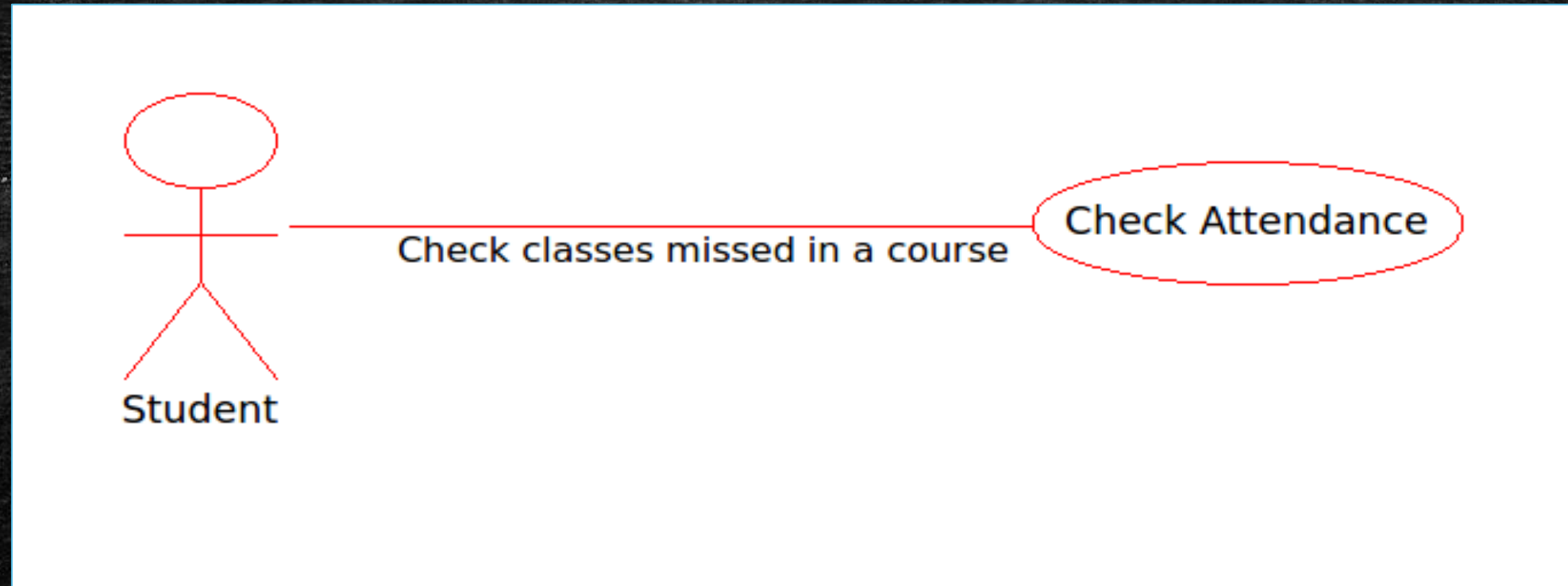


Figure 8 : Check Attendance



## Actors

Student



---

## Trigger

The student selects "Check Attendance" from the Welcome screen.

## Precondition

The student has successfully logged in his/her Id and Internet Connection is available.

## Basic Path

- When the student select "Check Attendance" option from **Welcome Screen**, page will appear containing the list of various courses, he/she has enrolled himself/herself, in the current semester.
- The student will select a course.





## **Alternative Path**

None

---

## **Post Condition**

Selecting a course will display the no. of classes missed by the student in the selected course.

## **Exception Path**

If Internet Connection is lost then details will not be retrieved from the database.



# Use Case : Check Faculty Details

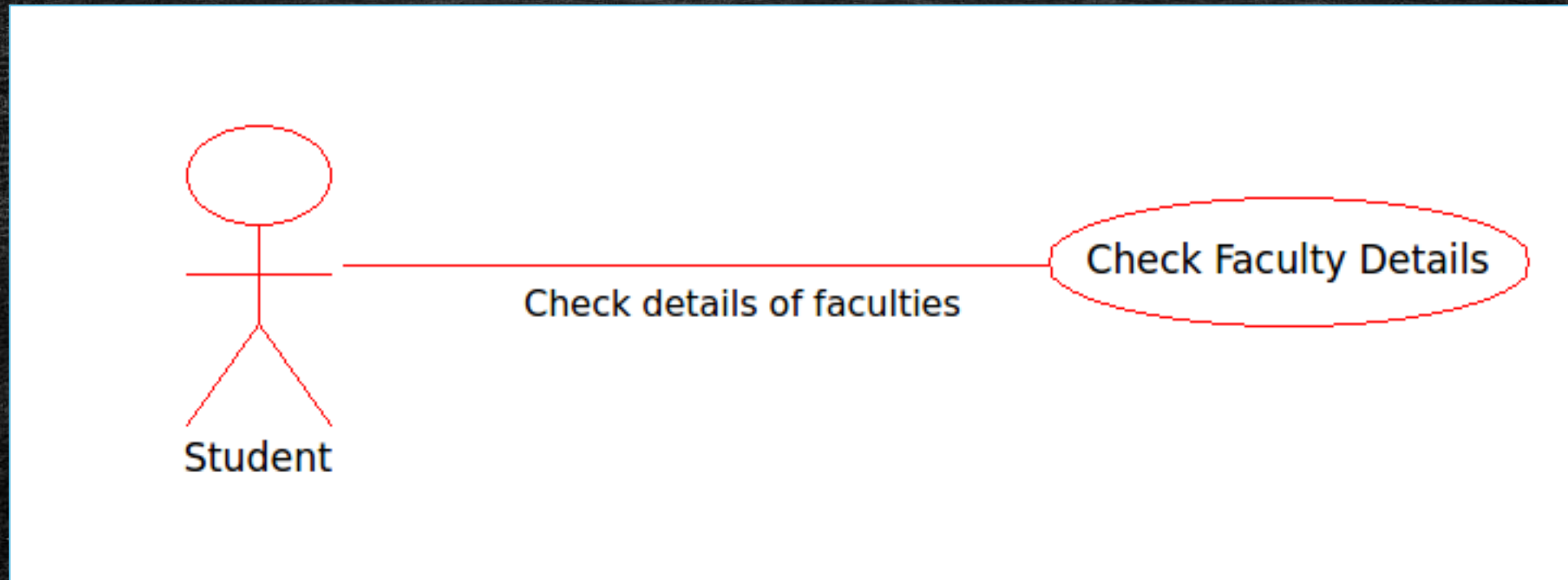


Figure 9 : Check Faculty Details





## Actors

Student

---

## Trigger

The student selects “Check Faculty Details” from the Welcome screen.

## Precondition

The student has successfully logged in his/her Id and Internet Connection is available.

## Basic Path

- When the student selects “Check Faculty Details” option from **Welcome Screen**, page will appear containing the list of faculties taking classes for him/her.
- The student will select any faculty to check his/her details.





## **Alternative Path**

None

---

## **Post Condition**

The details of the selected faculty will be displayed on the screen.

## **Exception Path**

If Internet Connection is lost then details will not be retrieved from database.

## **Other**

Faculty details includes the Faculty's name and the basic contact details like a mobile number and an email.



# Work Done



## Entity Relationship Diagram

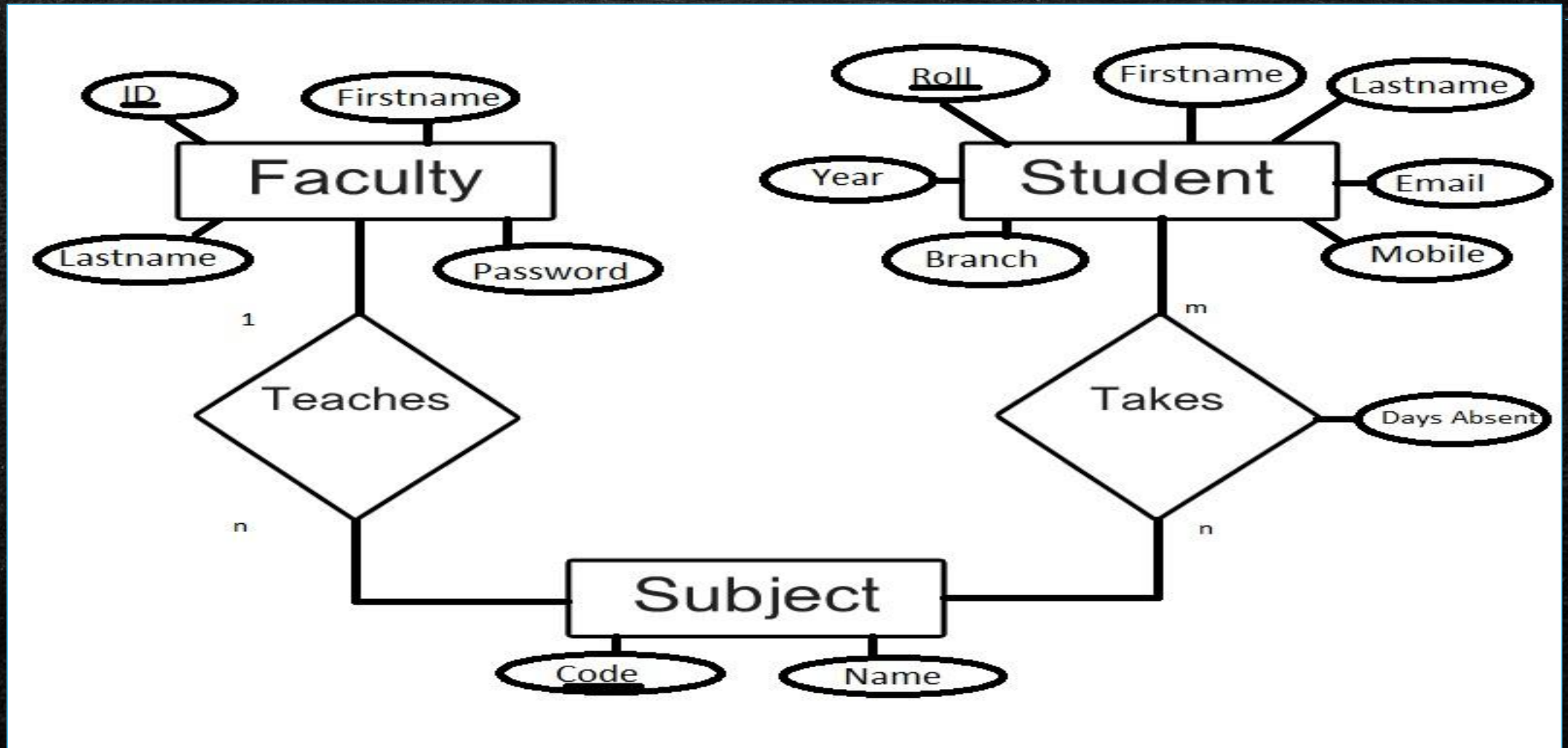


Figure 10 : ERD





# Database Design

The NITC CMS database has the following 5 tables, which are normalized up to Boyce-Codd Normal Form (BCNF).

## Student Table

Server: 182.50.131.76 ▶ Database: classmanagement ▶ Table: Student

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

	Field	Type	Collation	Attributes	Null	Default	Extra	Action					
<input type="checkbox"/>	<u>Roll</u>	varchar(9)	utf8_general_ci		No								
<input type="checkbox"/>	Firstname	varchar(30)	utf8_general_ci		No								
<input type="checkbox"/>	Lastname	varchar(20)	utf8_general_ci		No								
<input type="checkbox"/>	Mobile	varchar(12)	utf8_general_ci		No								
<input type="checkbox"/>	Email	varchar(50)	utf8_general_ci		No								
<input type="checkbox"/>	Branch	varchar(8)	utf8_general_ci		No								
<input type="checkbox"/>	Year	year(4)			No								

↑ Check All / Uncheck All With selected:

Figure 11 : Student Table

**Note :** A relation schema R is in BCNF if whenever a nontrivial functional dependency  $X \rightarrow Y$  holds in R, then X is a superkey of R. [REF1]



## Faculty Table



Server: 182.50.131.76 ▶ Database: classmanagement ▶ Table: Faculty

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

	Field	Type	Collation	Attributes	Null	Default	Extra	Action					
<input type="checkbox"/>	<u>Teacher_ID</u>	varchar(10)	utf8_general_ci		No								
<input type="checkbox"/>	T_Firstname	varchar(30)	utf8_general_ci		No								
<input type="checkbox"/>	T_Lastname	varchar(20)	utf8_general_ci		No								
<input type="checkbox"/>	Password	varchar(20)	utf8_general_ci		No								

↑ [Check All / Uncheck All](#) With selected:

Figure 12 : Faculty Table

## Subject Table

Server: 182.50.131.76 ▶ Database: classmanagement ▶ Table: Subject

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

	Field	Type	Collation	Attributes	Null	Default	Extra	Action					
<input type="checkbox"/>	<u>Sub_Code</u>	varchar(7)	utf8_general_ci		No								
<input type="checkbox"/>	Sub_Name	varchar(50)	utf8_general_ci		No								

↑ [Check All / Uncheck All](#) With selected:

Figure 13 : Subject Table



## Student\_Sub Table



Server: 182.50.131.76 ▶ Database: classmanagement ▶ Table: Stud\_Subj

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

	Field	Type	Collation	Attributes	Null	Default	Extra	Action					
<input type="checkbox"/>	<u>Sub_Code</u>	varchar(7)	utf8_general_ci		No								
<input type="checkbox"/>	<u>Roll</u>	varchar(9)	utf8_general_ci		No								
<input type="checkbox"/>	Absent_Days	int(11)			Yes	0							
↑	Check All / Uncheck All With selected:												

Figure 14 : Student\_Sub Table

## Faculty\_Sub Table

Server: 182.50.131.76 ▶ Database: classmanagement ▶ Table: Faculty\_Sub

[Browse](#) [Structure](#) [SQL](#) [Search](#) [Insert](#) [Export](#) [Import](#) [Operations](#) [Empty](#) [Drop](#)

	Field	Type	Collation	Attributes	Null	Default	Extra	Action					
<input type="checkbox"/>	<u>Sub_Code</u>	varchar(7)	utf8_general_ci		No								
<input type="checkbox"/>	<u>Teacher_ID</u>	varchar(10)	utf8_general_ci		No								
↑	Check All / Uncheck All With selected:												

Figure 15 : Faculty\_Sub Table



# Prototyping and UI Design



## Login Screen

A mobile app login screen mockup. At the top is a status bar with icons for signal, Wi-Fi, Bluetooth, and battery at 65%, along with the time 11:35 PM. Below this is a dark header bar with a blue owl icon and the text 'NITC CMS'. The main area has a blue background with the text 'NITC CLASS MANAGEMENT SYSTEM' in large, bold, white letters, followed by 'LOGIN' in smaller white letters. There are two input fields: 'TEACHER\_ID : ' followed by a white text box, and 'PASSWORD : ' followed by a white text box. At the bottom center is a grey button with the text 'LOGIN' in white.

Figure 16 : Login Screen



## Welcome Screen

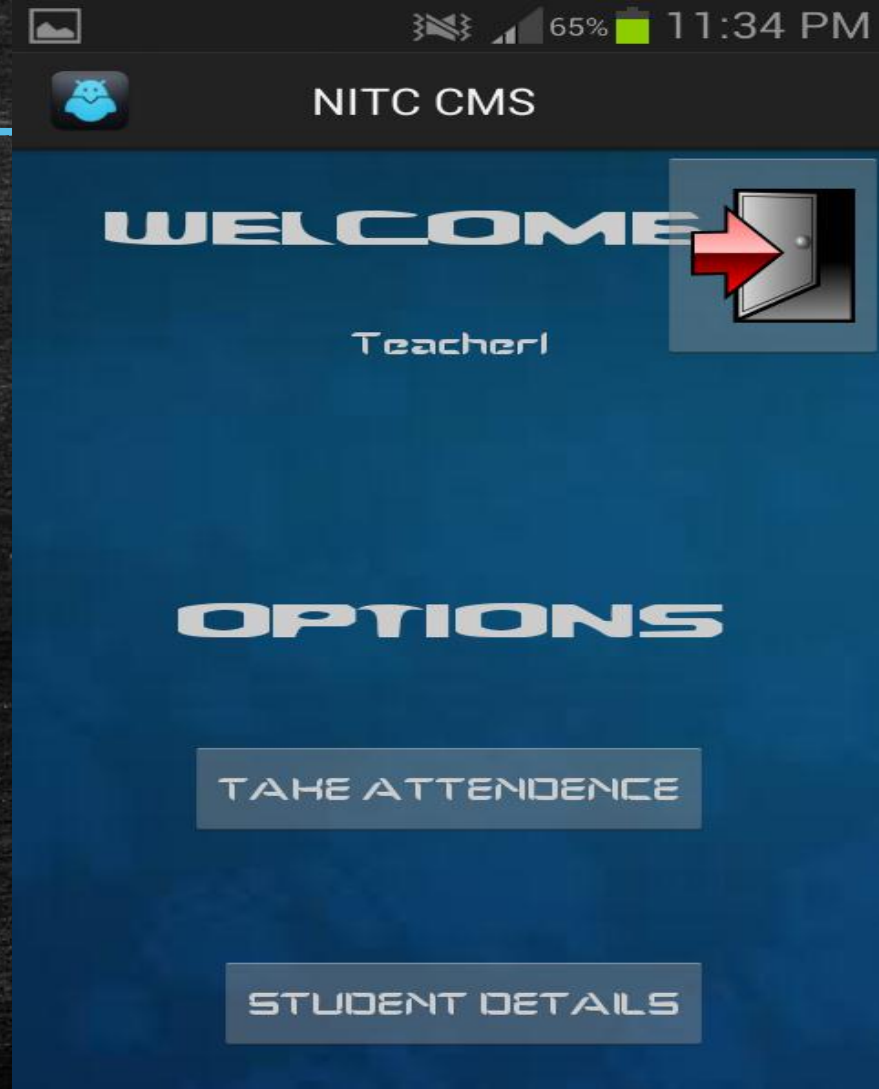


Figure 17 : Welcome Screen



## Subject List Screen

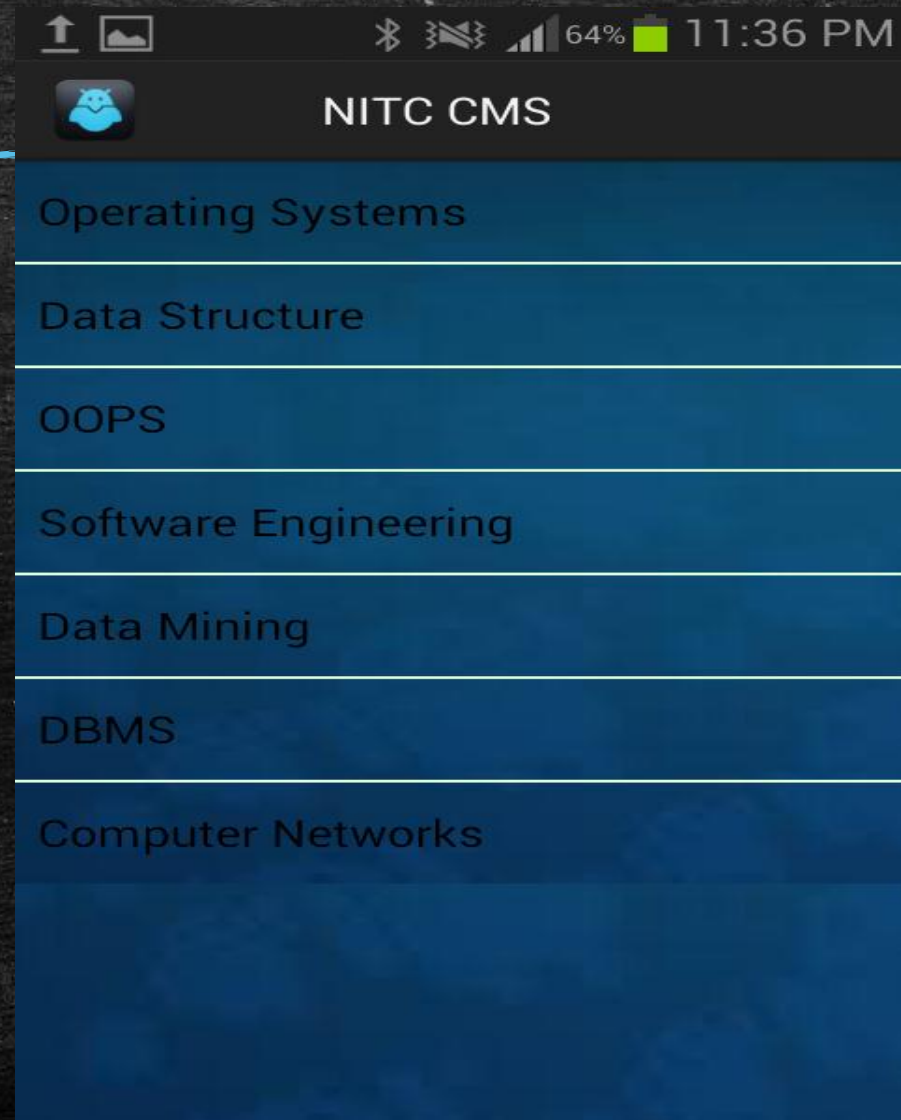


Figure 18 : Subject List Screen



## Attendance Screen



Bluetooth, Signal, E, 63%, 11:39 PM

 NITC CMS

Ravi Tamada	<input checked="" type="checkbox"/>
Johnny Depp	<input checked="" type="checkbox"/>
Leonardo Dicaprio	<input checked="" type="checkbox"/>
John Wayne	<input type="checkbox"/>
Angelina Jolie	<input type="checkbox"/>
Dido	<input type="checkbox"/>
Adele	<input type="checkbox"/>
Hugh Jackman	<input checked="" type="checkbox"/>
Will Smith	<input checked="" type="checkbox"/>
Clint Eastwood	<input type="checkbox"/>
Barack Obama	<input type="checkbox"/>
Kate Winslet	<input type="checkbox"/>

Figure 19 : Attendance Screen



## Student Details Page

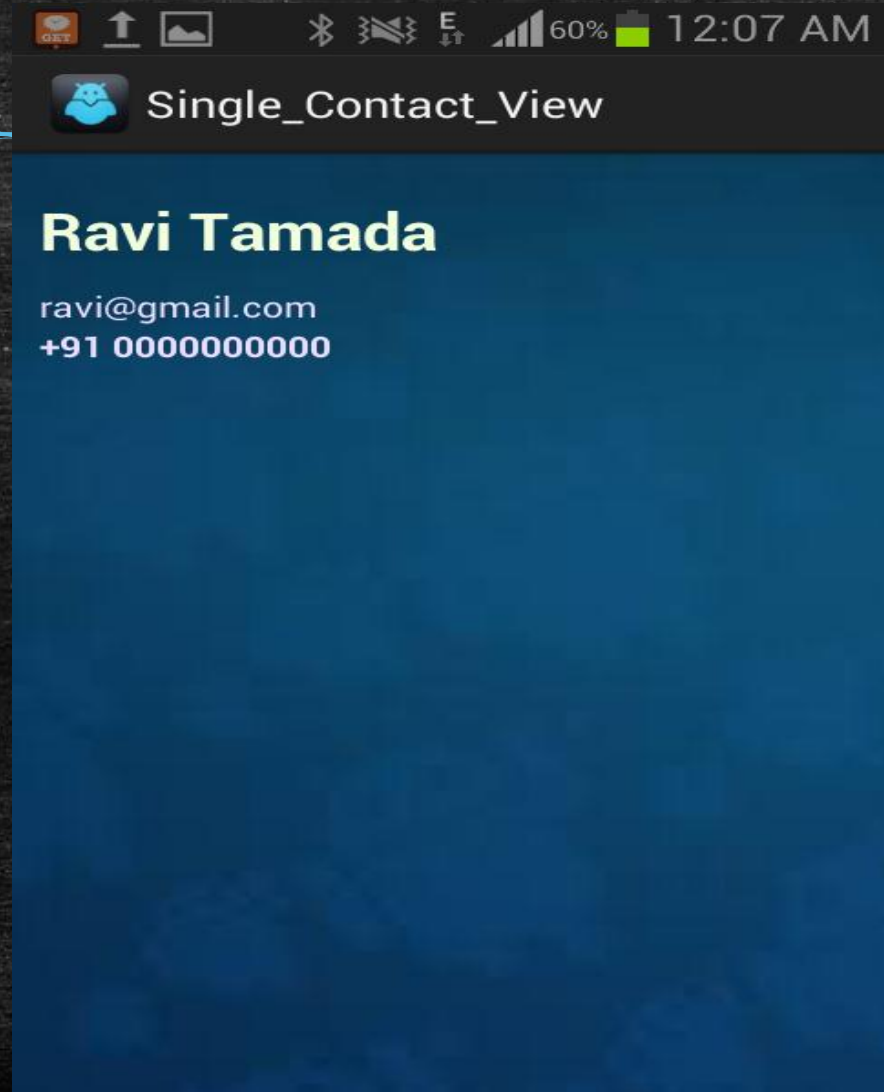


Figure 20 : Student Details Screen



# Plan Of Work



## NITC CMS

Task	Responsible	Status	Year 1											
			1	2	3	4	5	6	7	8	9	10	11	12
<b>Baseline survey</b>														
Design survey	Sourav and Gagandeep	Complete												
Collect data	Jay Shankar and Vikash	Complete												
Write report	Gagandeep	Complete												
<b>Training</b>														
Training Team Mates	Abhinaba and Sourav	In progress												
Giving Demo to Customer	Abhinaba and Sourav	Not started												
<b>Implementation</b>														
Database Design	Sourav and Gagandeep	In progress												
Interface Design	Abhinaba and Gagandeep	In progress												
Database Maintainance and Data Entry	Jay Shankar and Vikash	In progress												
Client Site Coding	Abhinaba and Sourav	In progress												
Server Site Coding	Sourav,Vikash and Jay Shankar	In progress												
Debugging	Abhinaba and Sourav	Not started												
<b>Endline survey and evaluation</b>														
Design survey and interviews	Jay,Vikash and Gagandeep	Not started												
Analyse data and technical issues	Abhinaba and Sourav	Not started												
Write report	Gagandeep	Not started												





# Conclusion

---

- Android being an upcoming revolution in latest market can be exploited very well for one's benefit and our software "NITC CMS" does it well.
- The software is very flexible and versatile in nature i.e Anytime addition and deletion of any feature is possible as mentioned in the next slide.
- NITC CMS will come in handy for both students and teachers of NITC once it becomes fully functional.



# Future Perspective



- To include the feature so that students can view their marks from the mobile application. For this, we need to implement an interface for larger devices so that the Faculties can insert marks in the system.
- To improve the way how the attendance is managed, by adding more details to it.
- User Manual will be included.
- More features like change password, profile customization can be added.





# References

---

- [1.] [android-er.blogspot.in](http://android-er.blogspot.in)
- [2.] [www.Stackoverflow.com](http://www.Stackoverflow.com)
- [3.] [www.Google.com](http://www.Google.com)
- [4.] Android Tutorials
- [5.] REF<sub>1</sub> – Fundamentals of Database Systems by Elmasari and Navathe