

## CHAPTER 1

### INTRODUCTION

#### 1.1 Introduction to DBMS

A database management system (DBMS) refers to the technology for creating and managing databases. Basically, DBMS is a software tool to organize (create, retrieve, update and manage) data in a database.

The main aim of a DBMS is to supply a way to store up and retrieve database information that is both convenient and efficient.

#### 1.2 Introduction to SQL

Structure Query Language (SQL) is a programming language used for storing and managing data in RDBMS. SQL was the first commercial language introduced for E.F Codd's Relational model. Today almost all RDBMS (MySQL, Oracle, Infomix, Sybase, MS Access) uses SQL as the standard database language. SQL is used to perform all type of data operations in RDBMS.

#### 1.3 Overview of the project

- The Attendance Management System is a software created for the automation and digitization of Attendance Recording.
- This software will be used by 2 kinds of users:
  - Professors
  - Administrators
- Administrators will be able to link new students, professors and admins to the software. They will also have the privileges to edit the details about the users and view all information about the database.
- Professors will be able to use this software just like an attendance register. Additionally, they can make Attendance analysis for a class or a student on choice.

## 1.4 Aim of the project

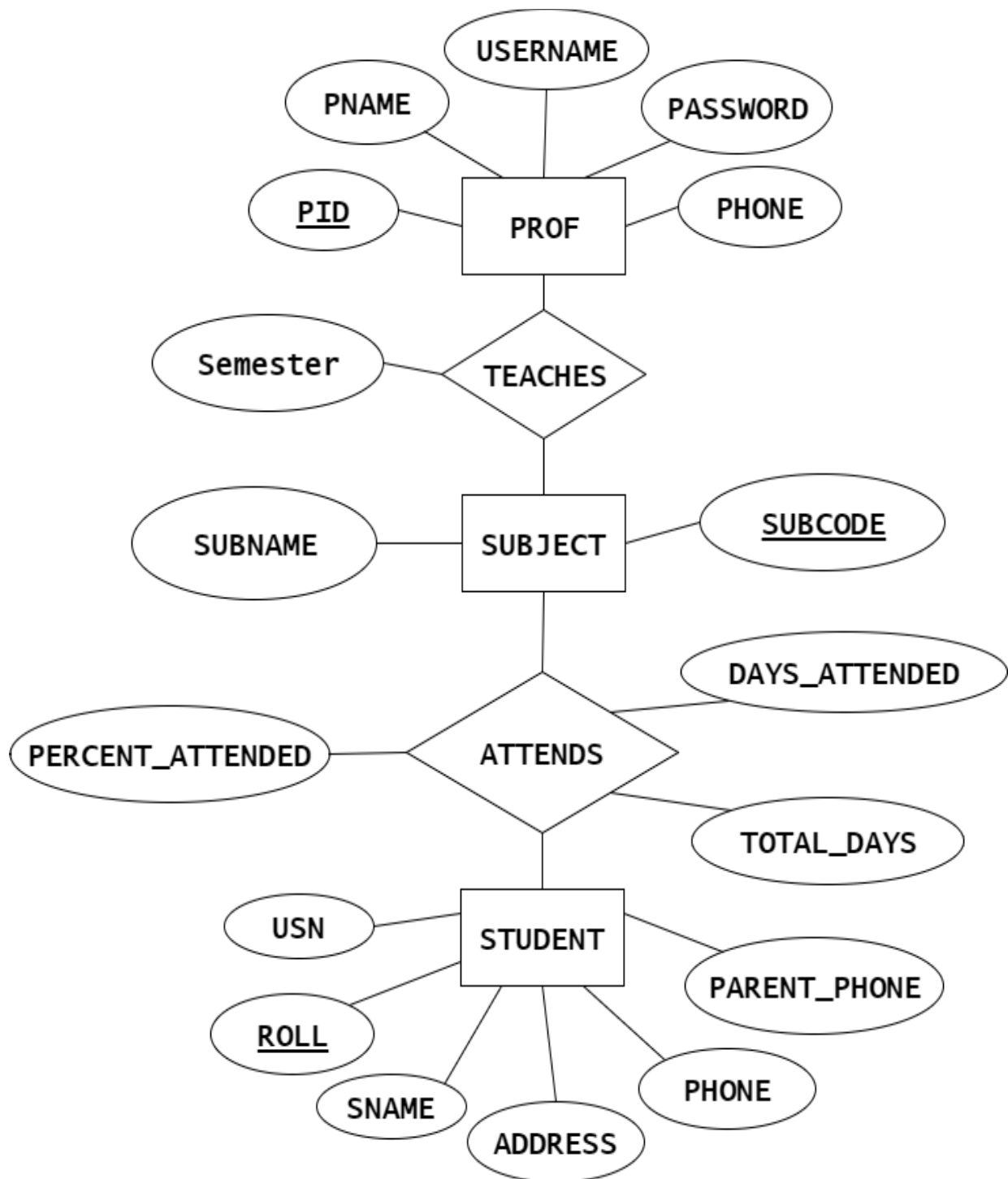
- This project aims at creating software for facilitating Attendance Recording and Analysis System.
- The team aims to digitize the Attendance Recording System and promote eco-friendliness by being able to reduce, if not eradicate, the use of hard copies involved in maintaining an Attendance Record for an educational institution.

## 1.5 Software Requirements

- Operating System: Windows 7 or Higher
- Programming Language: Java
- Tools / software: Oracle 11g Application Express

## CHAPTER 2

### ENTITY RELATIONSHIP DIAGRAM



### ❖ ENTITIES INVOLVED:

- PROFESSOR
- STUDENT
- SUBJECT

### ❖ RELATIONSHIPS INVOLVED:

- (professor) TEACHES (subject to student)
- (student) ATTENDS (the subject taught by professor)

## CHAPTER 3

### ER TO RELATIONAL MAPPING

#### ❖ PROFESSOR ATTRIBUTES:

PID: Unique Identification Number for every Professor

PNAME: Name of the Professor

USERNAME: user name of the professor used to Login

PASSWORD: Authentication password for Logging in

PHONE: Phone number of the Professor

#### ❖ STUDENT ATTRIBUTES:

ROLL: Roll number of a Student

USN: University Serial Number of the Student

SNAME: Name of the Student

ADDRESS: The address of the Student

PHONE: Phone number of the Student

PARENT\_PHONE: Phone number of the Student's parent.

#### ❖ SUBJECT ATTRIBUTES:

SUBCODE: Subject Code provided by the University

SUBNAME: Name of the Subject

#### ❖ TEACHES ATTRIBUTES:

PID: PID referenced from the PROFESSOR's PID attribute

SUBCODE: SUBJECT CODE referenced from the SUBJECT'S SUBCODE attribute

SEM: Semester

#### ❖ ATTENDS ATTRIBUTES:

ROLL: ROLL referenced from STUDENT'S ROLL attribute

SUBCODE: SUBJECT CODE referenced from the SUBJECT'S SUBCODE

DAYS\_ATTENDED: The number of days the STUDENT has attended.

TOTAL\_DAYS: the total number of classes held till date.

PERCENT\_ATTENDED: Attendance in terms of percentage for a Student.

## CHAPTER 4

## IMPLEMENTATION

### 4.1 Table Creation

```
CREATE TABLE "ADMIN" 1
(
    "USERNAME" VARCHAR2(20),
    "PASSWORD" VARCHAR2(20)
);

CREATE TABLE "PROF"
(
    "PID" VARCHAR2(10),
    "PNAME" VARCHAR2(50),
    "USERNAME" VARCHAR2(20),
    "PASSWORD" VARCHAR2(20),
    "PHONE" VARCHAR2(10),
    PRIMARY KEY ("PID") ENABLE
) ;

CREATE TABLE "STUDENT"
(
    "ROLL" VARCHAR2(10),
    "USN" VARCHAR2(10),
    "SNAME" VARCHAR2(50),
    "ADDRESS" VARCHAR2(50),
    "PHONE" VARCHAR2(10),
    "PARENT_PHONE" VARCHAR2(10),
    PRIMARY KEY ("ROLL") ENABLE
) ;



CREATE TABLE "SUBJECT"
(
    "SUBCODE" VARCHAR2(10),
    "SUBNAME" VARCHAR2(50),
    PRIMARY KEY ("SUBCODE") ENABLE
) ;

CREATE TABLE "TEACHES"
(
    "PID" VARCHAR2(10),
    "SUBCODE" VARCHAR2(10),
    "SEMESTER" VARCHAR2(10),
    PRIMARY KEY ("PID", "SUBCODE") ENABLE
) ;
ALTER TABLE "TEACHES" ADD FOREIGN KEY ("PID")
REFERENCES "PROF" ("PID") ENABLE;ALTER TABLE "TEACHES" ADD
FOREIGN KEY ("SUBCODE")
REFERENCES "SUBJECT" ("SUBCODE") ENABLE;






CREATE TABLE "ATTENDS"
(
    "ROLL" VARCHAR2(10),
    "SUBCODE" VARCHAR2(10),
    "DAYS_ATTENDED" NUMBER(5,0),
    "TOTAL_DAYS" NUMBER(5,0),
    "PERCENT_ATTENDED" NUMBER(5,2),
    PRIMARY KEY ("ROLL", "SUBCODE") ENABLE
) ;
ALTER TABLE "ATTENDS" ADD FOREIGN KEY ("ROLL")
REFERENCES "STUDENT" ("ROLL") ENABLE;ALTER TABLE "ATTENDS" ADD
FOREIGN KEY ("SUBCODE")
REFERENCES "SUBJECT" ("SUBCODE") ENABLE;
```

## 4.2 Table values







- **Admin Table**

EDIT	USERNAME	PASSWORD
	vivek	123456789
	sushant	987654321
row(s) 1 - 2 of 2		

- **Professor Table**






EDIT	PID	PNAME	USERNAME	PASSWORD	PHONE
	123	professor1	pro1	pro1	<a href="tel:9876543102">9876543102</a>
	1234	QQQQ	QQQQ	QQQQ	QQQQ
	4312	WWWW	WWWW	WWWW	WWWW
	5345	EEEE	EEEE	EEEE	EEEE
	654	RRRR	RRRR	RRRR	RRRR
row(s) 1 - 5 of 5					

- **Subject Table**




EDIT	SUBCODE	SUBNAME
	15CS53	DBMS
	15CS51	ME
	15CS52	CN
	15CS54	ATC
	15CS553	AJJ
	15CS562	AI
row(s) 1 - 6 of 6		

## ATTENDANCE MANAGEMENT SYSTEM






- **Student Table**

EDIT	ROLL	USN	SNAME	ADDRESS	PHONE	PARENT_PHONE
	1	2JI15CS001	Student1	student1 address	<a href="tel:8974563210">8974563210</a>	7896541230
	2	2JI15CS002	Student2	student2 address	<a href="tel:6549781320">6549781320</a>	<a href="tel:3216549870">3216549870</a>
	3	AAAA	AAAA	AAAAA	AAAAA	AAAAAA
	4	BBBB	BBB	BBBB	BBBB	BBB
	5	CCC	CCCCC	CCCCC	CCCCC	CCCCC
row(s) 1 - 5 of 5						

- **Teaches Table**

EDIT	PID	SUBCODE	SEMESTER
	123	15CS53	5
	1234	15CS51	5
	4312	15CS54	5
row(s) 1 - 3 of 3			

- **Attends Table**

EDIT	ROLL	SUBCODE	DAYS_ATTENDED	TOTAL_DAYS	PERCENT_ATTENDED
	1	15CS53	1	2	50
	2	15CS53	2	2	100
	3	15CS54	3	10	30
	4	15CS562	7	10	70
	5	15CS553	9	10	90
row(s) 1 - 5 of 5					

### 4.3 Triggers



# ATTENDANCE MANAGEMENT SYSTEM

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```
CREATE TRIGGER ADMIN_CONSTRAINT
BEFORE INSERT OF USERNAME,PASSWORD
ON ADMIN
WHEN SELECT COUNT(USERNAME) FROM ADMIN > 3
FOR EACH ROW
INSERT INTO ADMIN VALUES ('TRIGGER','TRIGGER');
/
```

## 4.4Stored Procedures

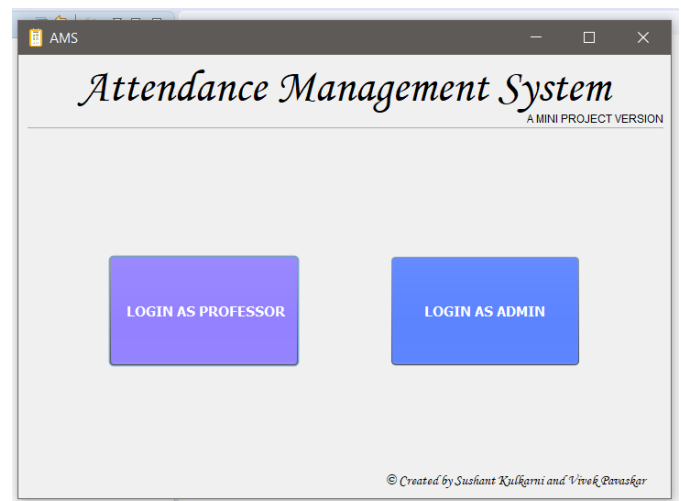
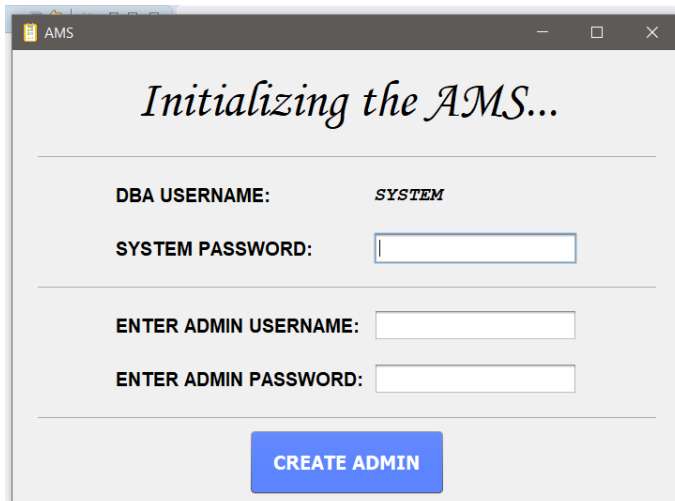
```
CREATE OR REPLACE PROCEDURE STUDENT_PROC
BEGIN
SELECT * FROM STUDENT_VIEW;
END;
/
```

## CHAPTER 5

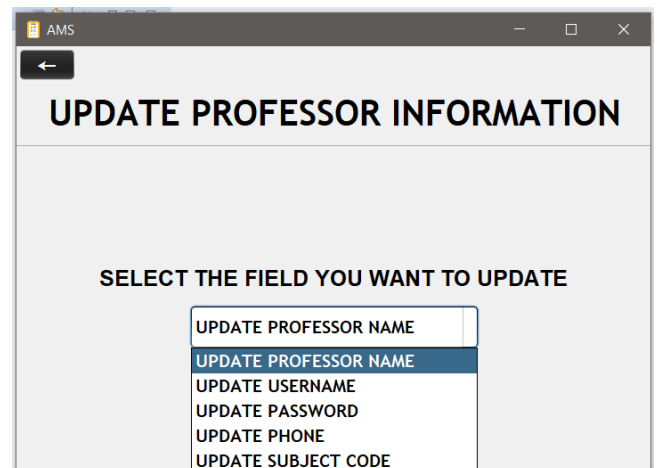
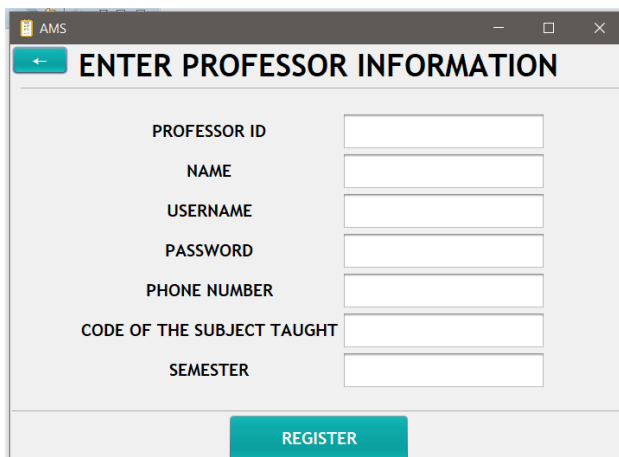
### RESULTS

All the GUIs are not covered in this report. They can be viewed by exploring all the other features of AMS.

❖ But here are some Snapshots:



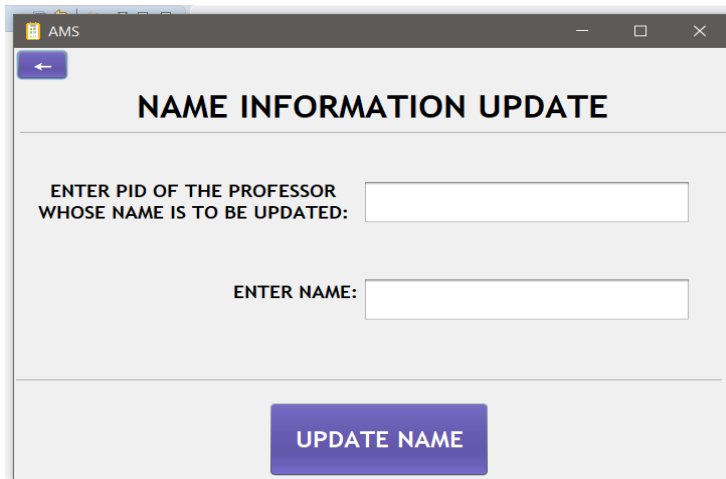
The first image shows the setup of the software on a machine which doesn't have a schema to run the software on. AMS creates a schema when it is run on a machine for the first time. The second image is the first user interface of the AMS.



The above images show how a professor is registered and how the professor's information can be updated.

# ATTENDANCE MANAGEMENT SYSTEM

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AMS

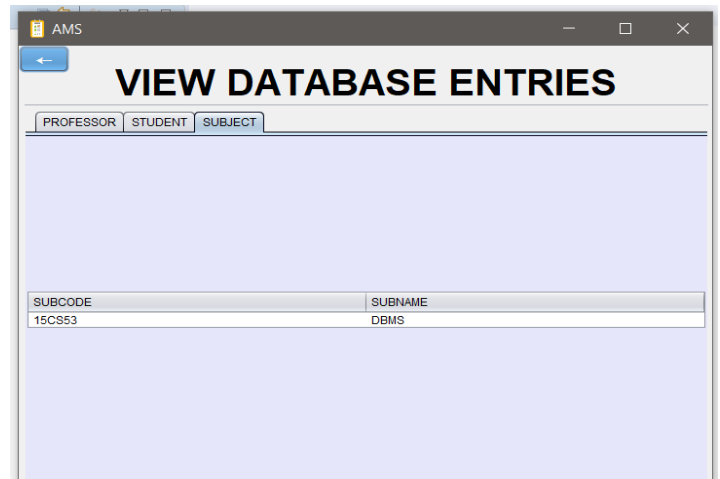
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## NAME INFORMATION UPDATE

ENTER PID OF THE PROFESSOR  
WHOSE NAME IS TO BE UPDATED:

ENTER NAME:

UPDATE NAME



AMS

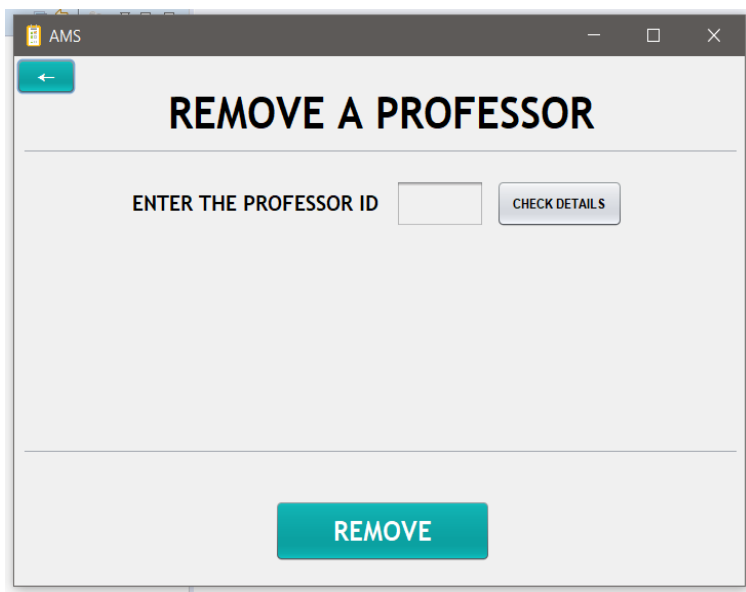
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## VIEW DATABASE ENTRIES

PROFESSOR STUDENT SUBJECT

SUBCODE	SUBNAME
15CS53	DBMS

The above images show the GUI for Professor's name update and the GUI to view the database from AMS.



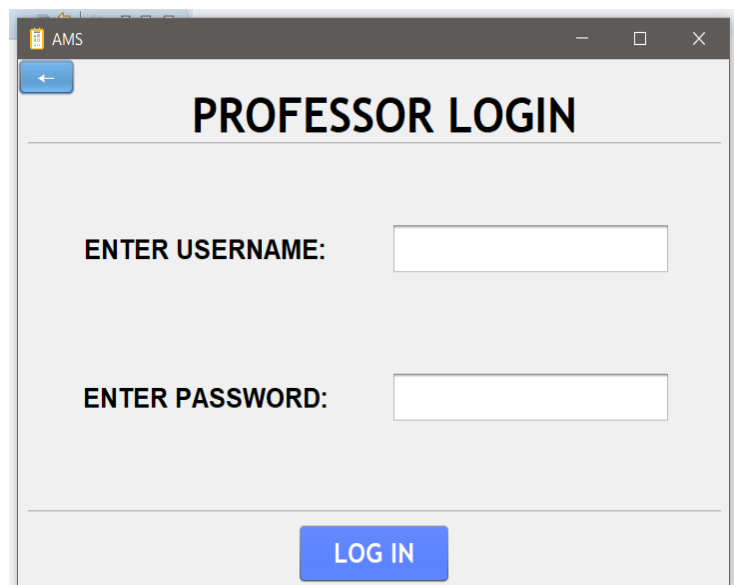
AMS

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## REMOVE A PROFESSOR

ENTER THE PROFESSOR ID

REMOVE



AMS

←

## PROFESSOR LOGIN

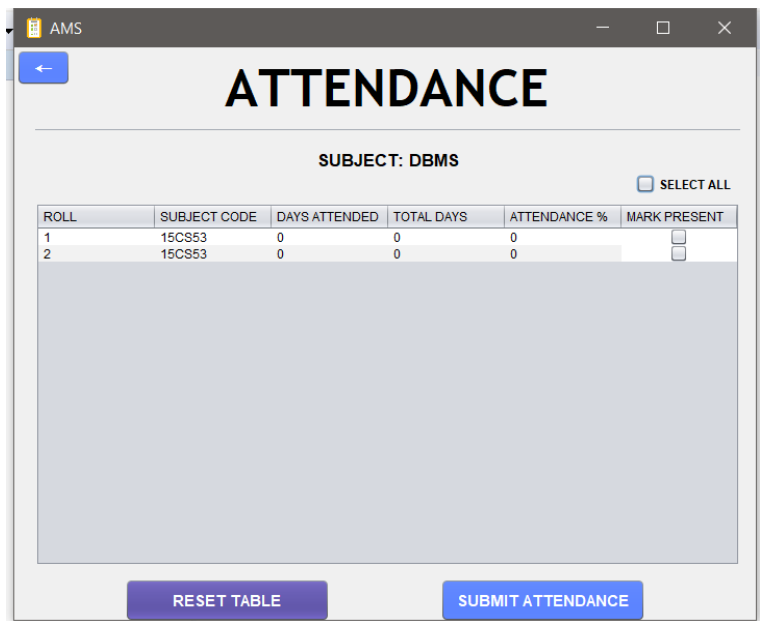
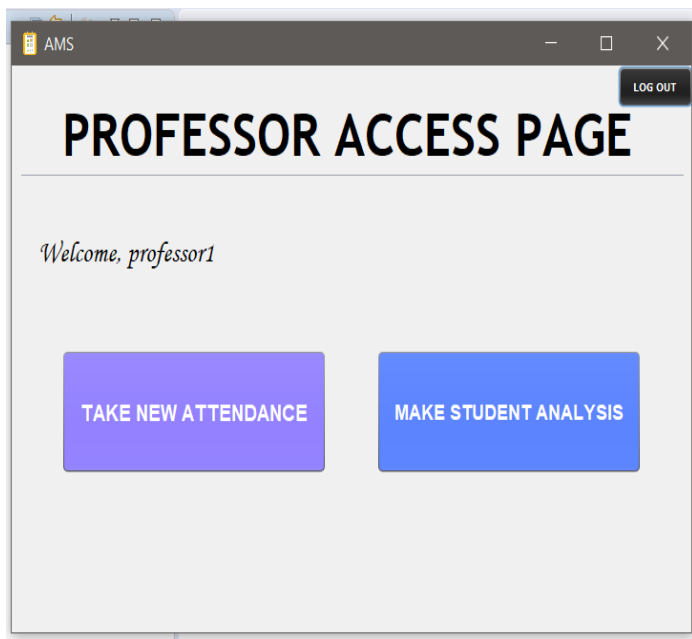
ENTER USERNAME:

ENTER PASSWORD:

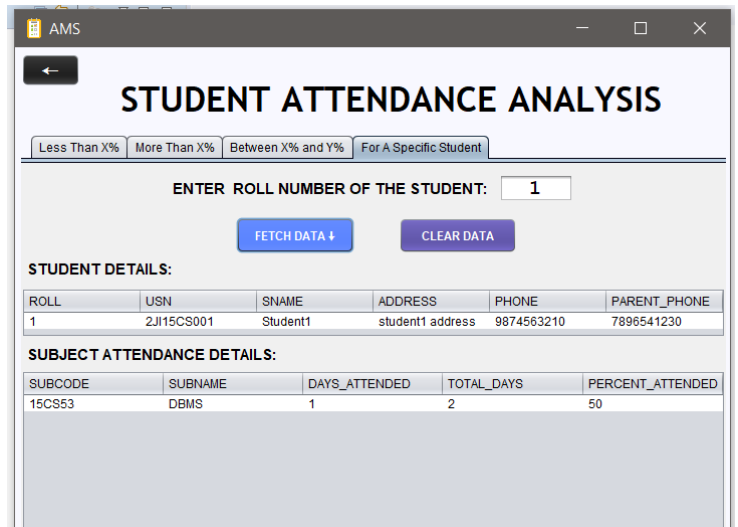
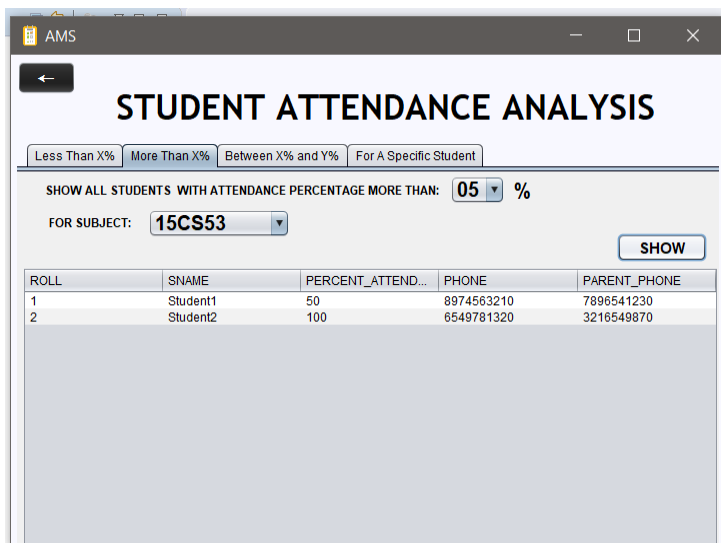
LOG IN

The above images show the GUI for removing a professor and the GUI for Professor Authentication.

# ATTENDANCE MANAGEMENT SYSTEM



The above images show the access page for a professor when he/she logs into AMS. The second image shows the GUI used while recording attendance.



This GUI has features to make Attendance Analysis, fetch data for a specific student, and much more.

## CHAPTER 6

### REFERENCES

- Database systems Models, Languages, Design and Application Programming, RamezElmasri and Shamkant B. Navathe, 7<sup>th</sup> Edition, 2017, Pearson.
- Database management systems, Ramakrishnan, and Gehrke, 3<sup>rd</sup> Edition, 2014, McGraw Hill
- [www.stackoverflow.com](http://www.stackoverflow.com), the global programming community.
- [www.youtube.com](http://www.youtube.com) for tutorials on GUI design, JDBC and debugging.
- Eclipse forums
- Oracle forums
- [www.sourceforge.net](http://www.sourceforge.net) for rs2xml.jar file.
- Google Images.
- Wikipedia
- TutorialsPoint.