DESIGN DOCUMENT

Prepared for Software Engineering Project - "Attento" version 1.2

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REVISION HISTORY

S. No.	Date	Reason for revision	Version
1	15/3/17	Original	1.0
2	22/3/17	Remarks from Prof. Bhattacharya	1.1
3	27/3/17	Final edits	1.2

1. INTRODUCTION

1.1 Purpose

This document provides a comprehensive architectural overview of the system, using a number of different architectural views to depict different aspects of the system. It is intended to capture and convey the significant architectural decisions that have been made on the system.

1.2 Scope

The "**Attento"** is an Android sensor based mobile application to make an IT-enabled classroom system "smart". Some of the key features of the system are the following.

It can automatically detect the attentiveness of the students and alert the teacher accordingly.

It allows the admin to have the access to part of the system - update the list of students instructors.

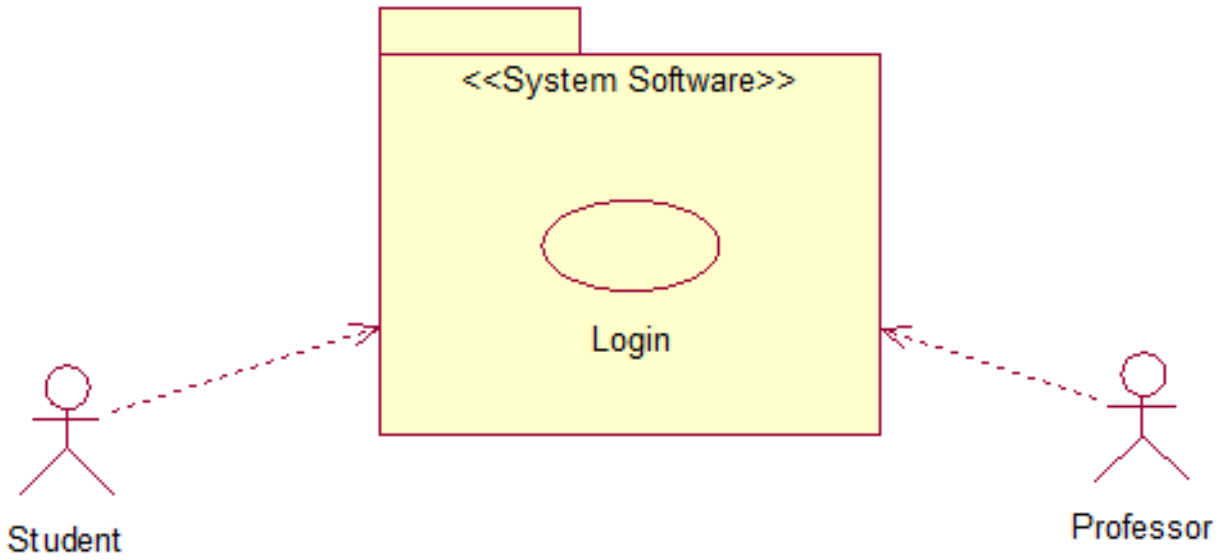
1.3 Overview

The next chapter of the document has described architectural design of the system. The high level components and their interactions , suitable architectural patterns , physical arrangement of components and design decisions applied to the whole system.

Representation of the system through UML

2 Use case diagram

2.1 Use case diagram for login



2.1.1 Use case description:- System Login

Participating Actors:- Student, Professor

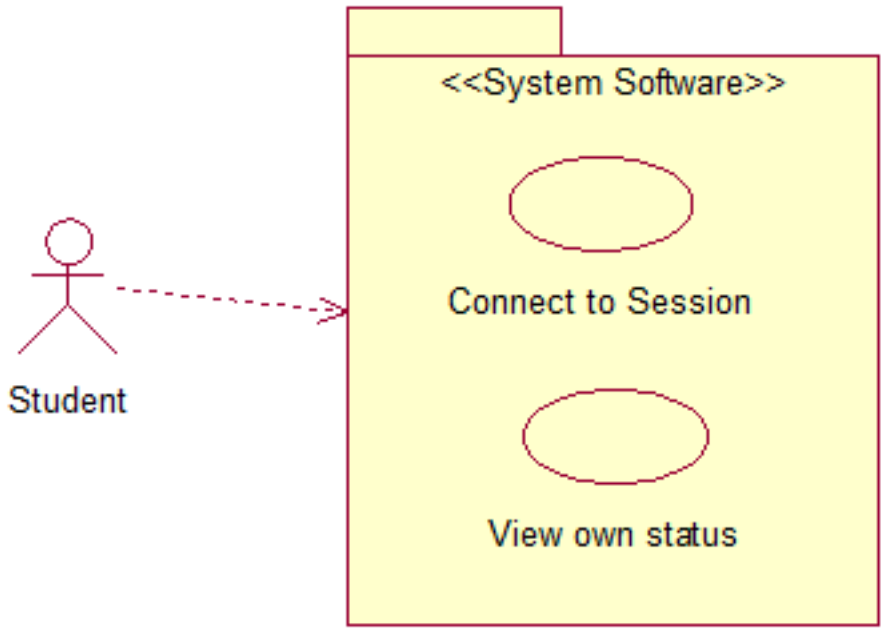
Main Line Sequence:-

1. **User**: visits the login page
2. **System**: display the prompt to enter webmail id, password, and role.
3. **User**: enters the necessary values
4. **User**: clicks login
5. **System**: validates the login details
6. **System**: user directed to user main page

Alternate Sequence:

5.a **System**: displays an error message informing the user about wrong login credentials and the use case ends

2.2 Use Case diagram for student



2.2.1 Use Case Description:- Connect to Server

Participating Actor:- Student

Main Line Sequence:-

1. **System:** displays the prompt to connect to the server
2. **User:** clicks on connect to server
3. **System:** connects user to the server established by the Professor
4. **System**: directs user to user home page

Alternate Sequence:-

3.a **System:** displays an error message informing that connection not established and the use case ends

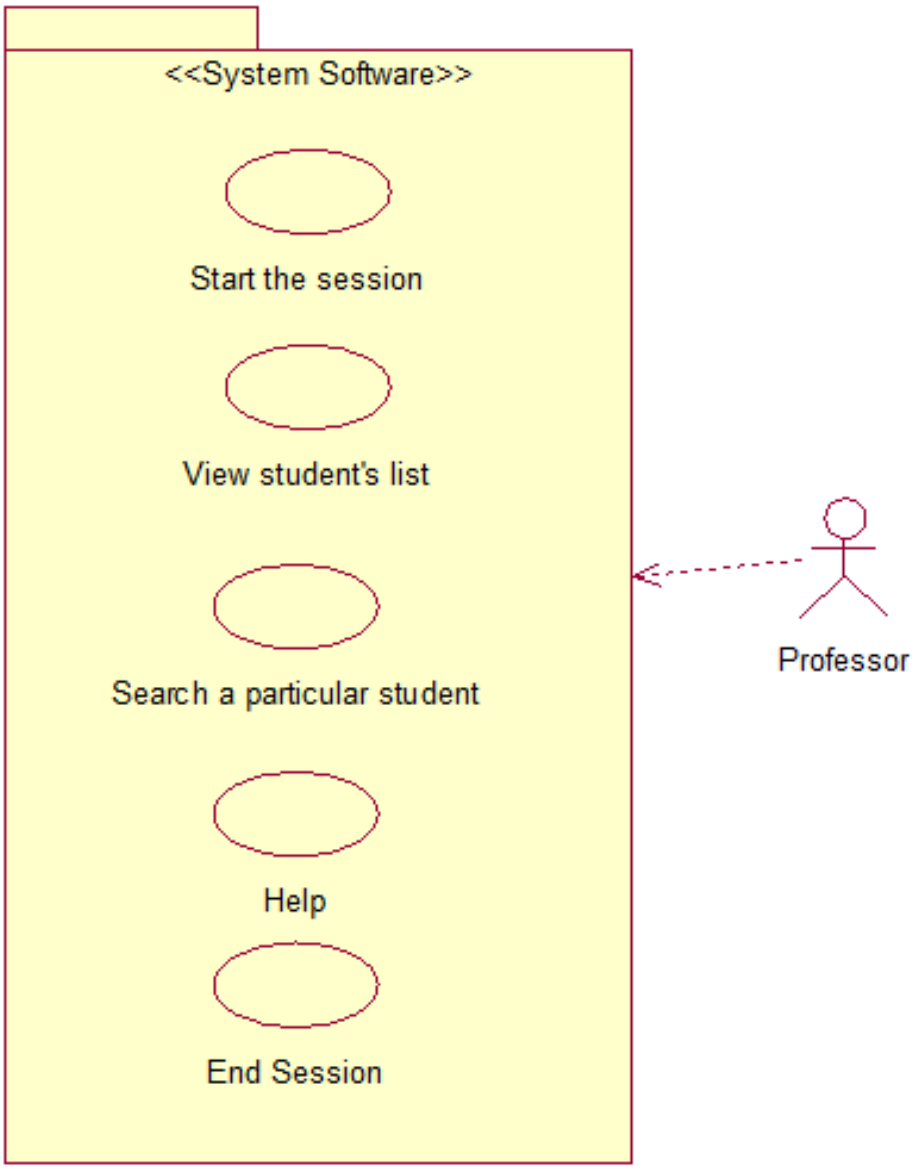
2.2.2 Use Case Description:- View Own Status

Participation Actor:- Student

Main Line Sequence:-

1. **System:** displays the real time status of user's activity.

2.3 Use Case diagram for professor



2.3.1 Use case description:- Start the server

Participating Actor:- Professor

Main Line Sequence:-

1. **System**: displays the prompt to start the server
2. **User**: clicks on start the server
3. **System**: Establishes the server
4. **System**: directs user to user home page

Alternate Sequence:-

3.a **System**: displays an error message informing that server not started and the use case ends.

2.3.2 Use case description:- Search a particular student

Participating Actor:- Professor

Main Line Sequence:-

1. **User:** Enters the name/roll_no of a particular student
2. **System:** matches the name/roll_no entered by user
3. **System:** displays the details(name, roll_no, real time status) of the searched student
4. **User:** clicks on the student profile
5. **System:** displays the pictorial view of the student's attention till that time period

Alternate Sequence:-

3.a **System:** displays a message informing the user that search not found(either student is absent or is not connected to the session)

2.3.3 Use case description:- View Student's List

Participating Actor:- Professor

Main Line Sequence:-

1. **System:** displays the list of students(name, roll no) connected to session and their real time status of attentiveness
2. **System:** displays the total count of students who are attentive

2.3.4 Use case description:- Help

Participating Actor:- Professor

Main Line Sequence:-

1. **User:** clicks on help menu on the top right corner of the user home page
2. **System:** displays information about the app

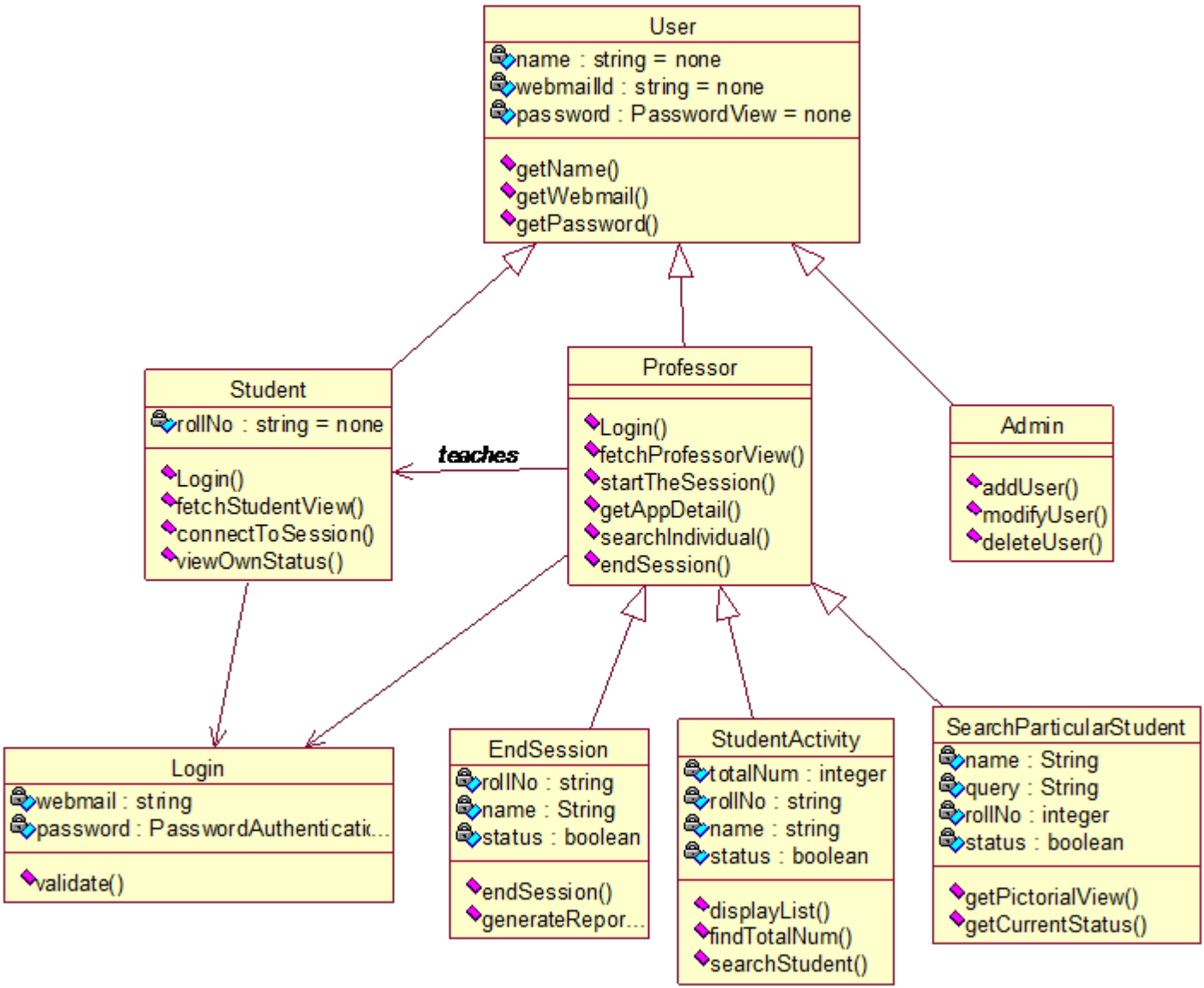
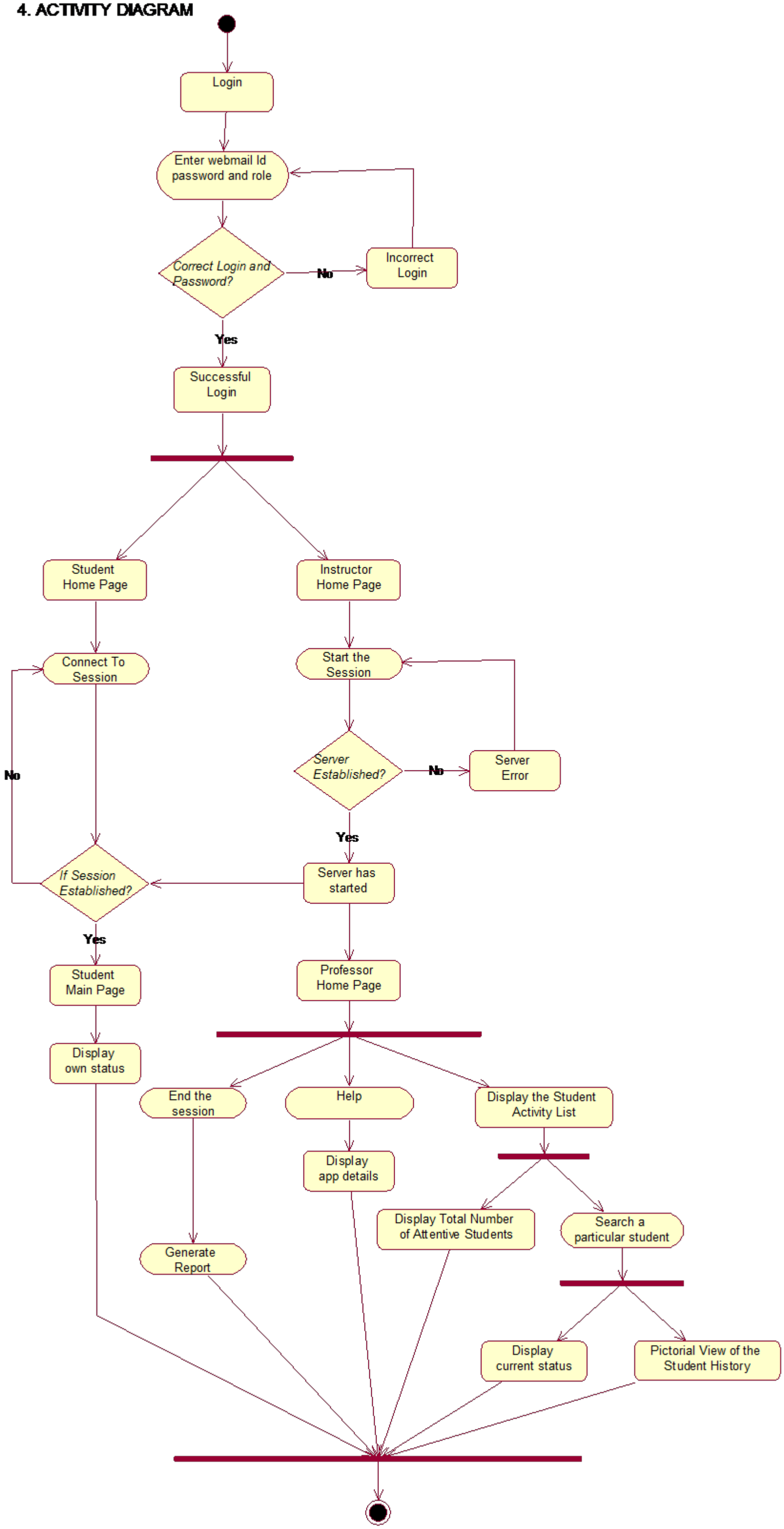
2.3.5 Use case description:- End Session

Participating Actor:- Professor

Main Line Sequence:-

1. **User:** clicks on end session
2. **System:** exits the user home page and generates the students' activity report

3. CLASS DIAGRAM



4. ACTIVITY DIAGRAM