# Attendance Tracking System Documentation

## Introduction

This document provides a detailed overview of the attendance tracking system. The system includes essential actors such as Admin, Teacher, and Student, and is designed to allow administrators to manage users and classes, teachers to mark attendance, and students to view their attendance records.

## Use Case Diagram

The Use Case Diagram illustrates the primary functions of the attendance tracking system. The system's actors are as follows:  
Admin: Responsible for managing users and classes.  
Teacher: Marks attendance for students in their classes.  
Student: Views their attendance records.  
  
Key Use Cases:  
Admin can add, update, and delete users, and assign them to classes.  
Teacher can select classes, retrieve class data, mark attendance, and view attendance records.  
Student can view their attendance.

## Sequence Diagram

The Sequence Diagram depicts the flow of interactions among the system's actors and the system. Each actor performs specific actions as described below:  
  
1. Sign-in Process: All users start by signing into the system, which verifies their login details.  
2. Selecting Class (Teacher): After successful login, the teacher selects the class for which they want to mark attendance.  
3. Retrieving Class Data: The teacher retrieves the list of students in the selected class.  
4. Marking Attendance: The teacher marks attendance for students.  
5. Viewing Attendance: Both teachers and students can view attendance records.  
6. Logout: Users log out after completing their tasks.  
  
Error Handling:  
- If login verification fails, the system will display an error and prompt the user to re-enter their credentials.

## Data Flow Diagram

The Data Flow Diagram represents how data moves within the attendance tracking system:  
  
User Data: Managed by the admin, including adding, updating, or deleting users.  
Class Data: Teachers select and retrieve classes to mark attendance.  
Attendance Data: Teachers mark attendance for students, and students can view their attendance records.

## Conclusion

This document outlines the design of an attendance tracking system with a focus on clear and structured interactions between Admin, Teacher, and Student actors. The system efficiently manages user authentication, attendance marking, and record viewing, while handling possible errors and providing a straightforward user experience.