



**CANKAYA UNIVERSITY  
FACULTY OF ENGINEERING  
COMPUTER ENGINEERING DEPARTMENT**

**CENG 407**

**Mobile School Management System  
(MSMS)**

**Software Design Description  
Report  
(SDD)**

**Version 1.0**

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# 1 INTRODUCTION

In this documentation file, it is a documentation content that describes the parts of the project that cover the design and architectural goals of the project. Mobile School Management System's design and database includes operation diagrams.

## 1.1 Purpose

This document has been created to indicate details in the design part of Mobile School Management System Mobile School Management System (MSMS). At the same time, this document was created according to the IEEE 1016-2009. Those expected to use this system are the Mobile School Management System (MSMS)'s students, teachers, school management, school IT management and system management but school IT management and especially the system administrator will perform operations on the back, not the front of the application.

## 1.2 Scope

This complete SDD will contain the general definition and features of the project, design constraints, the overall system architecture and data architecture, a brief explanation about our current progress and schedule of the project. With the help of UML diagrams, design of the system and subsystems/modules will be explained visually in order to help the programmer to understand all information stated in this document correctly and easily.

## 1.3 Glossary

TERM	DEFINITION
SDD	Software Design Description
MSMS	Mobile School Management System
IEEE	Institute of Electrical and Electronics Engineers
UML	Unified Modeling Language
MSSQL	Microsoft SQL Server
DB	Database

## 1.4 Overview

This SDD is divided into five sections to provide target readers with a complete and comprehensible perception of the system. The first part is mostly about the scope and purpose of the document. The second part specifies design topics and consists of two parts. In the first section, design assumptions, dependencies, and constraints of the systems are defined. The second section provides design goals and guidelines for the reliability, availability, portability and extensibility of the system. In addition, the tools used for project design are explained. In the third section, the architectural design of the application and the detailed description of the modules are detailed. In the fourth section, this section covers what users can do and which users have access to what. Interaction diagrams detailing how operations are performed for each user type are available here. The sequence of interaction is shown visually using the vertical axis in the sequence diagram. In the fifth section, there is detailed information about the database design of the project.

## 2 DESIGN CONSIDERATIONS

### 2.1 Approach

While developing the project, we have decided to use MSSQL for creating and maintaining the database in future operations. It provides the data to be classified to where it belongs. It has a structure that is flexible for maintaining and inserting or deleting new data to database structure.

### 2.2 Tools Used

Microsoft Visual Studio 2019	Programing,testing,developing website
Microsoft SQL Server	For Database Management
Microsoft Office Word	Documentations
<a href="https://app.diagrams.net/">https://app.diagrams.net/</a>	Diagrams, UML diagrams, Sequence Diagram

## **2.3 Constraints**

### **2.3.1 Time**

Under the scope of CENG 407 courses, we have approximately one semester to finish our projects. In order to meet deadlines, we have to obey our schedule strictly. As we mentioned in our SRS document, we will be following the Waterfall Model. Since it is a step-by-step approach, it is a must to update requirements and solutions. According to the feedback we will take, we will improve the general design and process of our project. Thus, we are planning not to fall behind the schedule.

### **2.3.2 Performance**

Performance is an important criterion for each software product. Since the MSMS project will be run by local customers in the web browser and is a multi-user process, users internet speeds and hardware-wise, RAM and CPU quality are factors that affect the performance.

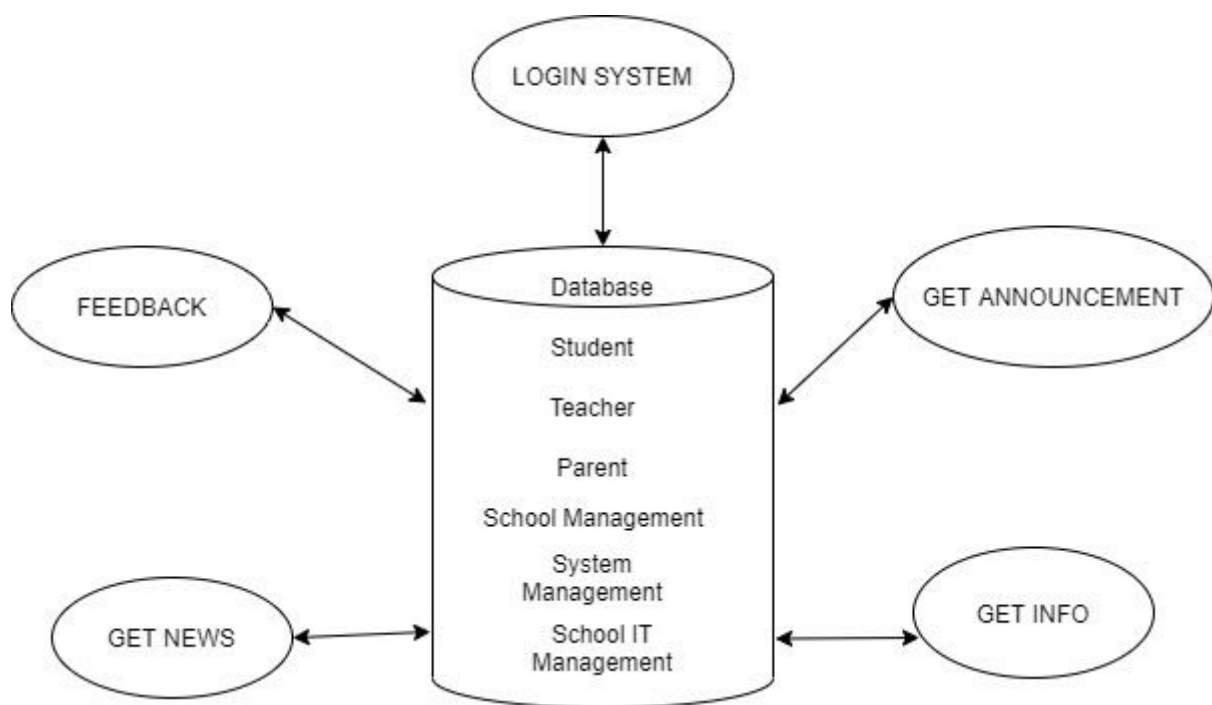
## **2.4 Assumptions and Dependencies**

In designing this project, we had to make some basic assumptions about software and hardware. Our program is designed to run on all operating systems. So it is enough to have any computer and internet connection to use a web browser

### 3 ARCHITECTURE

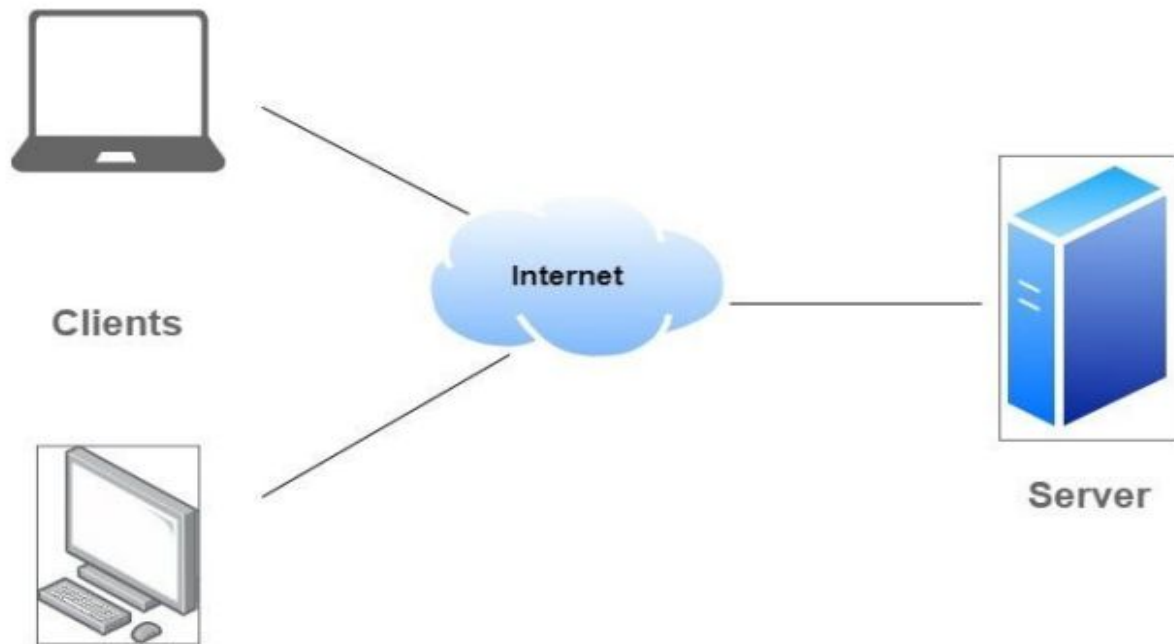
#### 3.1 Software Architecture

The database will be used to contain the data of students, parents, teachers, school management, system management, school IT management, and will help to add new data or make changes to the data. More importantly our database will contribute to the functions that are defined for each user type to be used. Database is the cornerstone of our project that keeps all the necessary information in our system. We might call our architecture type the Repository Architecture Style.



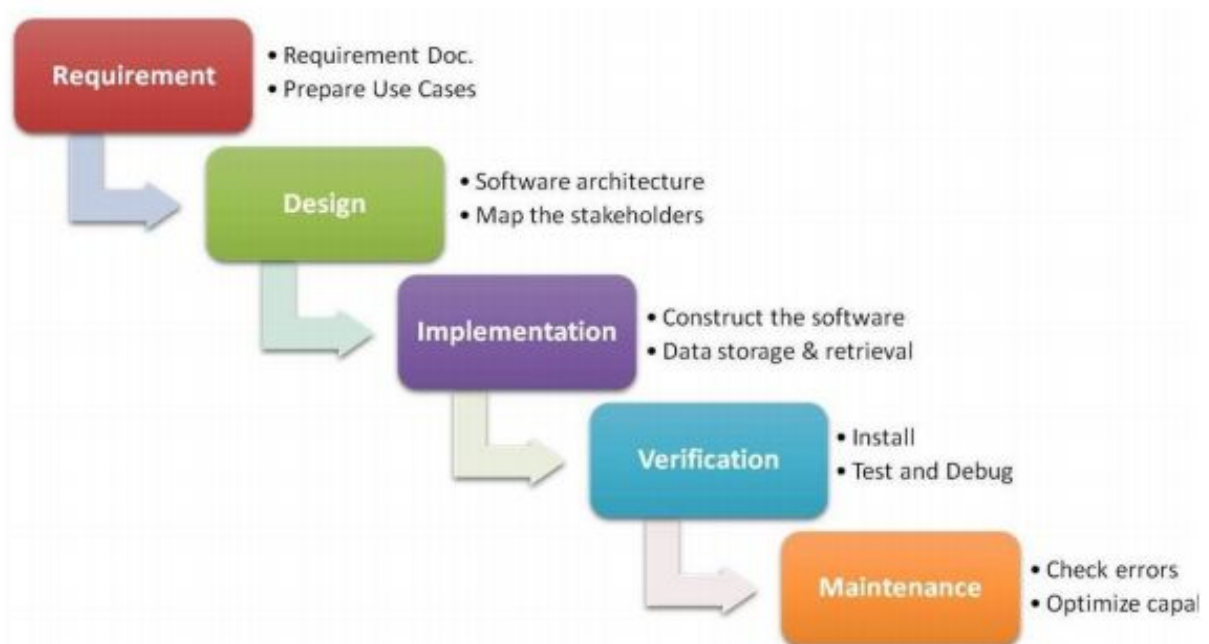
#### 3.2 Hardware Architecture

We use the Client-Server model for our project. In the client-server architecture, when the client computer sends a request for data to the server through the internet, the server accepts the requested process and delivers the data packets requested back to the client.

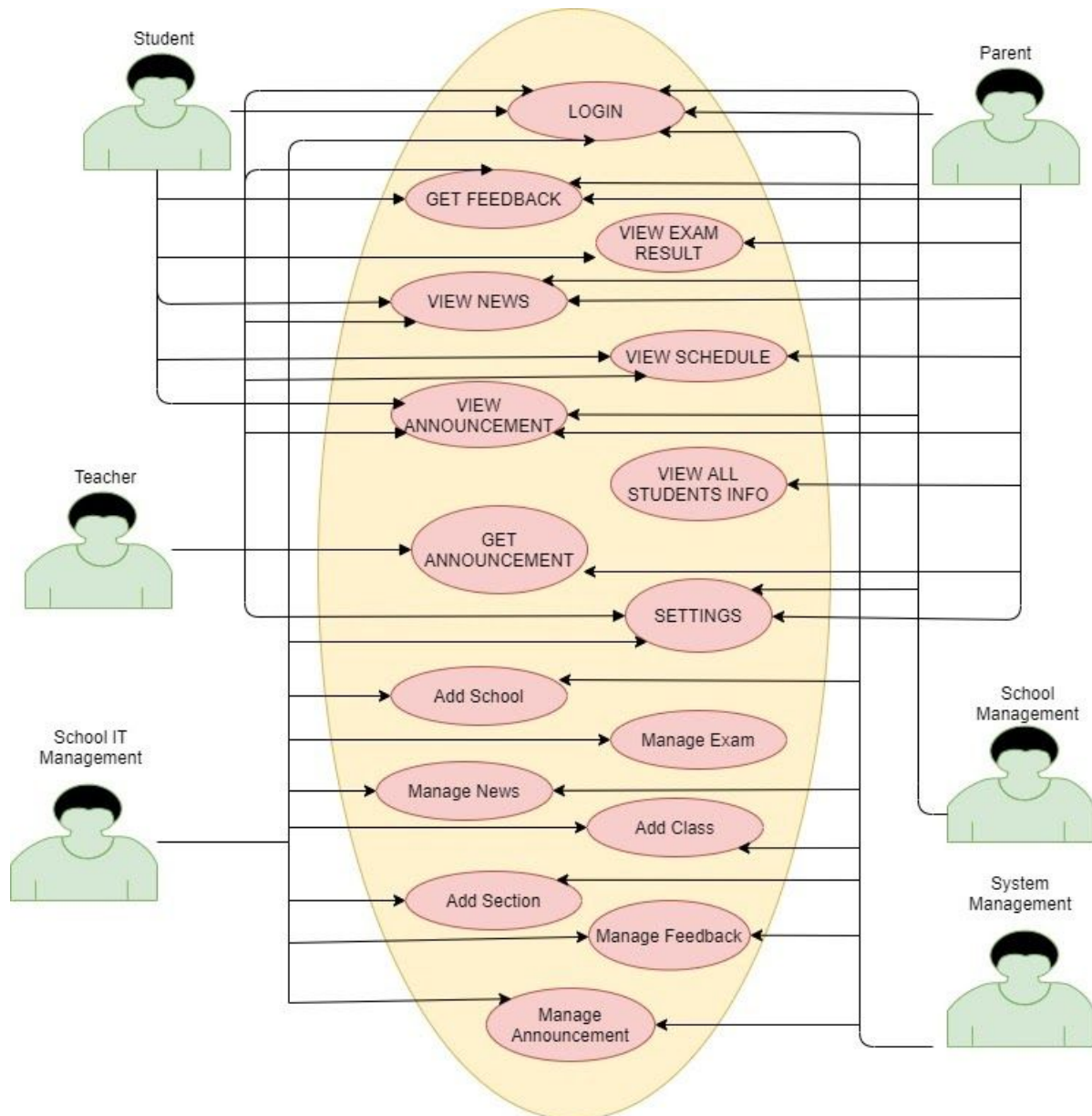


#### 4. PROCESS DESIGN

In a project, process management is the cornerstone of the project. We used the waterfall model as it is always more effective to progress step by step in our project and facilitates the process management.



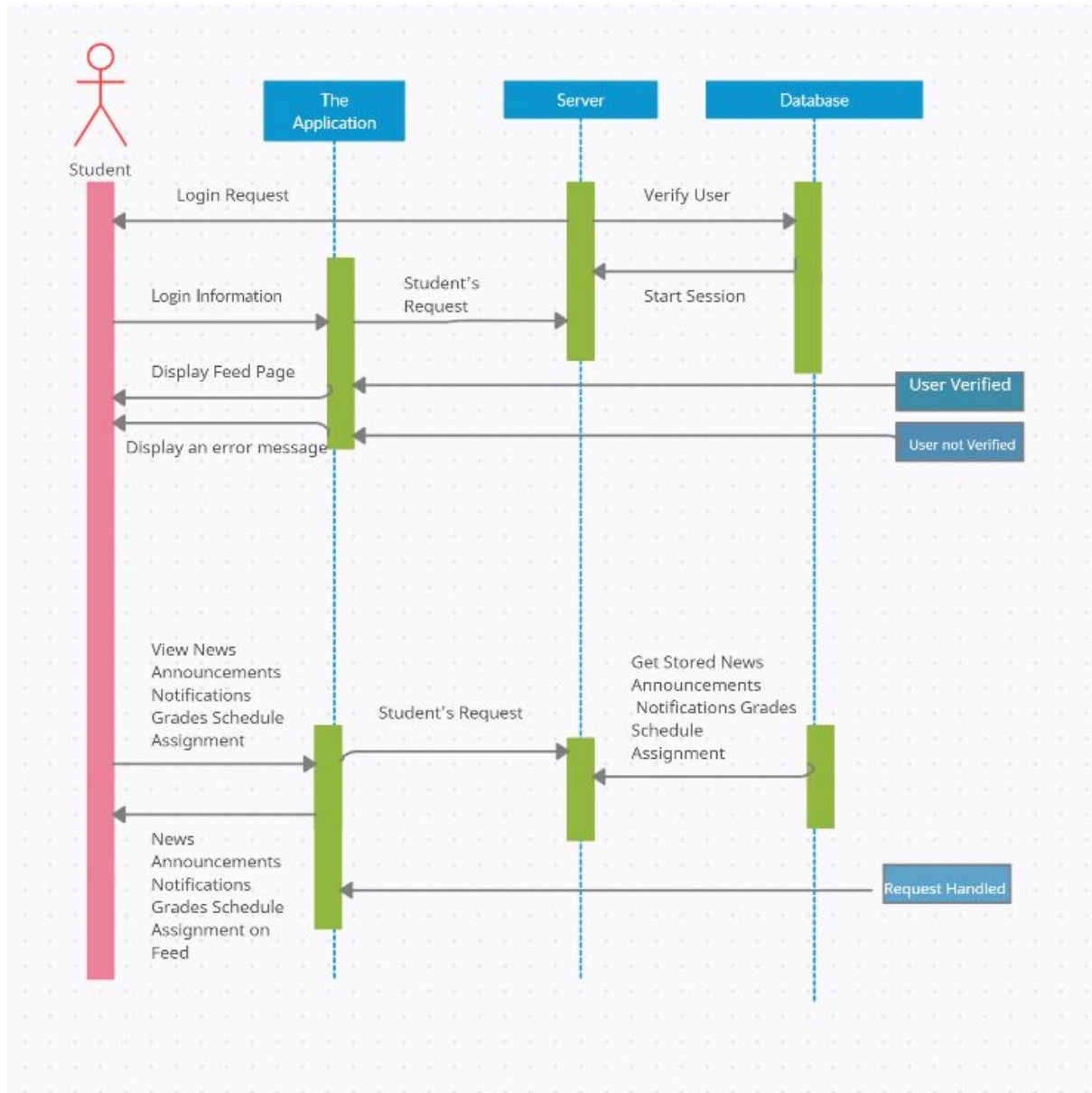
## 4.1 Use Cases



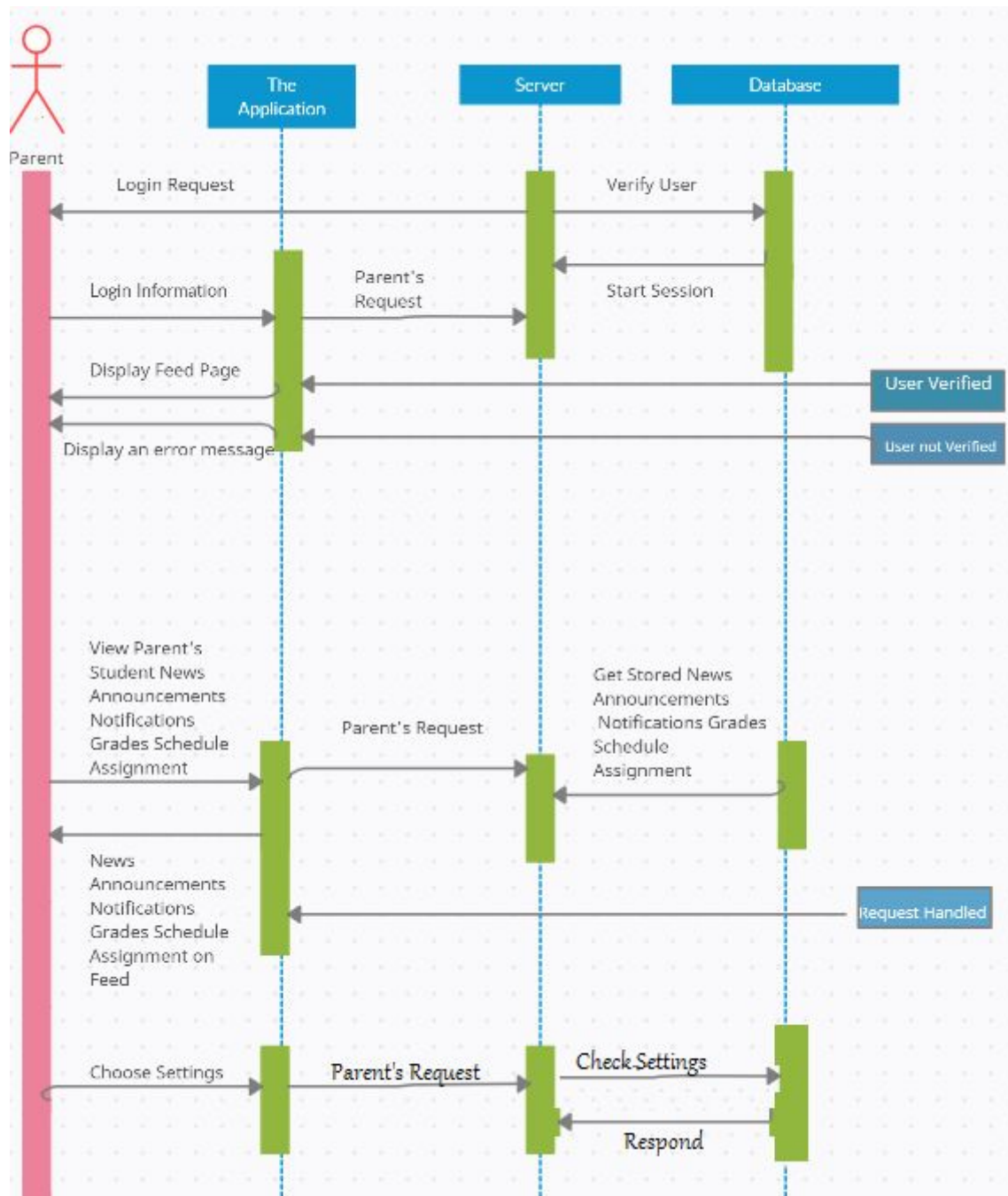


## 4.2 Sequence Diagrams

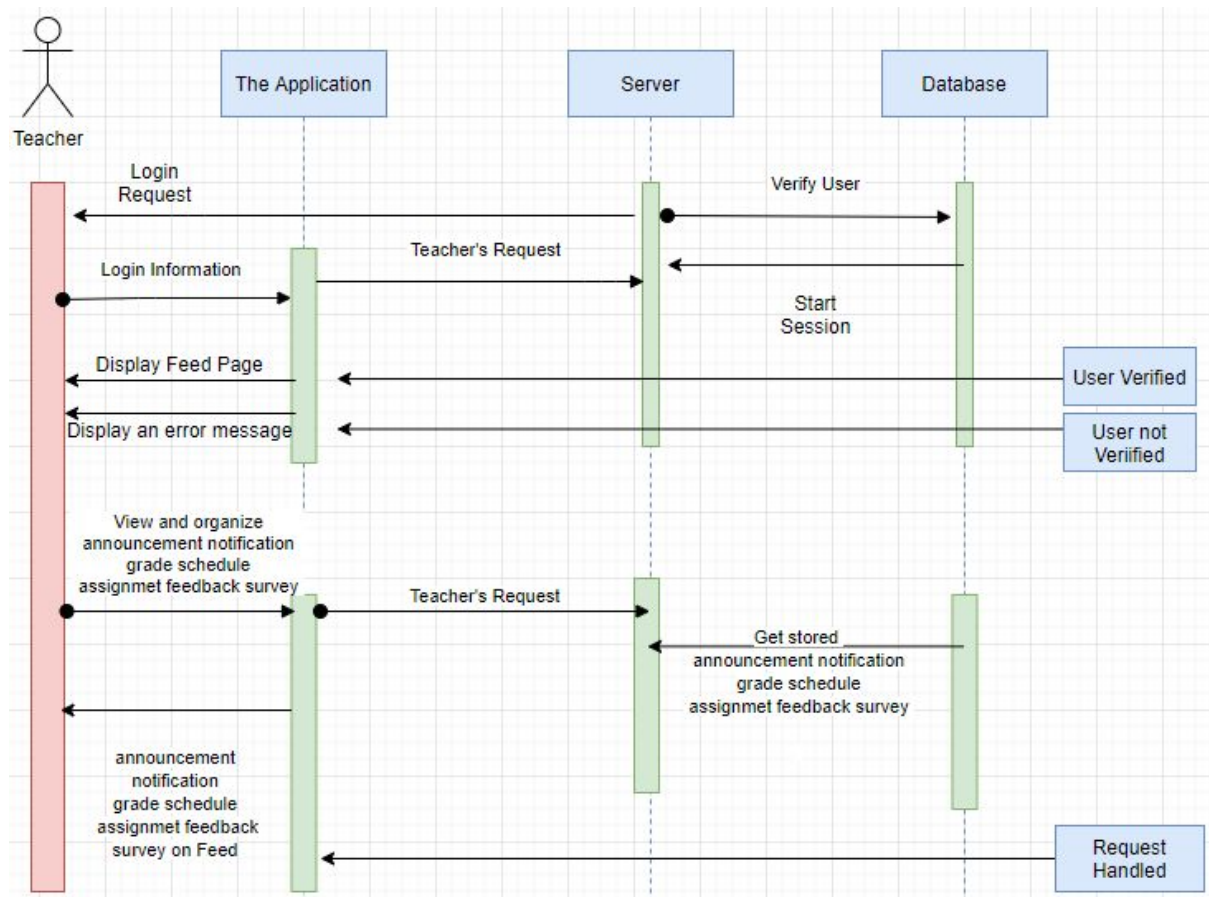
### 4.2.1 Student Diagram



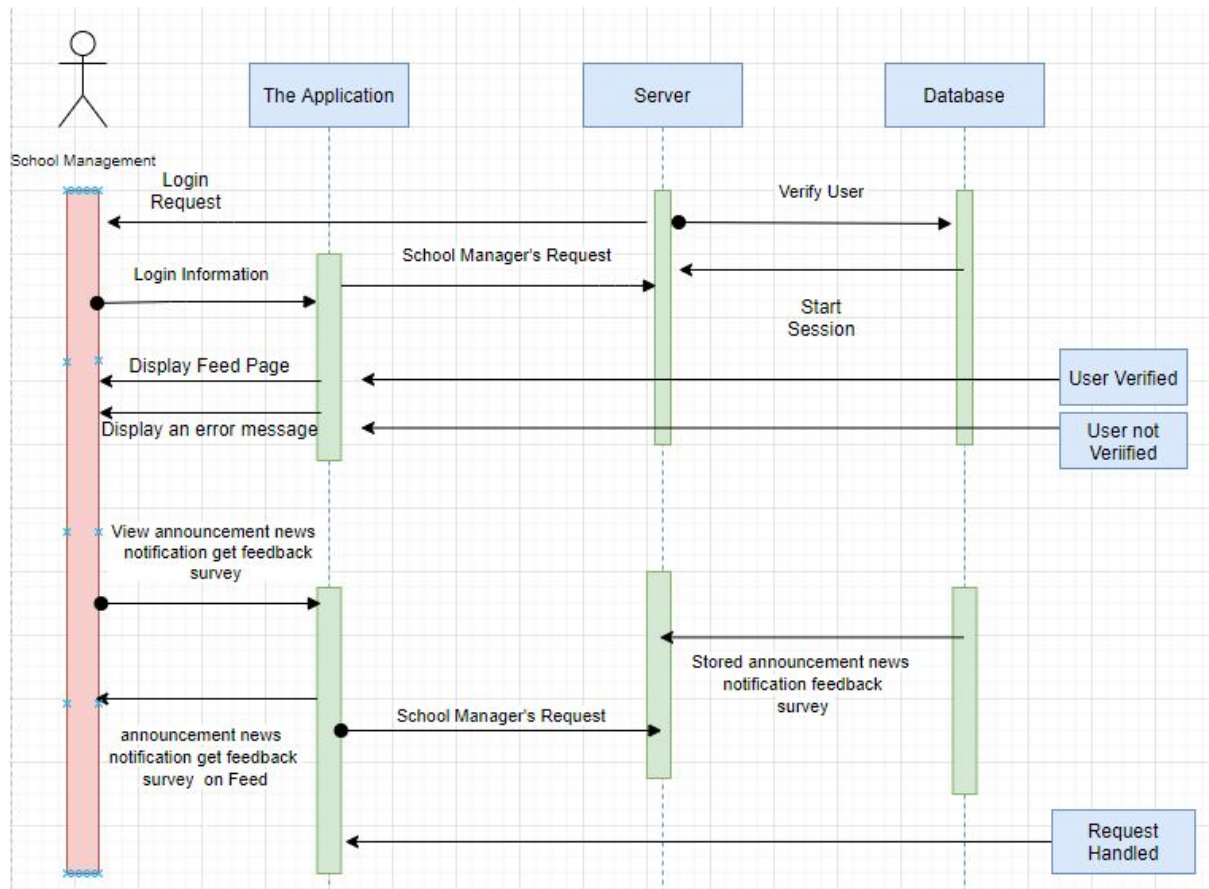
## 4.2.2 Parent Diagram



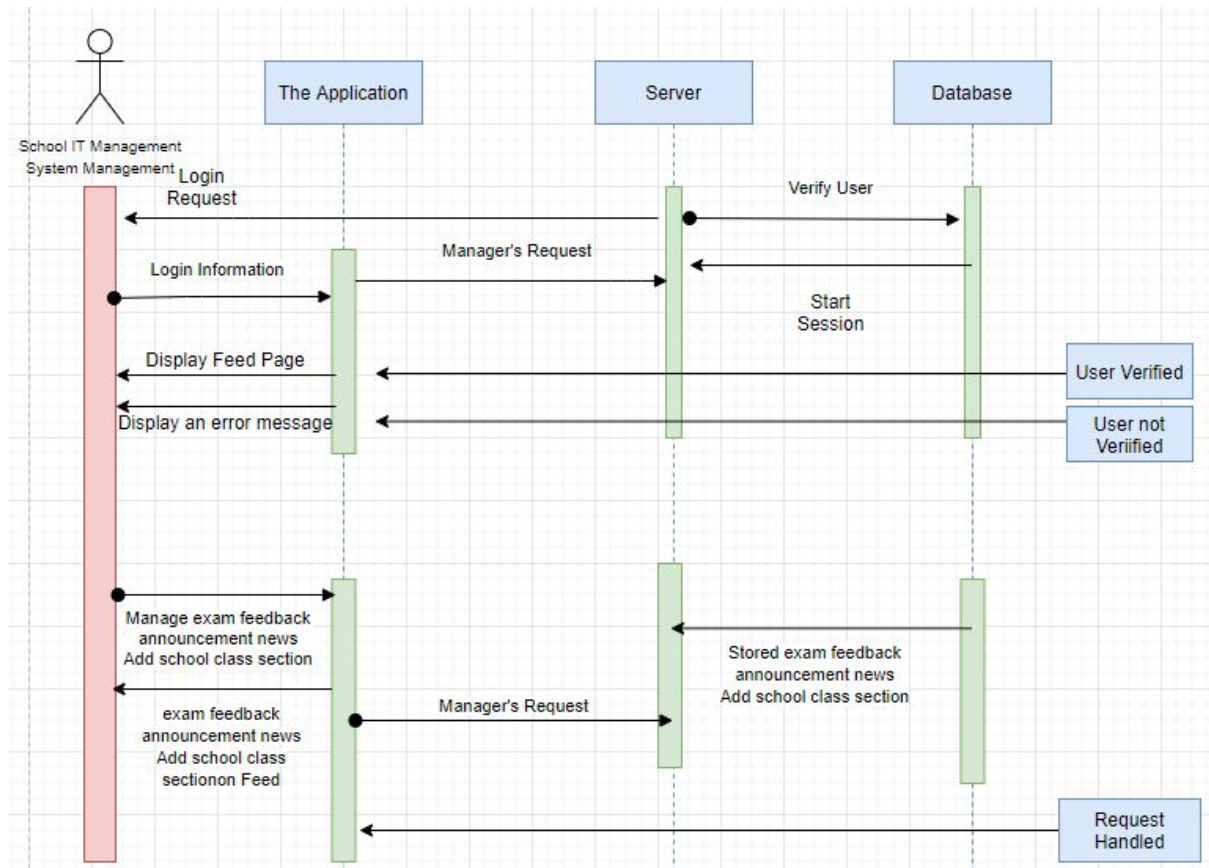
### 4.2.3 Teacher Diagram



## 4.2.4 School Management Diagram



#### 4.2.5 School IT Manager / System Management ( Admin )



## 5. DATABASE DESIGN

