SYSTEM ANALYSIS

4.1 INTRODUCTION:

The proposed app on academic schedule management system will provide all the required academic information of a department of an educational institution dynamically & effectively. While much of the underlying technology is already available, there are still open challenges with respect to design, usability, portability & functionality & implementation aspects. The existing class routine management system contains only class routine but it cannot meet the expectations of a user.

This report is on system analysis which is a description of a software system to be developed. It lays out functional & non-functional requirements & may include a set of use cases that describes user interactions that the software must provide. It helps software suppliers to understand exactly what the customer wants. Here, the objective of this report is to provide an overview of the system, to provide all the requirements, i.e. both the user and system requirements, and the system scenarios and use cases.

This report covers 8 sections. Section 2 discuss about the user requirements document that specifies what the user expects the software to be able to do. Section 3 illustrates about the system requirements specification such as a structured document setting out detailed description of the system service. Overview of the system in sec 4; system scenarios in sec 5 that illustrates some instruction with a proposed system; Sec 6 illustrates system use cases & Conclusion is in sec 7.

4.2 Overview of System

4.2.1 System Architecture – Here we are representing our system architecture in the form of a block diagram. Fig. 1 shows the block diagram-

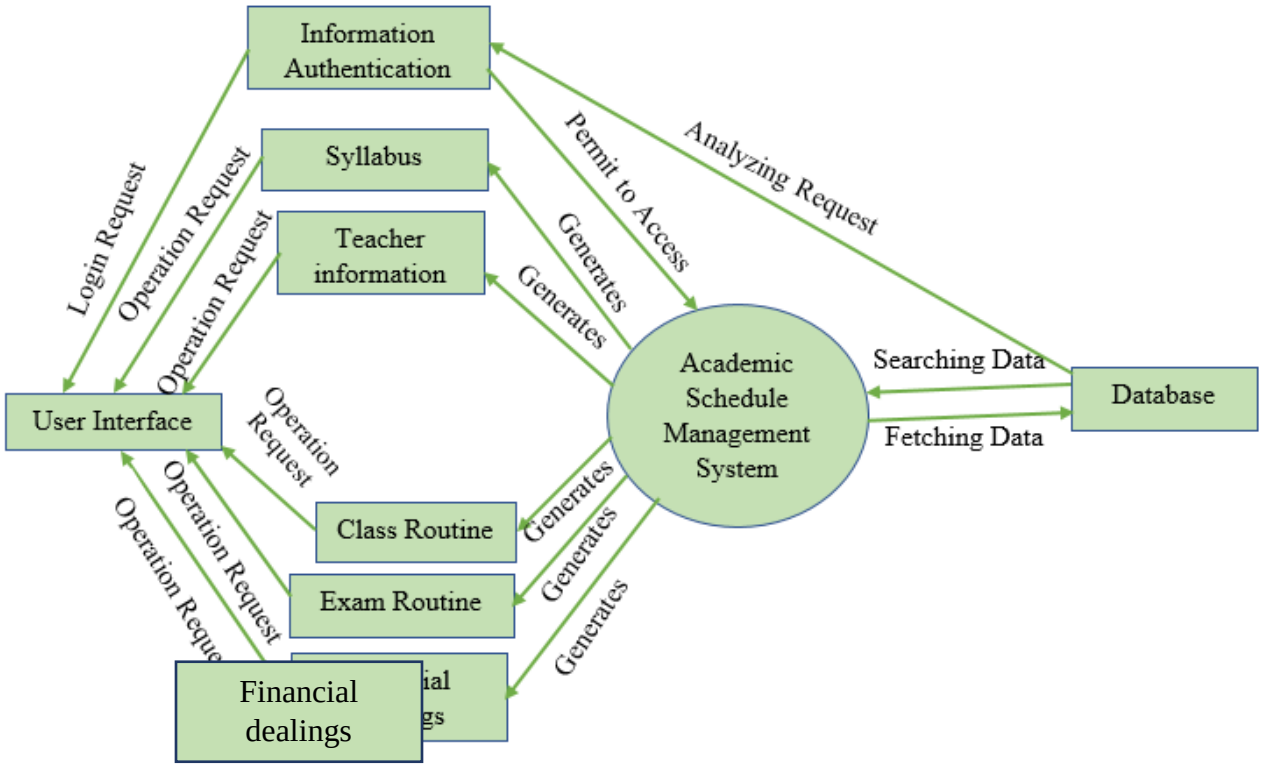

Fig 1: Block Diagram

4.3 User Requirement Definition

User requirements specify only the external behavior of the system, not system design characteristics. It should not use software jargons, structured notations or formal notations like the notations for class diagram & use case diagram. It should write user requirements in simple language, with simple tables and forms.

A.User Requirements:

System should provide the following services:

1. User should provide authentication service

2. Office authority should be able to insert new data

3. Office authority should be able to delete the desired data

4. Office authority and teachers should be able to update the desired data

5. All users should provide the facility to see the permitted info and the routine

B.. Constraints under which the system must operate:

The system we are developing must operate on some constraints as listed below:

01. A course can not be a part of more than one semester.

02. Time collision is not allowed. Only one teacher can take a class at a time.

03. 5 minutes should be given as break between two consecutive classes.

04. At least one day gap should be given between two exams.

05. All the course syllabus must be complete before the exam.

06. Preparatory leave of minimum five days must be given before the exam.

4.4 System Requirement Specification

System requirements are the extended version of user requirements. Software engineers use these requirements as the starting point of the system design. It is about how the requirements should be provided by the system. It should simply describe the external behavior of the system and its operational constraints.

4.4.1. System Requirements:

The list of system requirements are given below:

1.1. System will provide different types of registrations for students, teachers and office authorities, as these three types of users will have different types of task lists.

1.2. System will provide a Registration no. and a unique Password to the students to log in to the system.

1.3. System will provide a Teacher id and a unique Password to the teachers to log in to the system.

1.4. System will provide an ID and a unique Password to the students to log in to the system.

2.1. System will provide text box and a submit button to add or insert new data to the specified table, row, or column.

3.1. At first, system will provide text box and a search button to search the data to be deleted.

3.2. If the data is found, then the system will provide a delete button to delete that data from the database.

3.3. If the data is not found, then the system will show a pop-up with some message like, "The data is not found! Search Again…"

4.1. At the first place, system will provide text box and a search button to search the data or table or the specific entity of table to be updated.

4.2. If the data is found, then the system will provide some text boxes and a Go button to execute the update operation.

4.3. If the data is not found, then the system will show a pop-up with some message like, "The data is not found! Search Again…"

5.1. System will provide a menu to select which information (Department Teachers, Guest Teachers, Course info [1st……8thsemester]) to be showed.

5.2. If the user selects the Teachers option, the system will show a list of teachers in a page.

5.4. If the user selects the 1st semester course info option, the system will show a list of courses of that semester in a page.

4.4.2 Introducing Actors

The actors of our system are:

a. Office Authority

b. Teacher

c. Student

d. Admin

4.4.3 Functional Requirements of the system:

The functional requirements for a system describe what the system should do. These requirements depend on the type of software being developed, the expected users of the software, and the general approach taken by the organization when writing requirements. When expressed as user requirements, functional requirements are usually described in an abstract way that can be understood by system users. However, more specific functional system requirements describe the system functions, its inputs and outputs, exceptions, etc., in detail. The list of functional requirements are given in table (i):

Table (i): Functional Requirements

Serial No	Functional Requirements
01.	User Authentication Service.
02.	User must be able to login to the system.
03.	Admin have to be able to insert data.
04.	Admin have to be able to delete the desired data
05.	Admin have to be able to update data.
06.	Viewers should provide the opportunity to view all the academic information.
07.	System must provide a user id and a unique password to the users.
08.	System will provide a drop-down menu to show permitted info to its users
09.	System must show the Class Routine for all the semesters.
10.	System must show all the Exam routine.
11.	System must show the Syllabus from 1^{st} to 8^{th} semester.
12.	System must show all the teacher's information.
13.	System must show all the information related to financial dealings.
14.	System must provide some text boxes, buttons & pop-up to the insertion, deletion and updating operation on data.

4.4.4 Non-functional Requirements:

Non-functional requirements, as the name suggests, are requirements that are not directly concerned with the specific services delivered by the system to its users. They may relate to emergent system properties such as reliability, response time, and store occupancy. Alternatively, they may define constraints on the system implementation such as the capabilities of I/O devices or the data representations used in interfaces with other systems. The list of non-functional requirements are given in table (ii):

Table (ii): Non-Functional Requirements

Serial no	Non-Functional Requirements
01.	A course cannot be a part of more than one semester.
02.	Time collision is not allowed. Only one teacher can take a class at a time.
03.	If a senior and junior teacher may want to take class in the free timeslot at the same time, then the senior teacher should be given the class on the basis of priority.
04.	5 minutes should be given as break between two consecutive classes.
05.	At least one day gap should be given between two exams.
06.	Notice about financial dealings should be given at least two days before the starting date.
07.	All the course syllabus must be complete before the exam.
08.	Preparatory leave of minimum five days must be given before the exam.

4.5 System's Scenario

Scenarios can be particularly useful for adding detail to an outline requirements description. They are descriptions of example interaction sessions. Each scenario usually covers one or a small number of possible interactions. The scenarios of our system are described below:

Actor: First, actor should log in to the system

System: Then, the system checks user info with the data stored database and if a match is found, the system gives permission to access to the system

Actor: Normal users (Viewers) can view the all the academic information by the selecting option from the drop-down in the menu tab

System: The system first detects the user as Viewers and fetch the required data from database and gives the permission to see the information

Actor: Admin can view the all the academic information.

System: System detects the user as admin and gives the permission to view the desired data.

Actor: Office Authority can insert data to the database.

System: System first searches the table and if the table is found, then the system gives permission to insert new data to the specified table.

Actor: Office authority can delete data from the database.

System: System first gives some text boxes to enter which data to be deleted, then it searches data in the database and if the data is found, then the system gives permission to delete data from the specified table.

Actor: Office authority and teaches can update data in the database.

System: System first gives some text boxes to enter the table name which should be updated, then it searches the table in the database and if the table is found, then the system gives permission and some text boxes to enter the required data and replace data in the table with this newly entered data.

4.6 System's Use Cases

UC1: View the Academic Schedule and others info.

Actor: Admin and Viewers (Teachers, Students & Others).

Preconditions: System display the login page.

Main Success Scenario:

1. User click' login' option and user enter user name and ID.

2. User press 'ok ' button and System authenticate the User name and ID.

3. System delivers "mgs" Successful and display home page.

4. Users (Admin & Viewers) can view Academic schedule and others permitted info by selecting option from top -down in the menu tab.

Post condition: System display successfully.

Exception or Alternative course: We have not provided any alternative course for the security purpose.

UC2: Insert data to the specified table in the database.

Actor: Admin.

Preconditions: The specified table in the database must exists.

Main Success Scenario:

1. System searches table.

2. System found the table.

3. The system gives some text boxes to enter new data to be inserted.

4. System gives permission to insert new data to the specified table.

***Post conditions*:** Insertion done.

Exceptions or Alternative Course: Null for security purpose.

UC3: Delete data to the specified table in the database.

Actor: Admin Preconditions: The desired data must exist in the database.

Main Success Scenario:

1. System first gives some text boxes to enter which data to be deleted.

2. System searches data in the database.

3. If System is found the data.

4. The System gives permission to delete data from the specified table.

Post conditions: Deletion is succeeded.

Exceptions or Alternative Course: Null for security purpose.

UC4: Update data to the specified table in the database.

Actor: Admin.

Preconditions: The table must be exist in the database.

Main Success Scenario:

1. System first gives some text boxes to enter the table name which should be update.

2. System searches the table in the database.

3. System is found the table.

4. System gives permission and some text boxes to enter the required data in the table.

5. System gives permission to replace data in the table with newly entered data.

Post conditions: Updating is succeeded.

Exceptions or Alternative Course: Null.

4.7 Use Case Diagram

Use case is a simple scenario that describes what a user expects from system. Each Use Case represents a discrete task that involves external interaction with a system. Use case diagram shows the interactions between a system and its environment. The use case diagram of our project is given in figure no. 2:

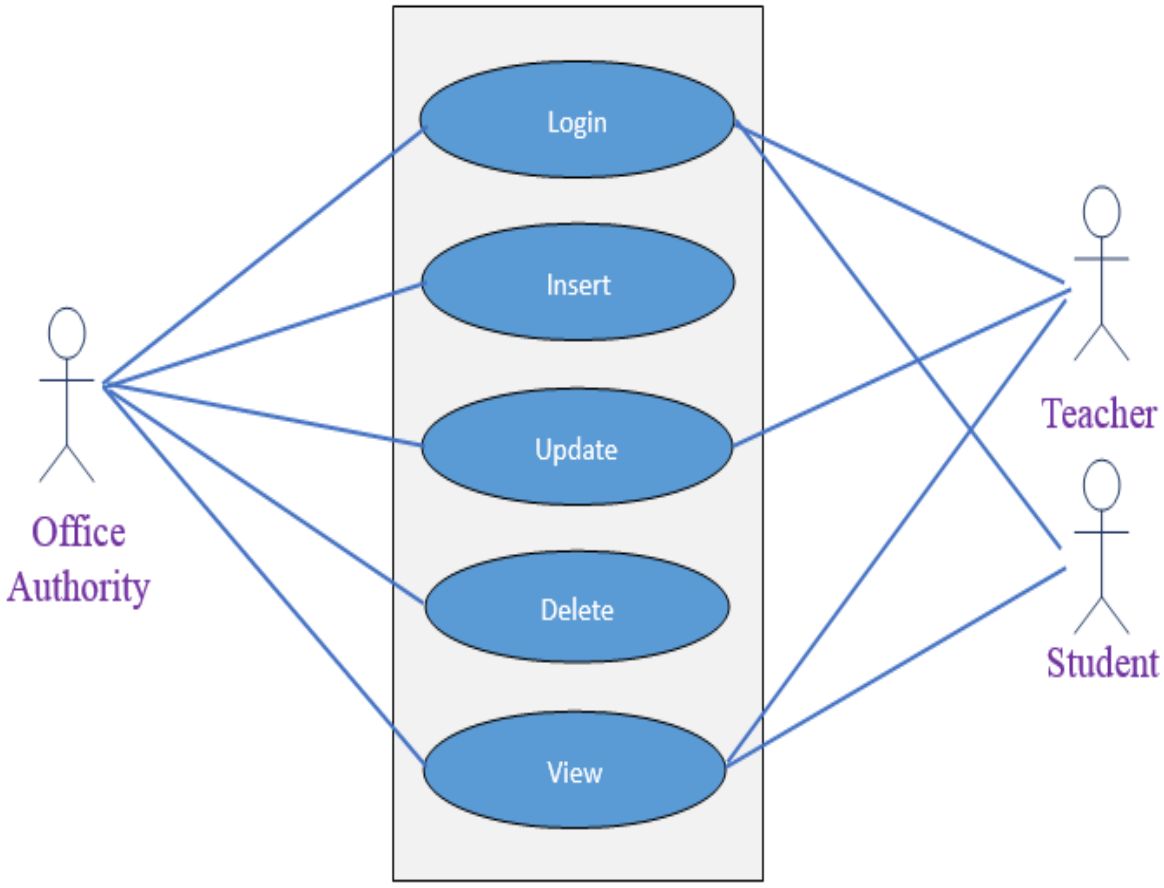

Fig 2: Use Case Diagram

4.8 Conclusion:

We hope that we would be able to develop the whole system according to this SRS.