SYSTEM ANALYSIS PROJECT TEAM

Group 6 Section 2

Project Name :

School Management System

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School Management System - System Analysis Report

Basic overview of the system:

The School Management System is a user-friendly digital platform designed to modernize school operations and improve communication between all stakeholders. The system provides centralized access to student information, simplifies academic workflows, and offers real-time interaction between students, teachers, parents, and school administrators. It is tailored for various educational levels, from primary to high school, in both public and private institutions.

Challenges Identified:

1. Lack of parental engagement due to no direct access to students' academic performance.
2. Difficulty in submitting and tracking requests such as study group formation.
3. Delayed communication and inefficient follow-up on students' progress.

School Management System - System Analysis Report

Interview with SUN SCHOOL for school management systems:

1. What problems do you face with managing student records and grades?

2. How do you currently communicate with your parents?

3. How do students request study groups or activities?

4. How do you track attendance and grades?

5. What features would make school operations more efficient?

Before (Traditional School Management):

- Teachers spend time manually marking attendance and entering grades.
- Parents have no direct access to students' academic performance.
- Students have to submit group formation requests through physical forms.
- Communication between teachers, parents, and administrators is delayed and inefficient.

After (Sun School Management System):

- Attendance is marked digitally by teachers in real-time.
- Parents have direct access to students' grades and progress via the portal.
- Students can request and track study group formations through the system.
- Real-time communication and notifications are sent to all stakeholders.
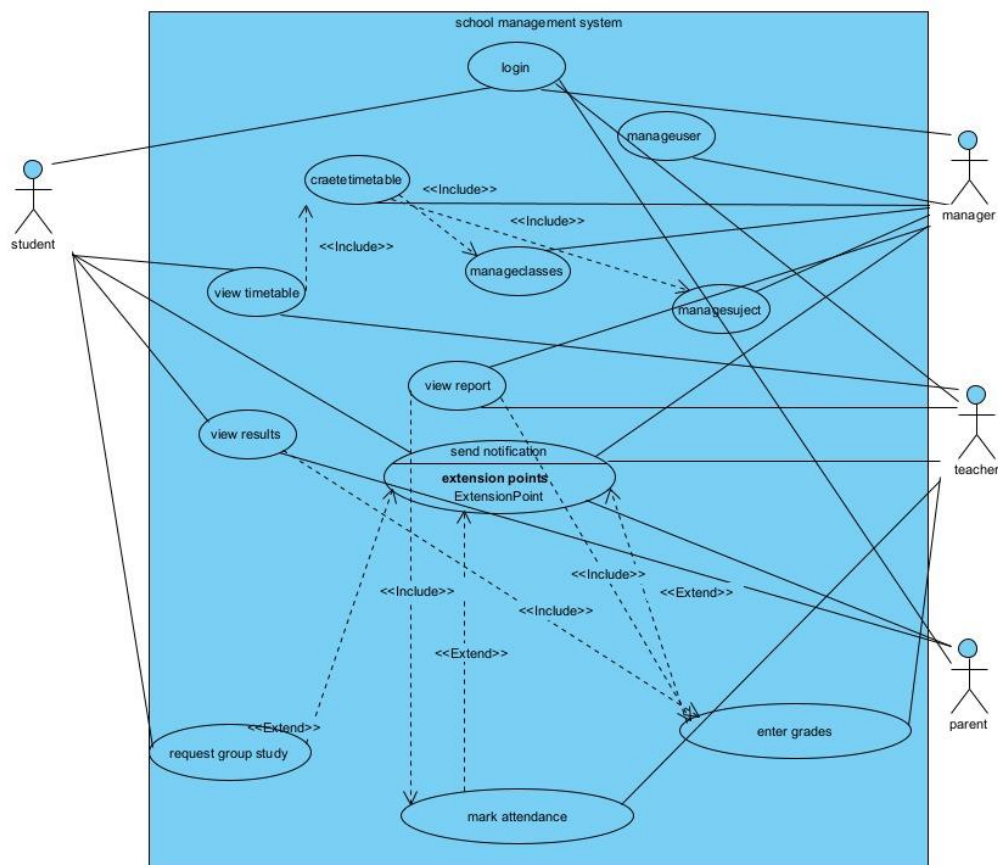
Key Takeaways:

- Efficiency improvement (automatic attendance and grade reporting).
- Increased parental engagement (direct access to grades and updates).
- Reduced delays (instant communication and notifications).
- User convenience (easy requests for study groups, grade tracking, and attendance)

• USE CASE DIAGRAM

✓ Students can log in, view their timetable, request study groups, view grades, and track attendance.
✓ Parents can log in, view their child's grades, attendance, and progress.
✓ Teachers can mark attendance, enter grades, and send notifications.
✓ Administrators can manage user accounts, manage classes, assign subjects, and create timetables.
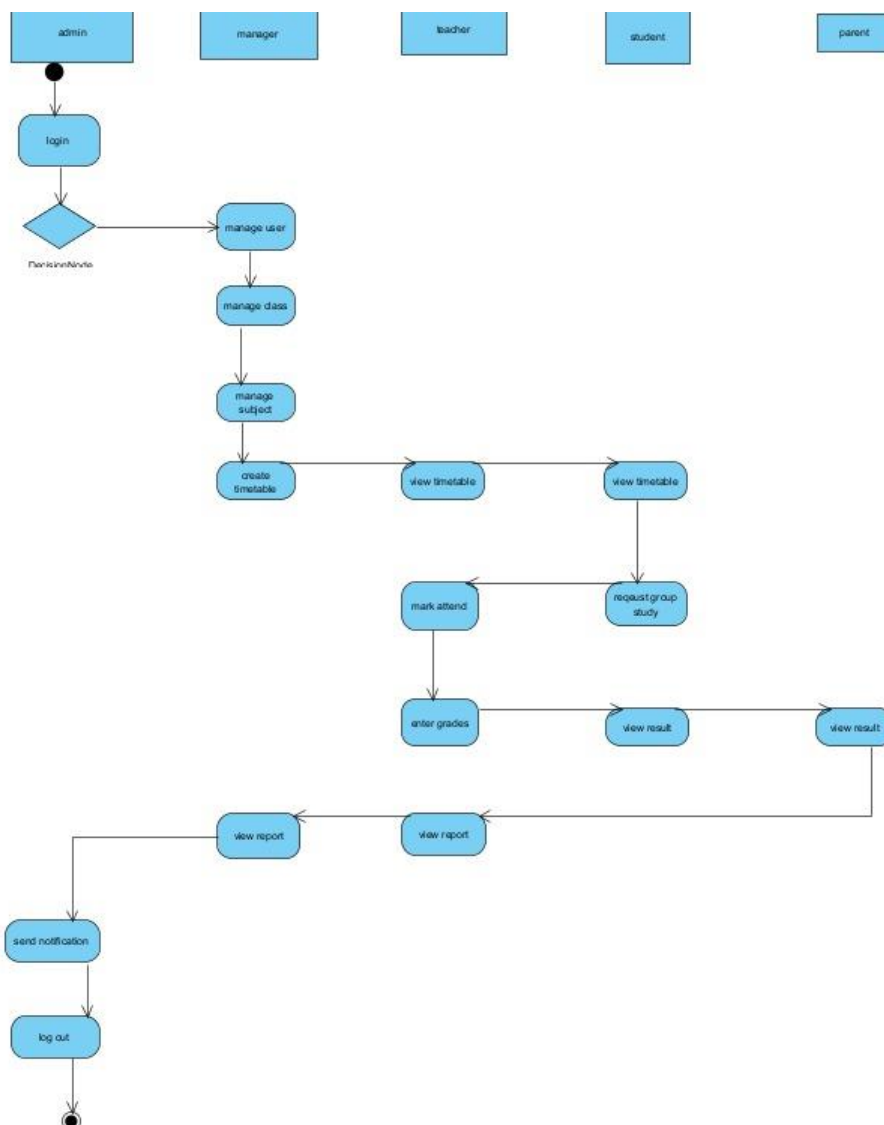✓ It also includes shared functions like sending notifications and viewing reports for all users.

Benefits: Use case diagrams to simplify system understanding, clarify user roles, and highlight required functions. They enhance

communication among team members and serve as a strong foundation for system analysis and testing.

• ACTIVITY DIAGRAM

✓ Students log in, view timetables, request study groups, and check grades.
✓ Parents check their child's grades and attendance.
✓ Teachers mark attendance, enter grades, and send notifications.
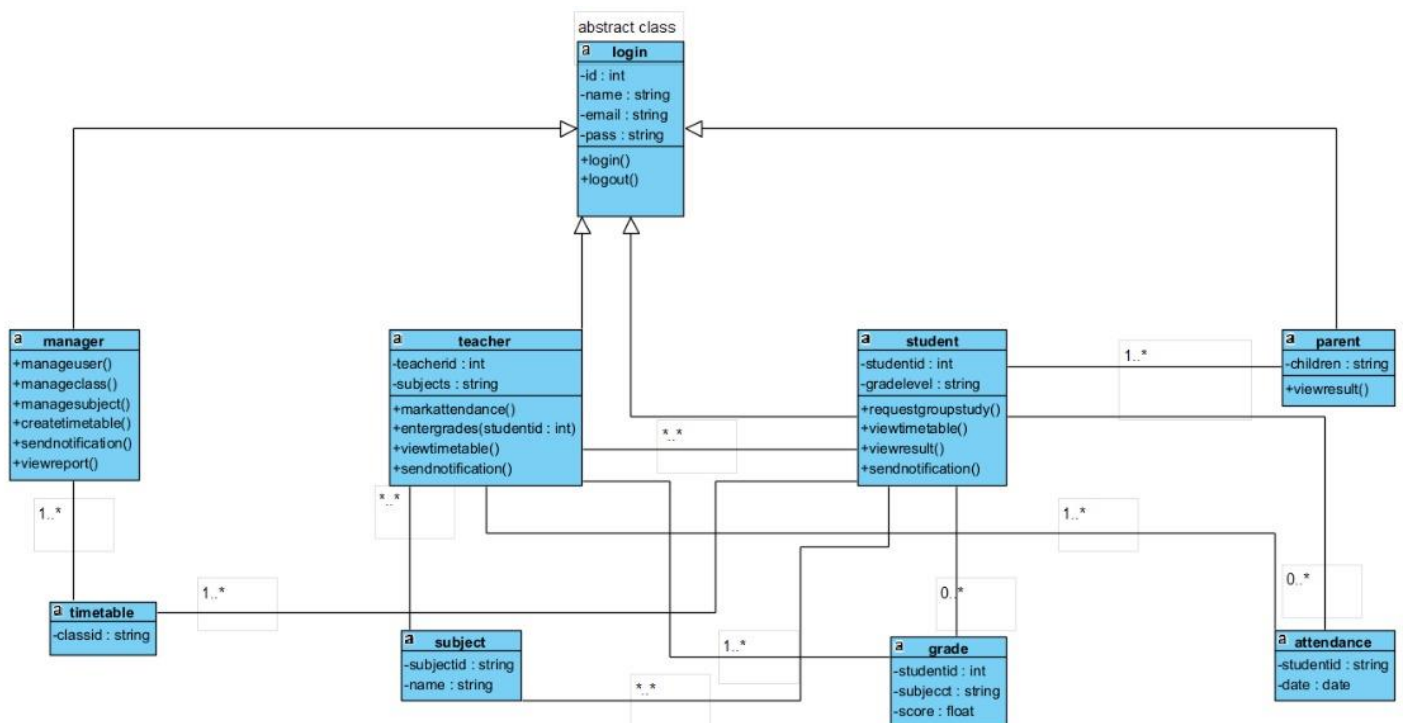✓ Administrators manage users, classes, subjects, and timetables

Benefits of Activity Diagrams: They simplify system behavior, clarify user-system interactions, and expose process logic visually. This helps developers detect bottlenecks, align teams on functionality, and improve overall system design communication.

• CLASS DIAGRAM

✓ class diagram represents the system's static structure, showing classes like User, Student, Teacher, Parent, Administrator, Class, Subject, Grade, Timetable, and Attendance, with their attributes and methods. It illustrates the relationships between users, their academic details, grades, attendance, and timetables.
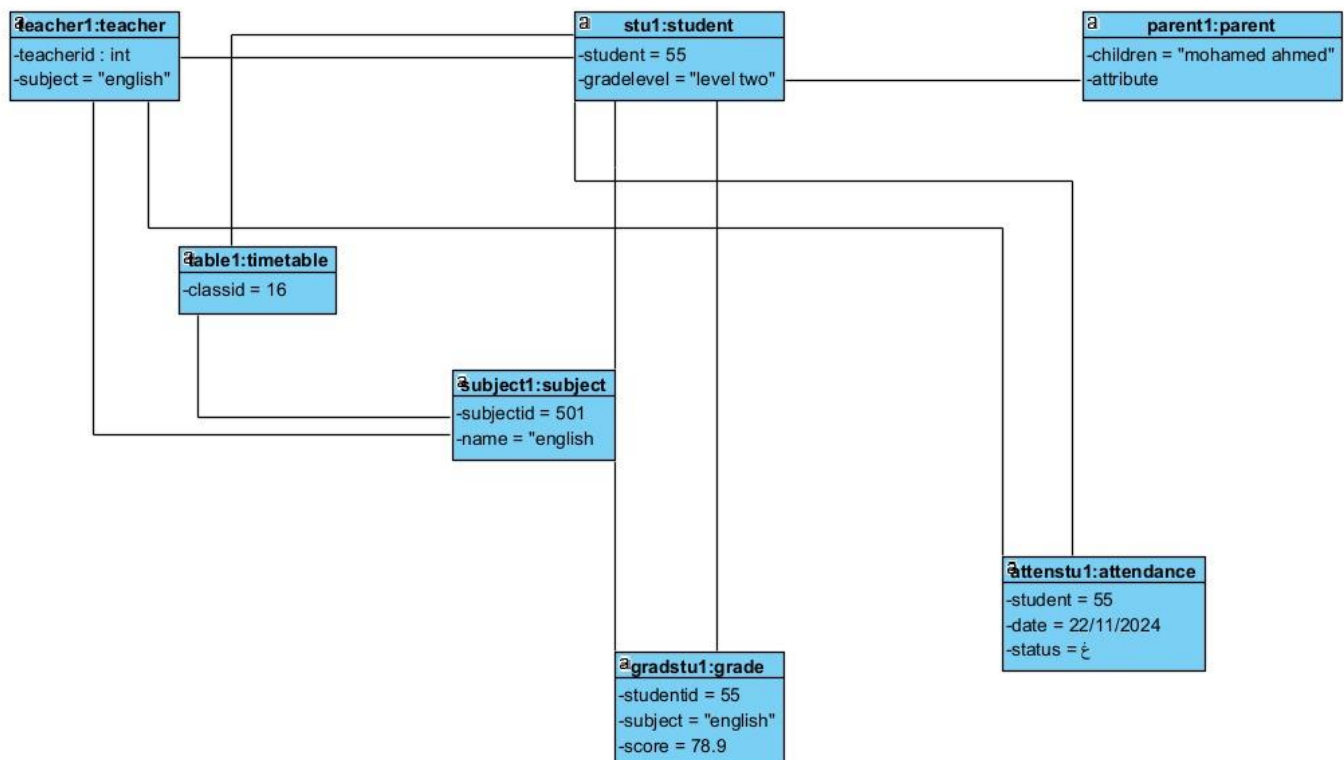
Benefits of Class Diagrams: They clarify object structure, class responsibilities, and relationships, which support effective system design and implementation. Class diagrams help developers plan code architecture, promote reusability, and ensure alignment with system requirements

• OBJECT DIAGRAM

✓ This object diagram presents a real-time snapshot of system objects and their states during various school operations. It shows specific instances like student1, teacher1, parent1, and how they interact with class1, subject1, grade1, and attendance1 in the system.
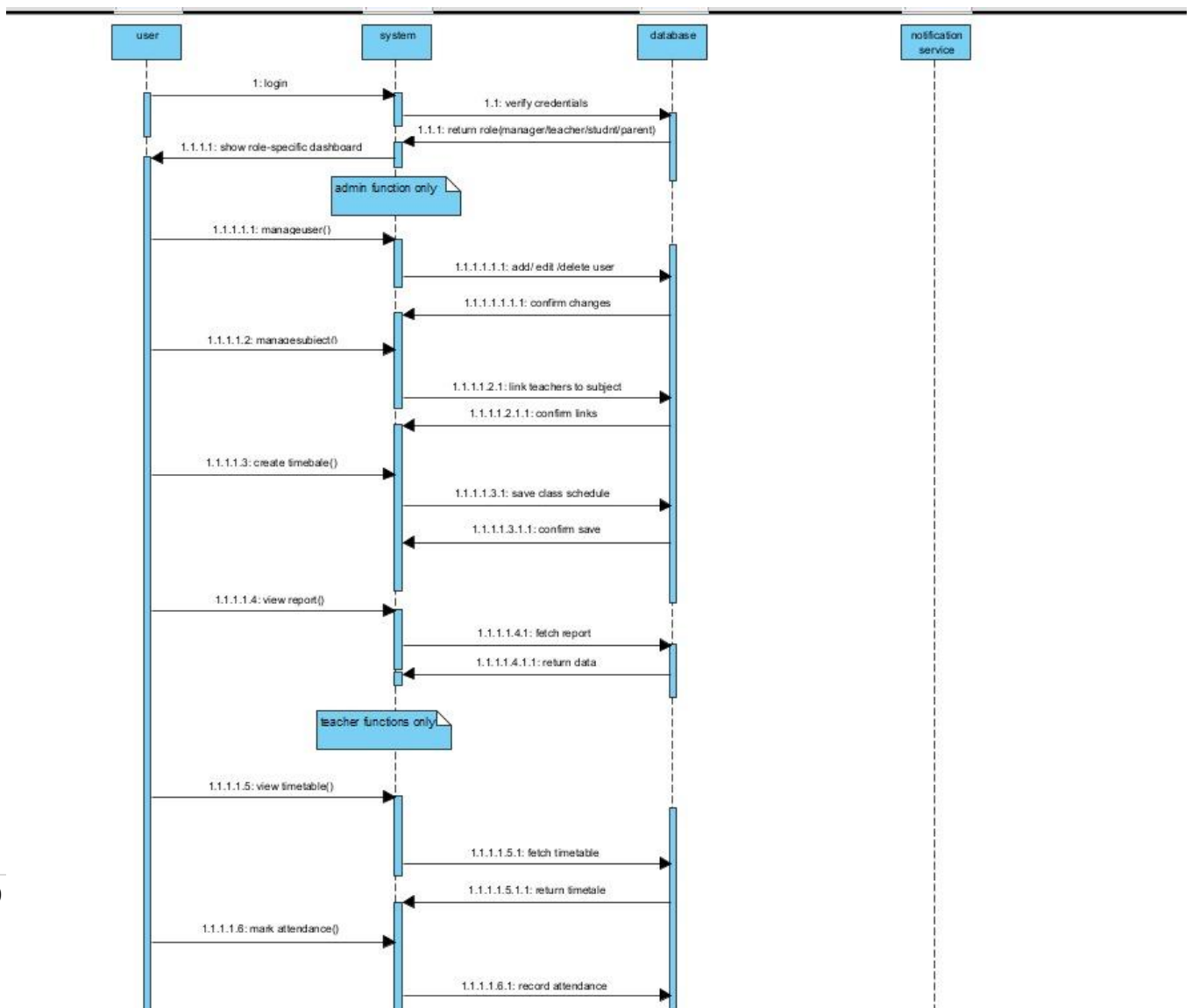
Benefits: Object diagrams provide a concrete view of the system's runtime structure. They help validate class relationships, confirm attribute values, and are excellent for debugging, testing, and understanding example system behavior.

• SEQUENCE DIAGRAM

✓ This sequence diagram captures the real-time interaction between a student, teacher, parent, administrator, and the school management system. It shows the step-by-step process of logging in, viewing timetables, requesting study groups, marking attendance, entering grades, and viewing reports

Benefits: Sequence diagrams visualize the timing and flow of messages between system components, clarify dynamic behavior, and help in identifying process delays, dependencies, and integration points.

teacher functions only

1.1.1.1.5: view timetable()

1.1.1.1.5.1: fetch timetable

1.1.1.1.5.1.1: return timetale

1.1.1.1.6: mark attendance()

1.1.1.1.6.1: record attendance

1.1.1.1.6.1.1: comfirm recording

1.1.1.1.7: enter grades()

1.1.1.1.7.1: save grade

1.1.1.1.7.1.1: confirm save

1.1.1.1.8: view report()

1.1.1.1.8.1: fetch report data

student functions only

1.1.1.1.9: view timetable()

1.1.1.1.9.1: fetch timetable

1.1.1.1.9.1.1: rreturn timetable

1.1.1.1.10: requestgroupstudy()

1.1.1.1.10.1: send request

2: yes/no request acceoted

1.1.1.1.11: view results()

1.1.1.1.11.1: fetch grrades

1.1.1.1.11.1.1: return results

shared function

1.1.1.1.12: sendnotification()

1.1.1.1.12.1: deliver notification

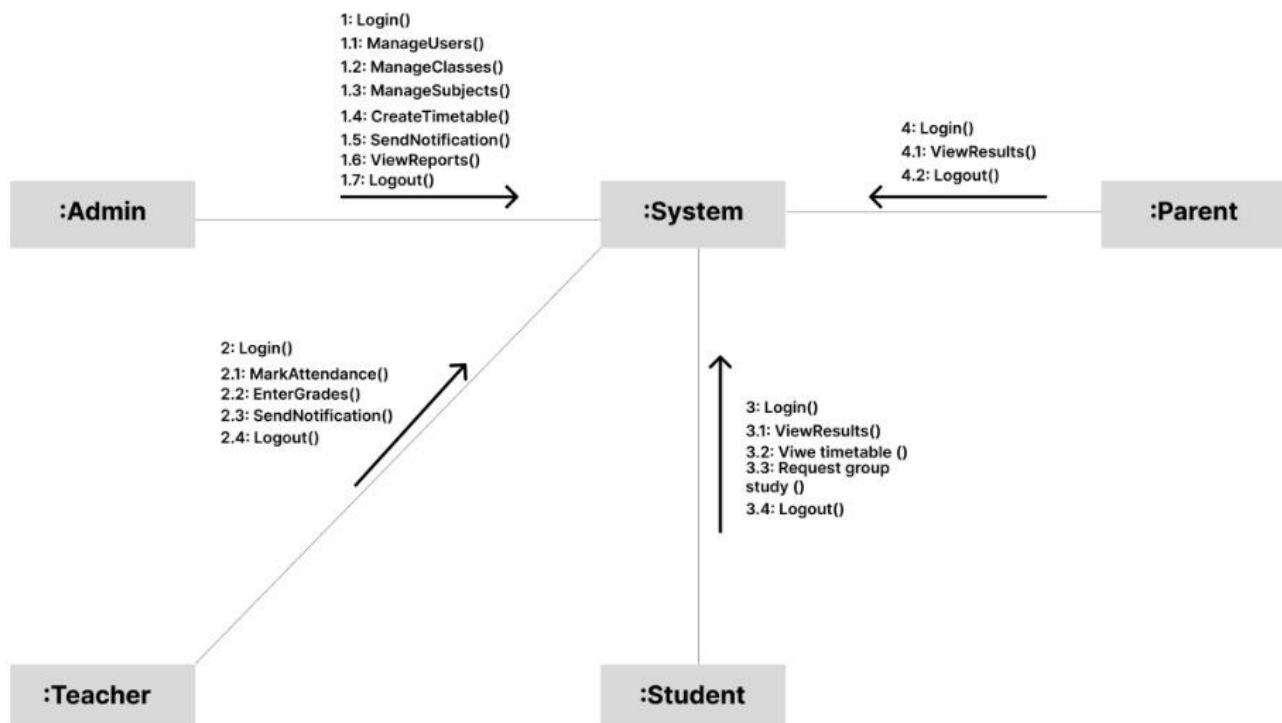1.1.1.1.12.1.1: confirm delivery

10

1.1.1.1.13: logout()

- ## **COLLABORATION DIAGRAM**

  ✓ It visually sequences operations like login, viewing timetables, marking attendance, entering grades, requesting study groups, and sending notifications. Each message is numbered to reflect the interaction flow between the system's components.

Benefits: Collaboration diagrams highlight object relationships and communication paths. They're useful for understanding how components interact to complete tasks, especially when focusing on structural and behavioral integration.
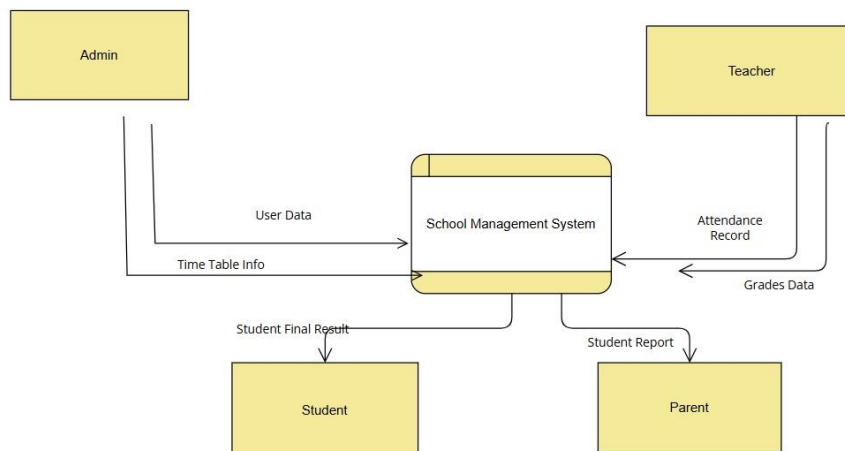

1: Login()
1.1: ManageUsers()
1.2: ManageClasses()
1.3: ManageSubjects()
1.4: CreateTimetable()
1.5: SendNotification()
1.6: ViewReports()
1.7: Logout()

4: Login()
4.1: ViewResults()
4.2: Logout()

:Admin

:System

:Parent

2: Login()
2.1: MarkAttendance()
2.2: EnterGrades()
2.3: SendNotification()
2.4: Logout()

3: Login()
3.1: ViewResults()
3.2: Viwe timetable ()
3.3: Request group study ()
3.4: Logout()

:Teacher

:Student

- # **DATA FLOW DIAGRAM**

  ✓ This DFD shows how data flows between system components in three main processes: Student Management, Grade Management, and Attendance Management. It highlights interactions among the Student, Teacher, Parent, Administrator, and System Database.
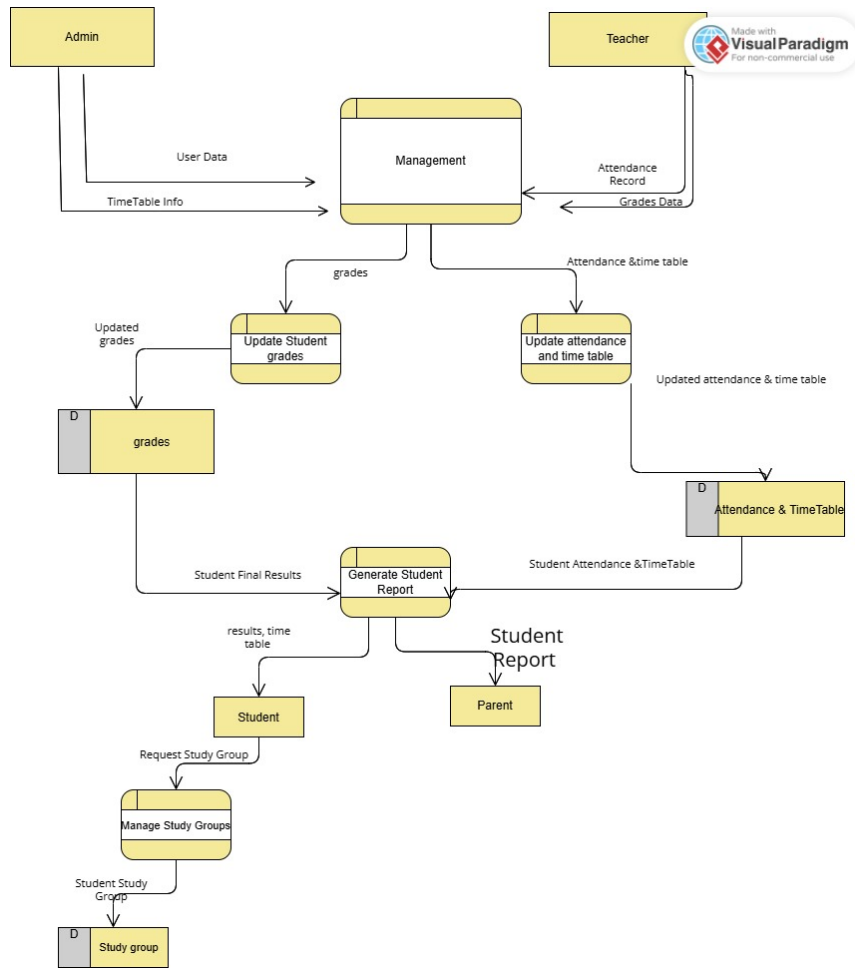
  Benefits: Helps understand system logic, data movement, and highlights potential optimization or security issues

  ## **1- CONTEXT DIAGRAM**

  1.

2. LEVEL ZERO DIAGRAM

3.