

ATTENDANCE TRACKING SYSTEM

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Problem Specification

The below is the specification for recording attendance in Attendance Tracking System. The Teaching Assistant, who will enter student attendance information into the system. Instructor being the supporting actor will process the sign-in sheet and provide it to the Teaching Assistant. Teaching Assistant will update the system.

The system implements the following features

1. Add, modify, or delete courses. Recall from your class diagrams the fields needed in a course object.
2. Add, modify, or delete students. Each student should have a unique ID, like your NetID. Deleting a student should remove that record from any courses he/she is taking.
3. Add or remove students from a particular course. Remember that a student may be taking more than one course.
4. Record attendance on a specific day for a particular course. The user interface here is important. Make this easy to use and easy to fix errors. This module must also allow the user to change attendance for a given day.
5. Show complete attendance for all days for a particular course. That is, show a chart of each student in the course and which days he/she was present and absent.
6. Show a line graph or histogram of attendance for a particular course. This does not show detail, just how many students were present or absent on a given day.

ID:Use Case #1

Use Case Description: The below is the specification for recording attendance in Attendance Tracking System. The primary actor is the Teaching Assistant, who will enter student attendance information into the system. Instructor being the supporting actor will process the sign-in sheet and provide it to the Teaching Assistant. Teaching Assistant will update the system.

Use Case Name: Recording Attendance .

Scope: Attendance Tracking System

Level: User-goal

Actors: Teaching Assistant (Primary), Instructor (Supporting)

Stakeholders:

- * Teaching Assistant: Updates day to day attendance from sign-in sheet to the system.
- * Instructor: Makes the student sign in the attendance sheet. At the end of each class this sheet is given to the Teaching Assistant.
- * Student: Record their attendance in sign-in sheet, collaborates with the Teaching Assistant to track his/her attendance.

Preconditions:

- Students should be identified and Instructor should record attendance in sign-in sheet .
- Active network connection to use the system.

Success Guarantee:

Successful Completion

Teaching Assistant must be able to mark attendance into the system.

Failure Condition

The student record has not been properly updated with the attendance.

Main Success Flow:

- 1.** Students receive a sign-in sheet from the Instructor.
- 2.** They are asked to sign in ,which reflects their presence.
- 3.** Instructor gives the sign-in sheet to the Teaching Assistant.
- 4.** The Teaching Assistant takes the sign-in sheet from the Instructor.
- 5.** Adds student record (Net Id and Student Name) to the system.
- 6.** By referencing the sign-in sheet, the Teaching Assistant will mark the attendance into the system.

Extensions:

***a.** At any time,data entered by Teaching Assistant might be incorrect.

***b.** At any time,System fails:

1a.To support recovery of recorded data,ensure all the updates are logged in.

- 1.**Teaching Assistant restarts the system and request recovery of prior state.
- 2.** System reconstructs the prior data.

1b.System fails to update the database due to database anomalies.

***c.** At any time,student drops out of course:

1.If a student drops out of he course,Teaching assistant drops the student entry.

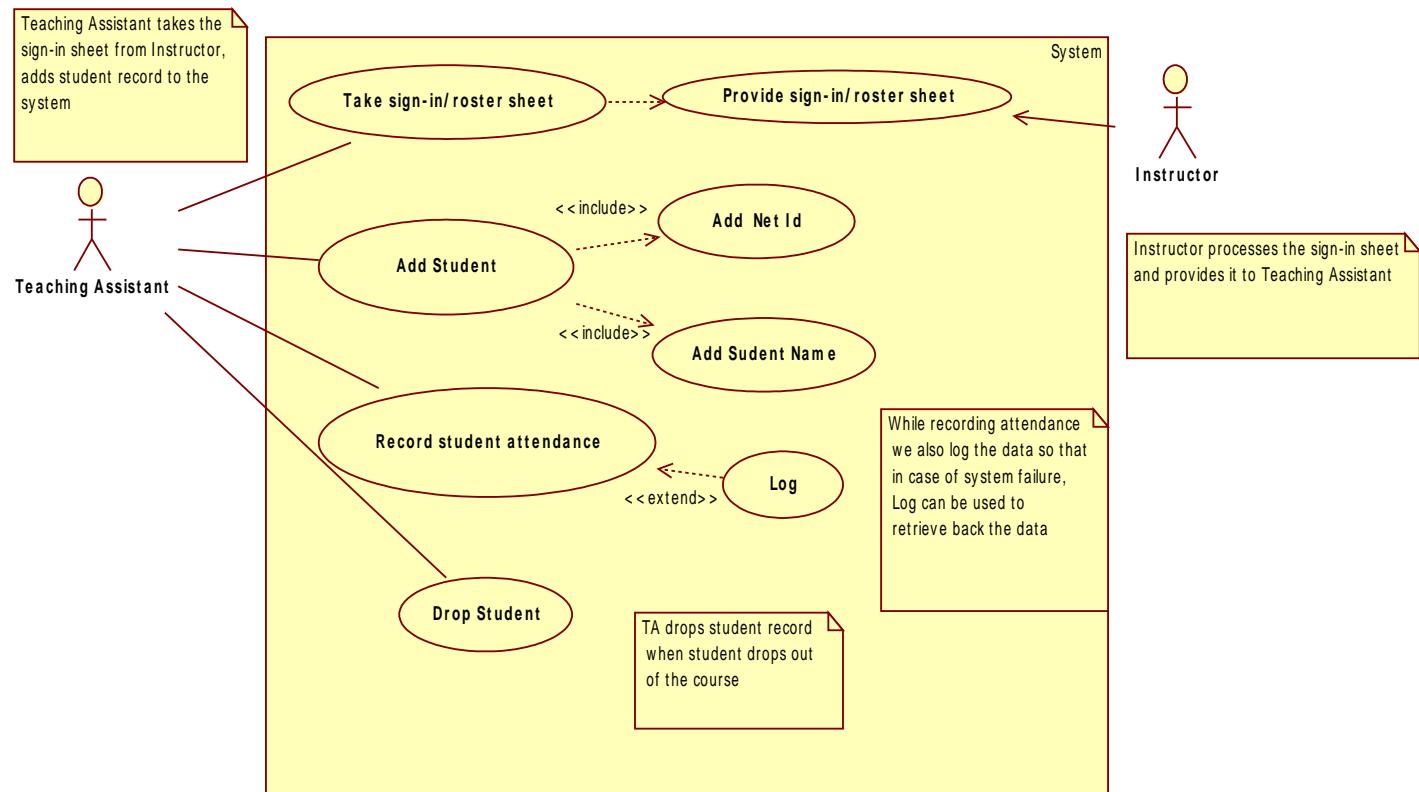
Special Requirements:

- The system should have well built user interface.
- Language Internationalization.

Technology and Data Variations List:

Database is used to record attendance.

Frequency of Occurrence: After every class/Could be nearly continuous



a) Use Case for Recording Attendance

ID:Use Case #2

Use Case Description: The primary actor is the Teaching Assistant, who will lookup for the attendance information from the system and generate a report. The generated report can be used by the Instructor to analyze the attendance of students.

Use Case Name: Tracking Class Attendance and Report Generation

Scope: Attendance Tracking System

Level: User-goal

Actors: Teaching Assistant (primary).

Stakeholders:

Teaching Assistant: Wants to know how many students were present for a particular class, views student attendance, generates report.

Instructor: Uses reports generated by the Teaching Assistant to track the students attendance history.

Preconditions:

- In order to generate a report the details should be updated successfully in the database.
- Active network connection to use the system.

Success Guarantee:

Successful Completion

Report Generation. The report specifies the total number of students enrolled for a course along with number of students who were present for a class.

Failure Condition

Inconsistent data in the system leads to error in report generation.

Main Success Flow:

- 1.** Teaching Assistant logs in to the system by providing the credentials.
- 2.** The course that is taken up by the Instructor is displayed with the registered students for that course.
- 3.** Teaching Assistant views the student and class attendance (Student attendance can be viewed using Net Id or Student Name).
- 4.** Generates a report.
- 5.** Prints the report.

Extensions:

***3 a.** At any time, viewing student attendance might fail because of incorrect search key(Net Id or student name).

***4 a.** At any time, Report generation might fail .

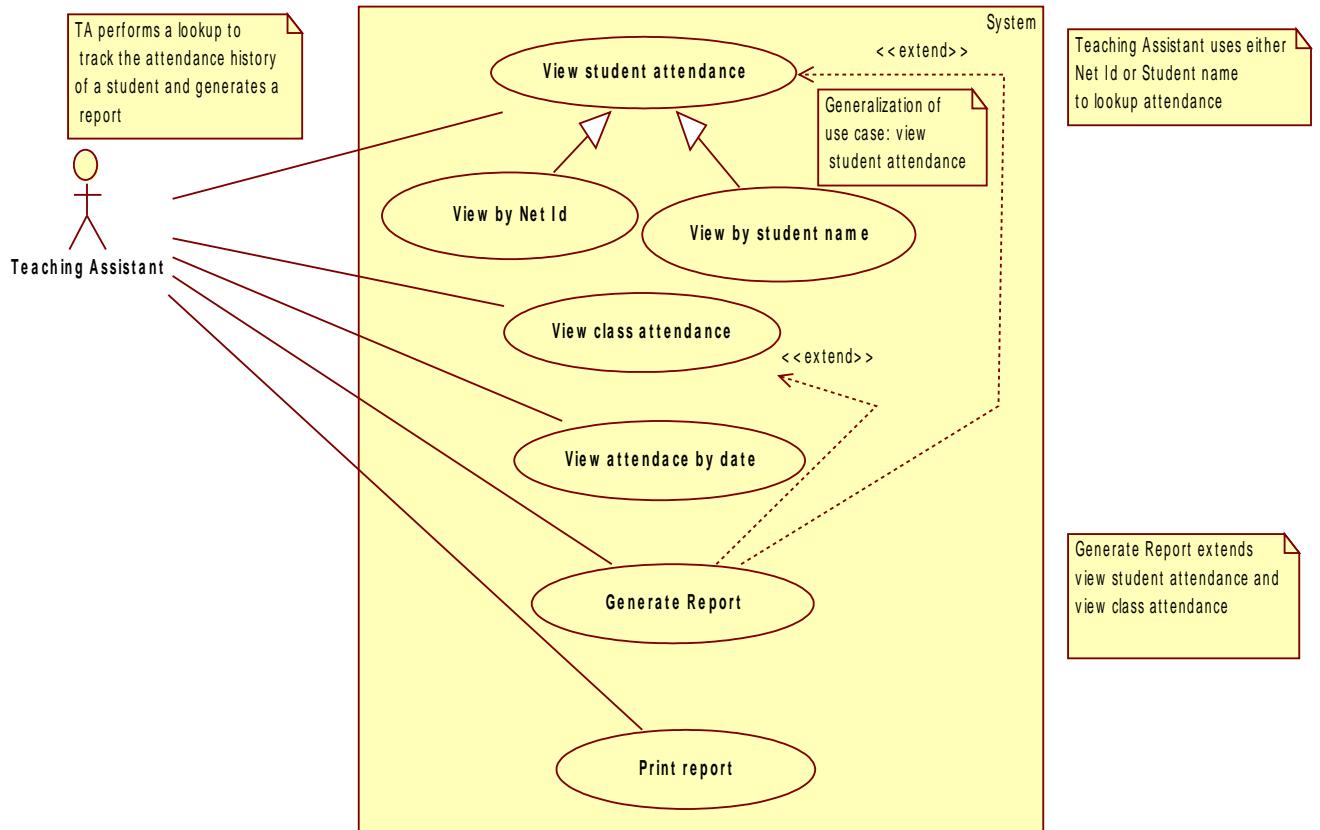
Special Requirements:

- It should support robust lookup mechanism to view student attendance.
- It should support printing devices to print the report.
- The system should have well built user interface.

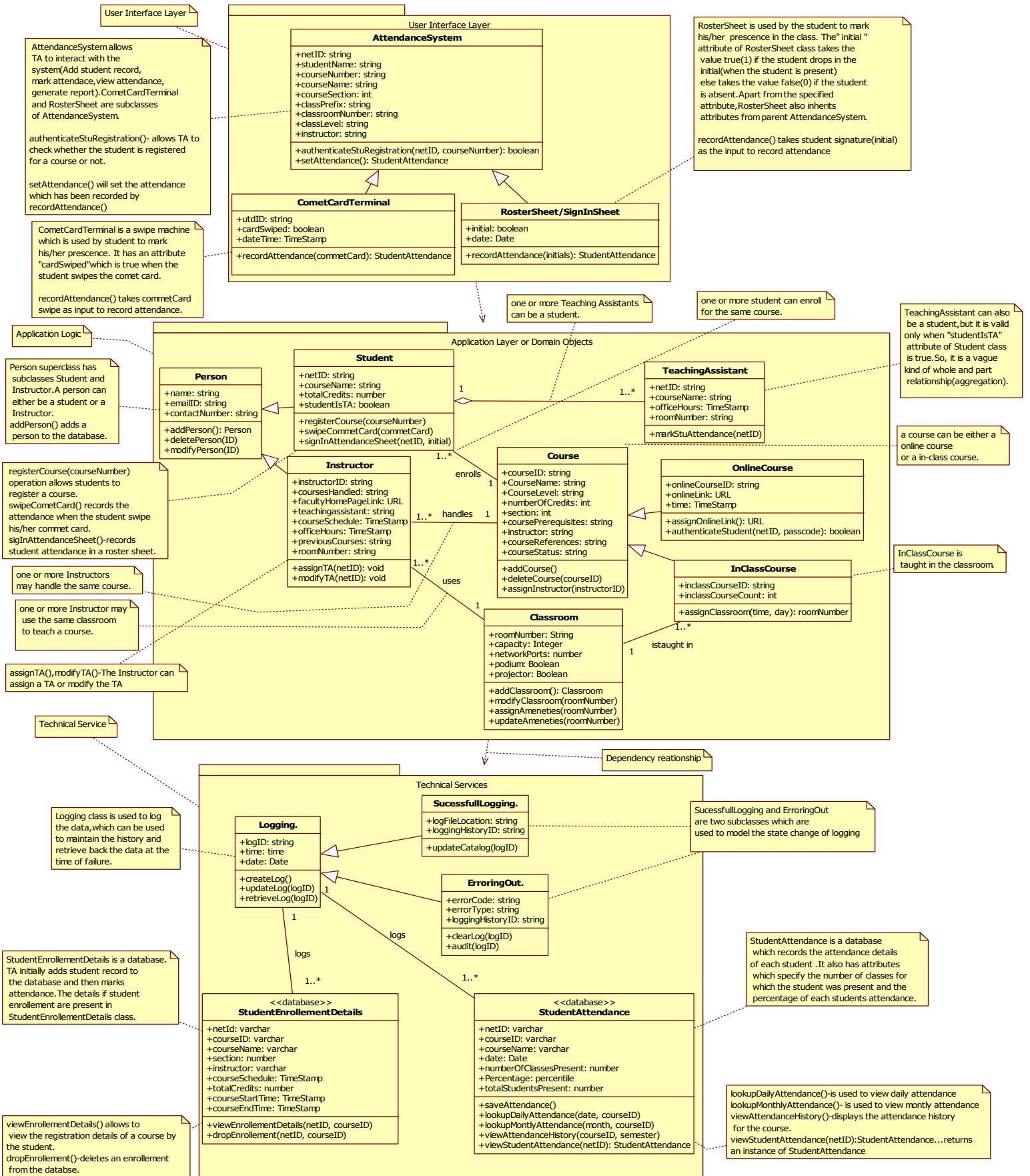
Technology and Data Variations List:

- For report generation any of the open source data analytics software can be used.

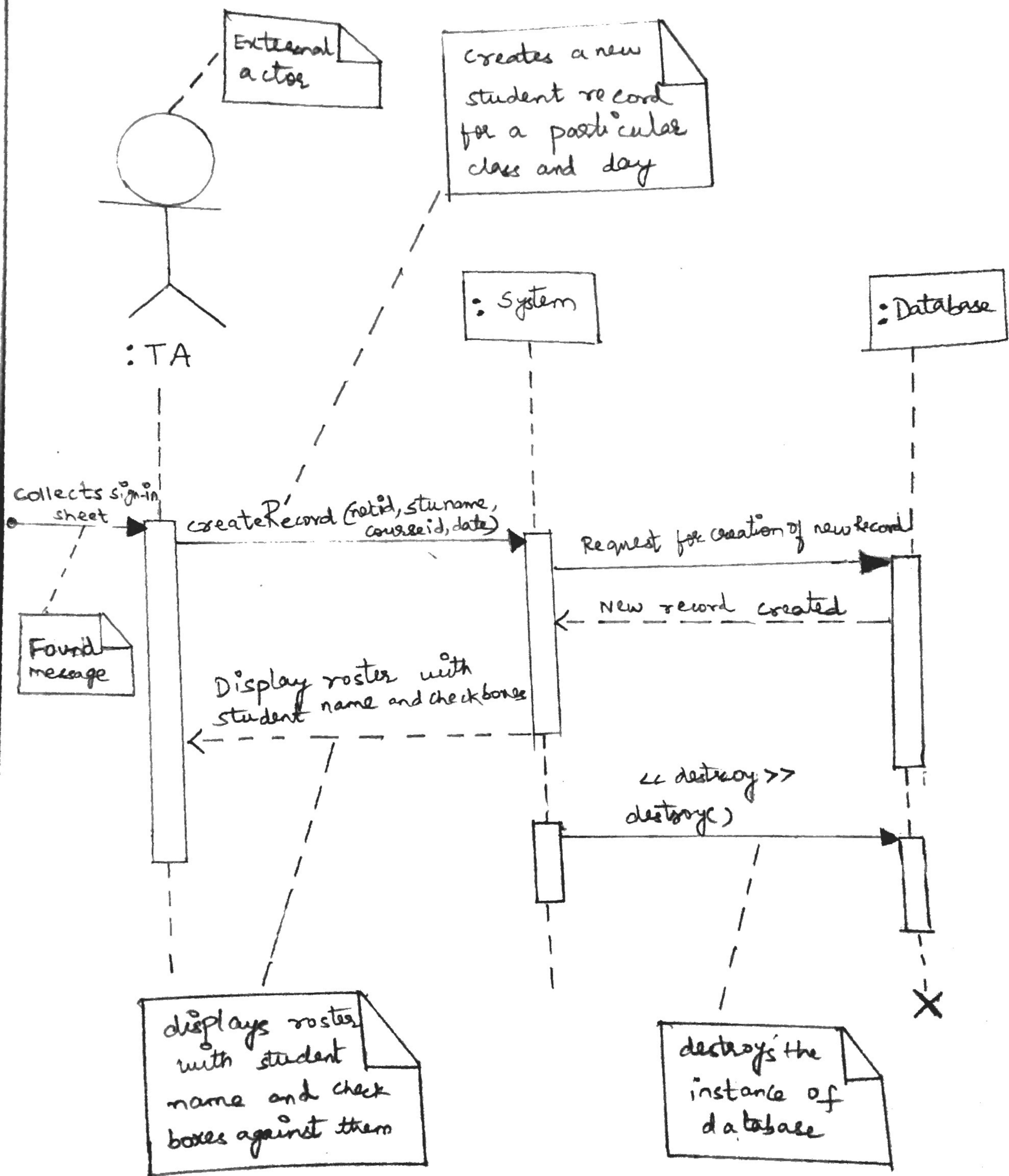
Frequency of Occurrence: Weekly/Periodically



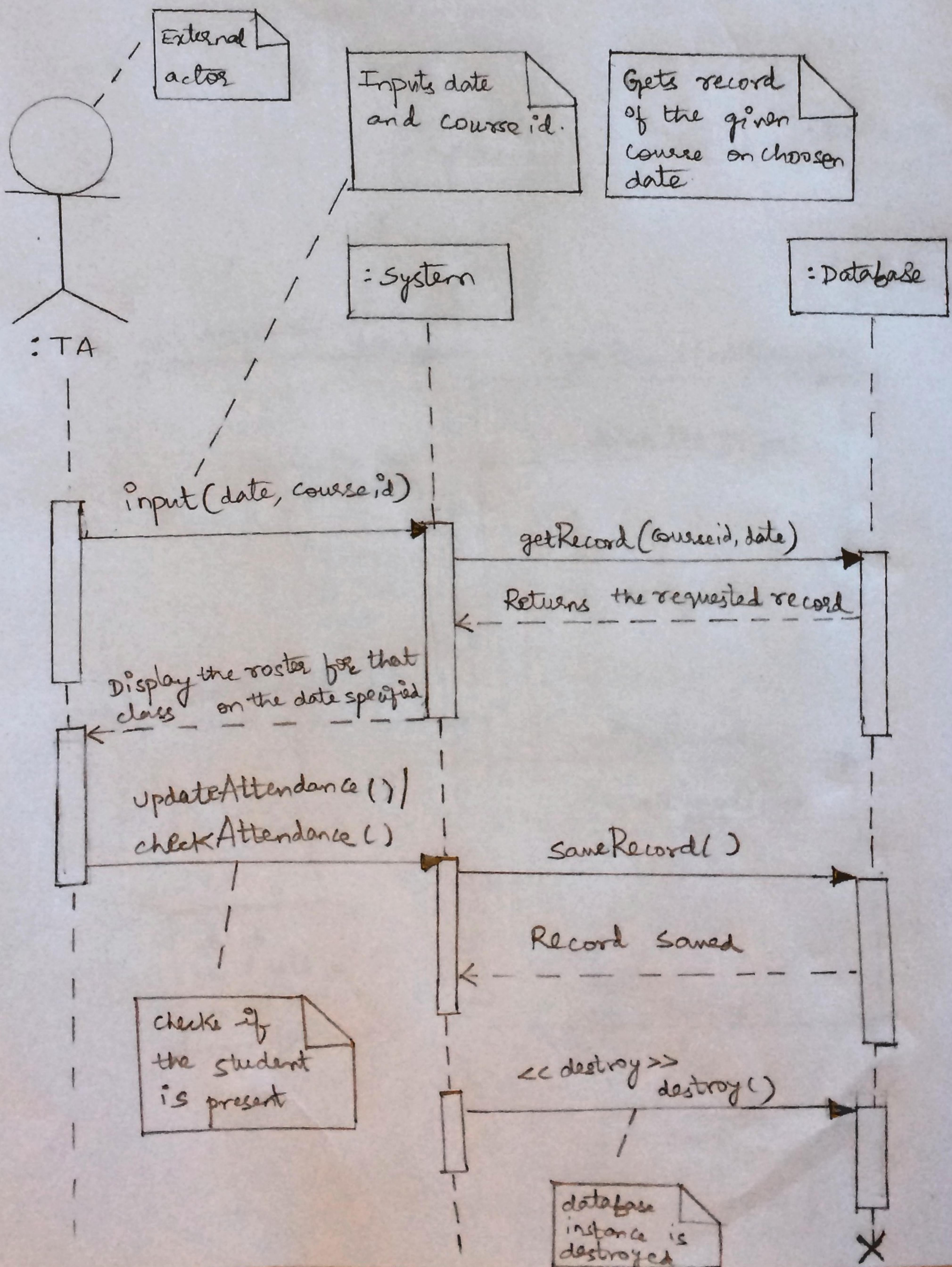
b) Use Case for Generating Report



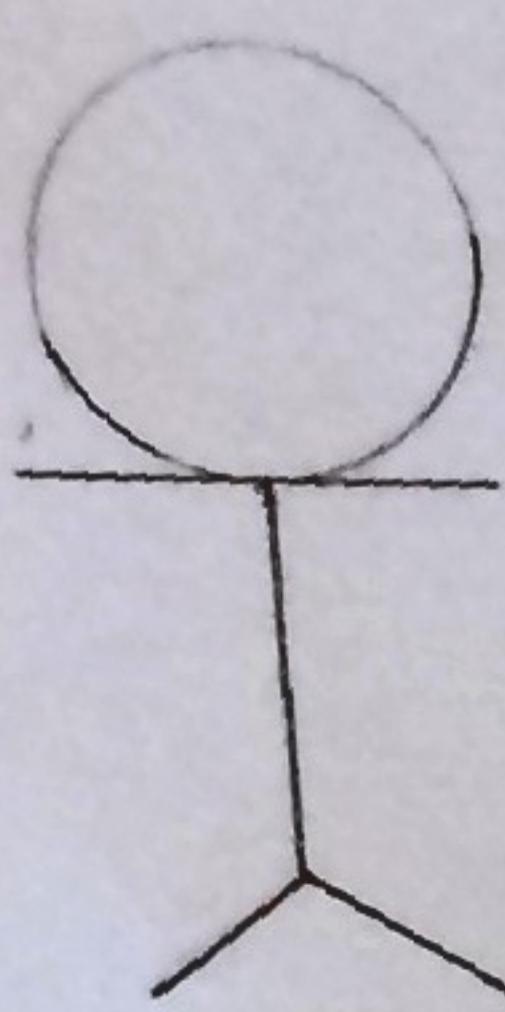
Add student record scenario



Record student attendance / Update Attendance record



Drop student Scenario



:TA

Requests
attendance record
for a class on a
date

: System

Gets record
of the selected
class/course

: Database

attendanceRecord(netid, courseid,
date)

getRecord(netid, courseid)

Displays the class
roster

Giving the record

dropStudent()

modifyRecord()

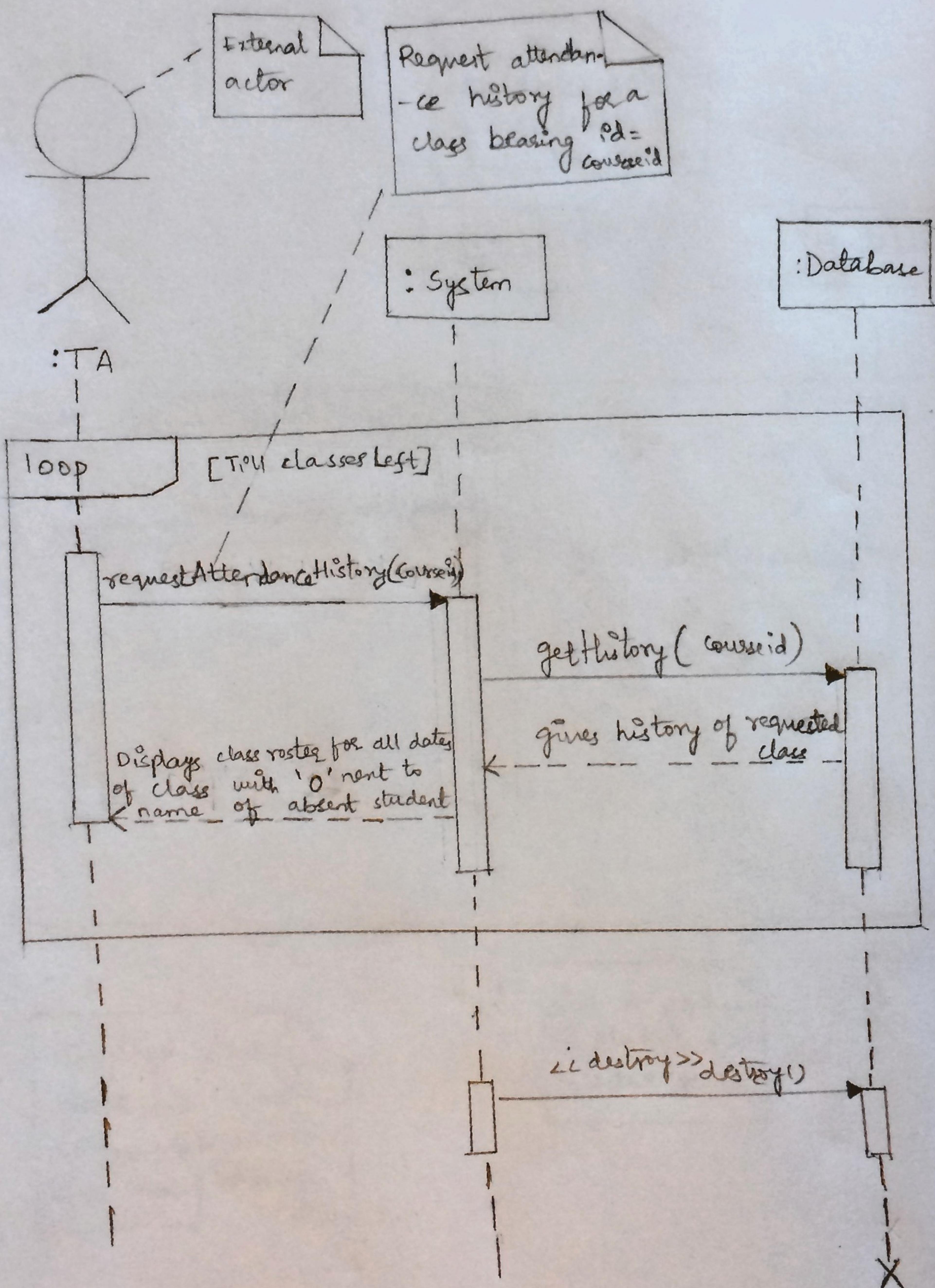
Record modified

check
student's to
remove

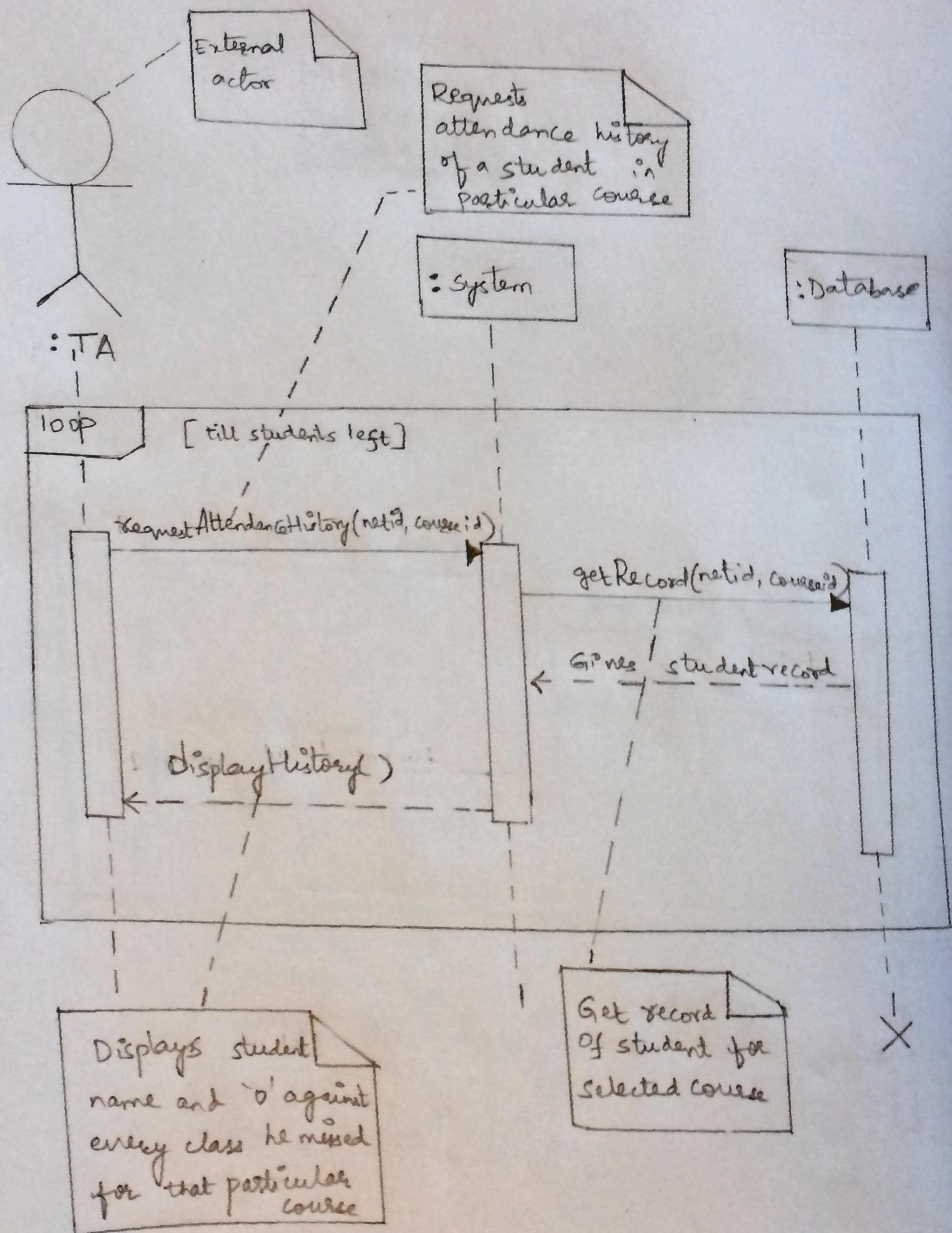
<< destroy >>
destroy()

database
instance
is destroyed

Attendance history of a particular class Scenario



Attendance history of a student for a course scenario



Attendance record for particular class and date

