DBMS Mini Project Synopsis

STUDENT DATABASE USING SMART ATTENDANCE SYSTEM

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For office use only:

Accepted : ☐

To be modified : ☐

Rejected : ☐

Signature of the Lab In-Charges

Problem Statement:

Automation of attendance system.

Software insight:

Front-End:

- Use of HTML, CSS and JavaScript as primary programming language.
- React.JS and express Web Frameworks will be implemented

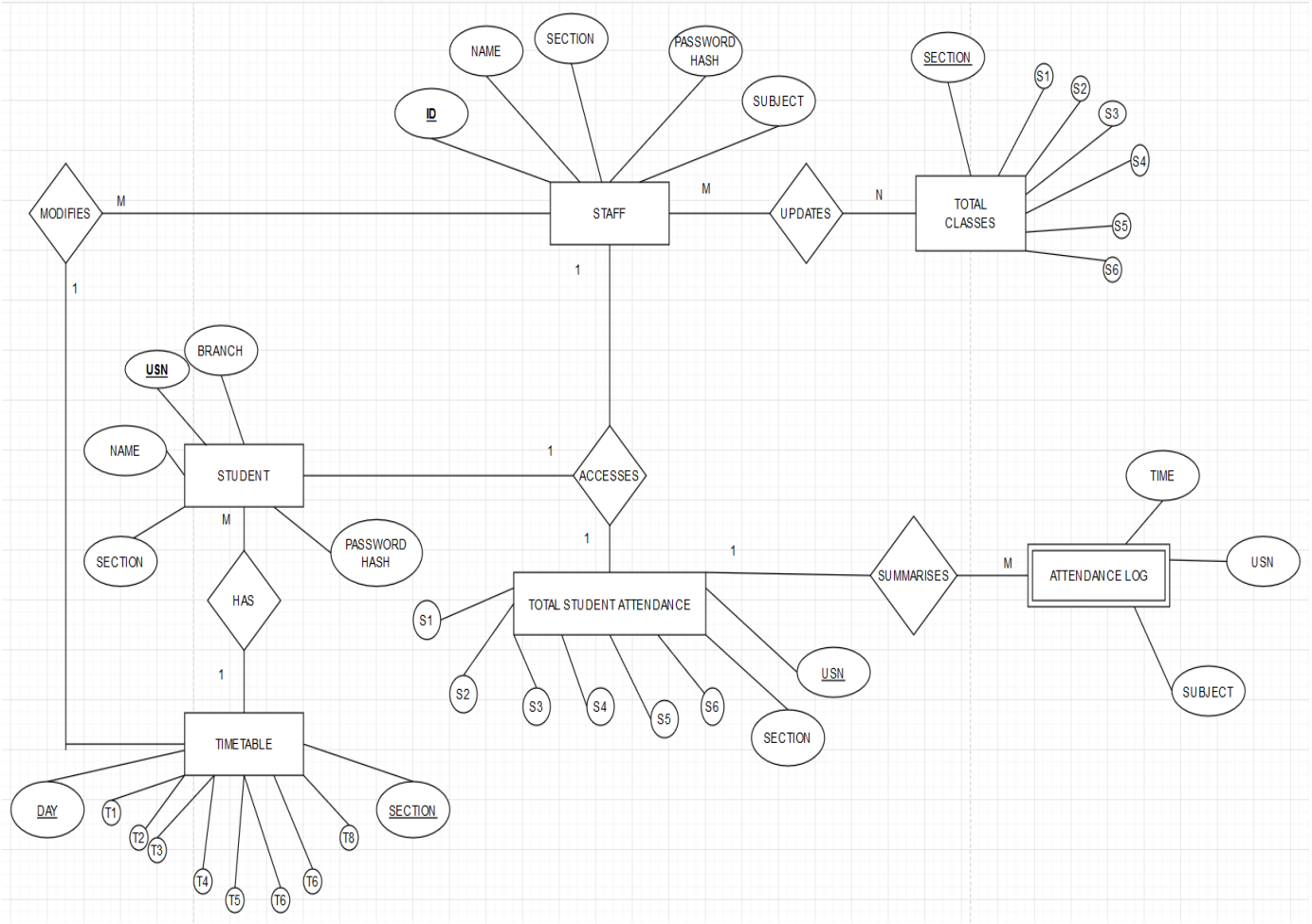
Back-end:

- MySQL will be used as database query language.
- Python will be used to implement the facial recognition unit with the addition of packages like openCV and Pymysql.
- RestAPI will be implemented for backend communication alongside Node.JS framework.

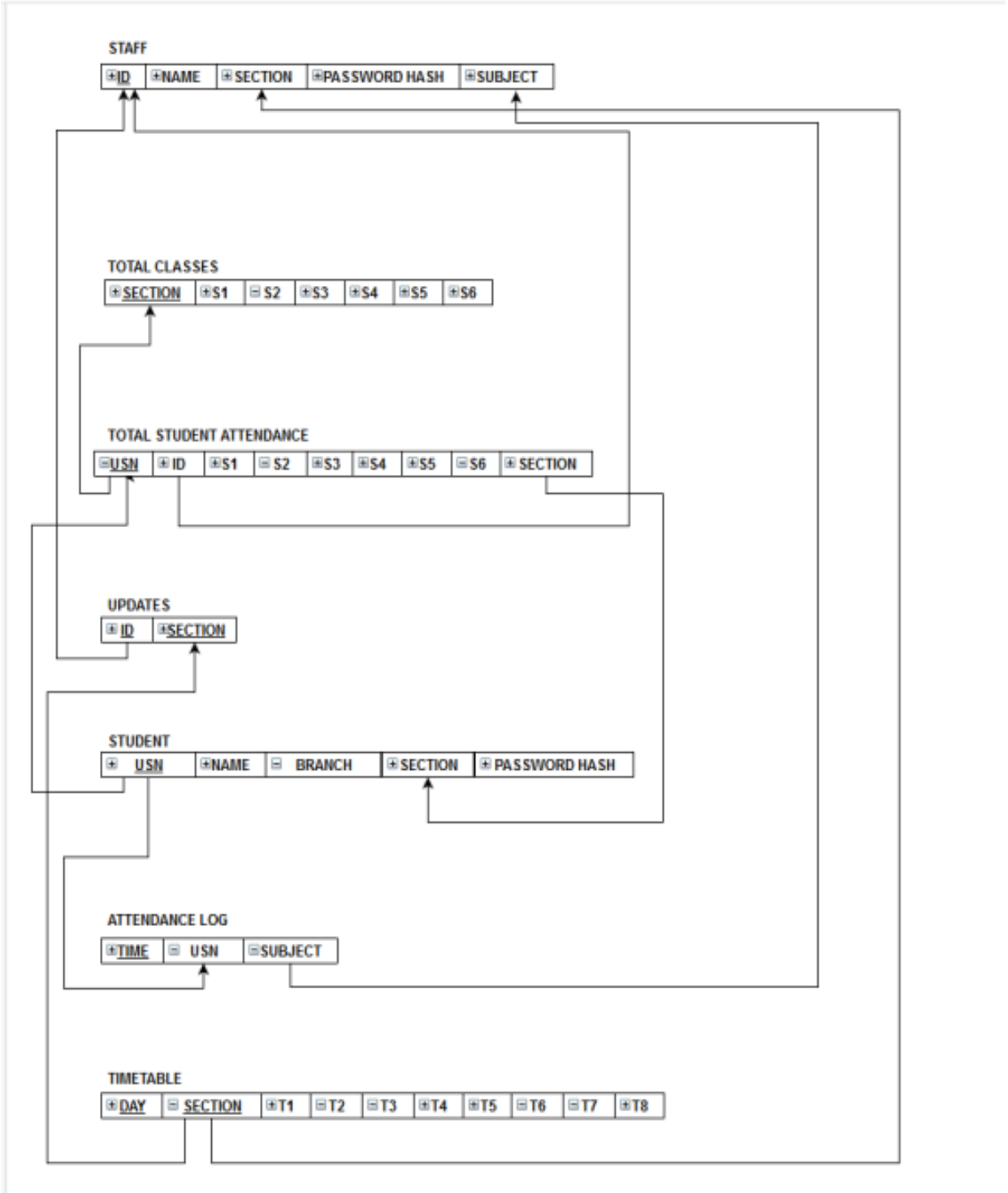
Version Control:

- Git

ER-Diagram:


NAME
SECTION
PASSWORD HASH
ID
SUBJECT
SECTION
S1
S2
S3
S4
S5
S6
MODIFIES
M
STAFF
M
UPDATES
N
TOTAL CLASSES
1
1
BRANCH
USN
NAME
STUDENT
1
ACCESSES
TIME
M
SECTION
PASSWORD HASH
HAS
1
1
SUMMARISES
M
ATTENDANCE LOG
USN
S1
TOTAL STUDENT ATTENDANCE
USN
SUBJECT
S2
S3
S4
S5
S6
SECTION
TIMETABLE
DAY
T1
T2
T3
T4
T5
T6
T6
T8
SECTION

Relational Diagram:



Modules:

- There are a total of 6 modules in this System.

- **LOGIN:** This module performs the basic authentication of the user.

- **SIGN-UP**: This module handles the sign up of the students or teachers.

- **Facial Recognition Unit:** This module will be connected directly to the attendance log which will track all entries of student detected in the camera with the current date and time. This logged data is summarized to get the student attendance for each day by comparing the current date and time with the assigned timetable. This data can be accessed by the staff.

- **STUDENT:** This module will have the ability to track his/her attendance by logging in with their id and password. The individual can also view the time TABLE or be notified of any changes in the timetable.

- **STAFF:** This module is able to modify the student timetable of the department and can access the attendance recorded by the system. The Staff will also be able to get the brief attendance information of each student sorted by their classes. This information ranges from, the total attendance of the student for each subject in the class to the day-to-day timestamps of the student detected by the facial recognition system. The staff also can update a total class counter which makes it feasible to account for off-book holidays or any other reason.

- **TIMETABLE:** This module can only be modified by the teachers and can be viewed by the students. The timetable module is tracked by the facial recognition system for tracking the changing period of each day, so as to mark attendance of the student by the appropriate subject.

Application:

- This system will be able to mark down multiple entries with almost zero human interaction and no extra hassle.
- The most common places to implement a facial recognition database system are used in places like hospitals, banks, concerts etc where it becomes so crowded that verifying each and every soul becomes impractical.
- By far the most interesting implementation of facial recognition in attendance systems is that of event attendance. The deployment of this system poses many benefits, especially for large gatherings (eg schools, colleges etc).