FINAL REPORT

for

Schola

Online Class Management

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Background and Motivation of the Project:

Due to the long-term lock-down and continuation of online classes, students face a number of problems which include, but are not limited to:

- Problems in finding the correct class links in time
- Not receiving notices on quizzes and classes
- Juggling multiple online platforms
- Different groups receiving unrelated notices
- Losing track of current lecture status and quiz syllabus
- Not finding shared lecture materials

Project Overview and Scope:

Schola is an online class management system developed to serve as a single platform for the students performing online classes. This single platform will provide the student with all the necessary information for online classes, manage this information and ensure that the students can easily organize their resources using an intuitive user interface.

Feature description:

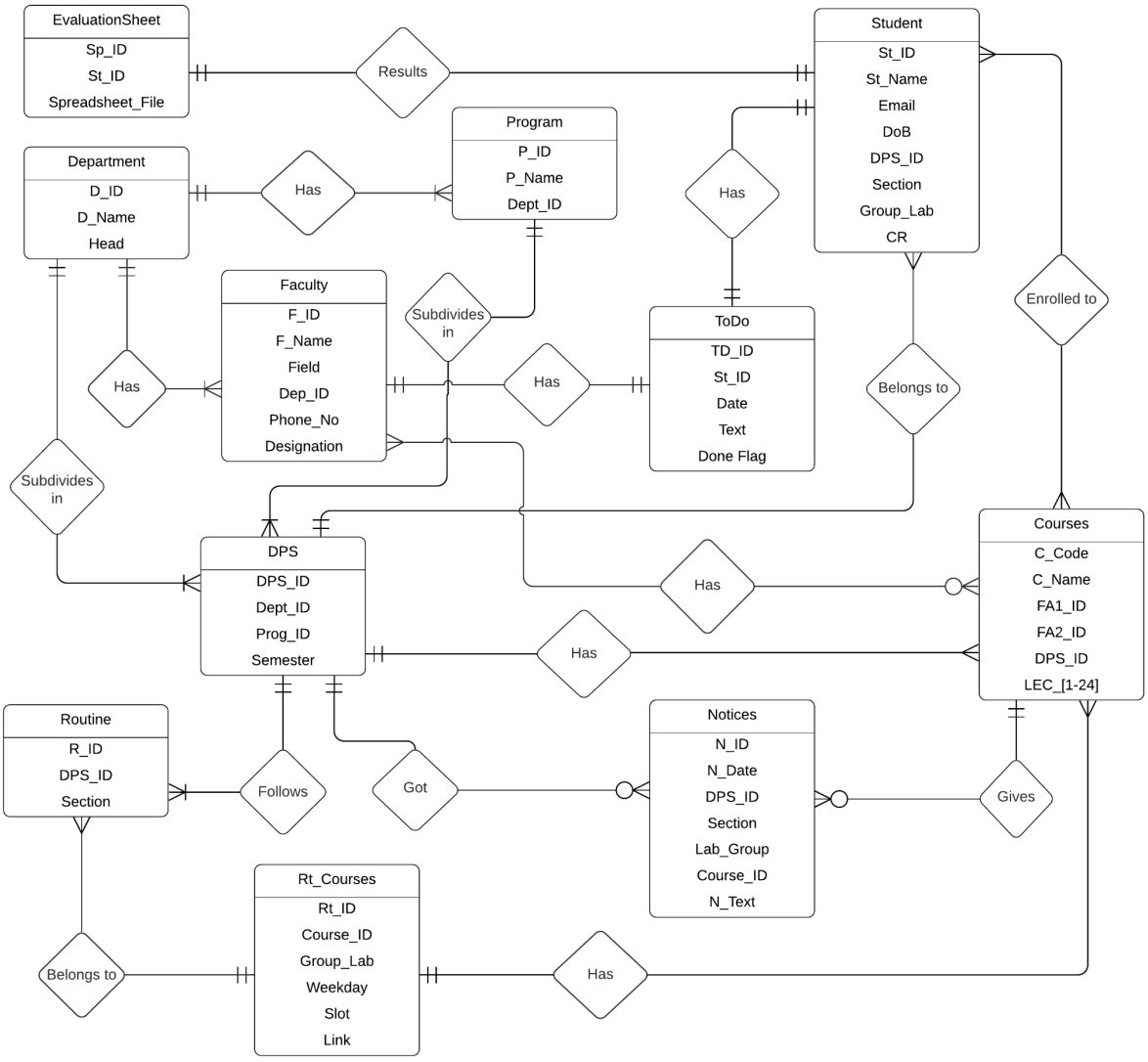
- **User Profile:** The profile contains basic information about the users. For the students, it includes the name, student ID, email, department, program, section, lab group, and ongoing semester. For the faculty members, it includes the name, email, department, and so on.
- **Authenticated User Login:** User login is done using Firebase which ensures secure login and password protection. Along with that users can recover their passwords using their emails and change passwords as well.
- **Notices:** The notice page will show the Date and Description of the notice. The notice will be shown to students belonging to that group only. This will depend on the student's semester, section, lab group, and elective. The CRs and teachers will be able to add notices for a particular course.
- **Personalized Routine:** The routine is personalized based on the student's semester, section, lab group, and elective. The routine table has time sections as the columns and days as the rows.
- **Lecture Evaluation Sheet:** The lecture evaluation sheet contains all the lectures of the courses taken by the student. The student can color the lecture by clicking on them. There are three colors: red, yellow and green. The CRs and teachers can add lectures, and lecture rows for their respective courses.
- **To-do List:** The to-do list is a personal list and functions just like a standard to-do list. The users can add and remove tasks with their tasks and deadlines. After adding a task, the users can check the task, or remove it.
- **Role-based User Access:** Our system will have three roles: student, CRs, and teachers. During login, the system will automatically detect the role based on the email and login as that particular role. The features and accessibility of each role vary.

Related diagram:

Timeline diagram:

Description	Timeline											
	Week-1	Week-2	Week-3	Week-4	Week-5	Week-6	Week-7	Week-8	Week-9	Week-10	Week-11	Week-12
Problem Analysis & Project Proposal												
Database Design												
Develop UI Elements												
Designing & Implementing Database												
Front End Prototype												
Back End Prototype												
Adding Features												
Testing and Debugging												
Inegration and Deployment												
Support and Maintainance												

ER diagram:



Difference from existing products:

There are very few products that are head to head with the Online Class Management System developed for IUT. Currently, no product serves as a single platform for the students to organize and manage their resources. A comparison between our system and similar existing products is given below:

Feature	Google Classroom	IUT LMS	**Schola**
Personalized Class Routine	No	No	Yes
Class Links	Google Meet only	Yes	Yes
Lecture Evaluation Sheet	No	No	Yes
To-do List	No	No	Yes
Role-based User Access	Partially (no CR role)	Partially (no CR role)	Yes
Announcements and Notices	Yes	Yes	Yes
Upcoming Event List	No	Yes	Yes

Implementation details:

Software Interfaces:

Front-end Software:

- Markup Language: HTML 5
- Styling: CSS 3
    - Styling Framework: Bootstrap (version 4.5.3)
- Scripting Language: Javascript (ECMAScript-6 2020 release)

Back-end Software:

- Scripting Language: PHP (version 7.4.9)
- Server: Apache HTTP Server (version 2.4.51)
- Database: MySQL (version 8.0.21)

Tools Used:

- Text Editor: Visual Studio Code (version 1.52)
- User Authentication: Firebase Authentication
- Backend Development Platform: WAMP Server
- Javascript Runtime Environment: Node.js (version 15.2.1)

Conclusion and future work:

While most of our objectives have been achieved by the current system, we would be planning to extend the ideas and integrate our system with other student management systems in IUT. Some of our future plans include but are not limited to:

1. **Faculty Routine:** The system will show the routines for the faculties by mapping the courses they take at a given time and date. This feature will be similar to the student\s routine option.
2. **Notifications and Reminders:** The system will have a feature that will notify the students 5-10 minutes before a class starts. There can also be reminders related to quizzes, exams, and so on.
3. **Administrative Role:** A new role will be created for administrators. The admins can add/remove users, change routines, change user information and perform basic administrative tasks.
4. **Integrating with LMS:** Our system can work well alongside IUT LMS or Learning Management System and provide the students a single platform to perform all educational tasks. The two systems can also be merged into a single system under a common user interface.
5. **Course Enrollment:** We are planning to integrate the course enrollment system with our current system to validate course inputs, and ensure students are assigned to the right electives.

References

i) Project Link: GitHub - Aplycaebous/Online-Class-Management-Schola: A webapp to manage online class resources

ii) Wamp Server Documentation: Wamp.NET

iii) Management System Standards: ISO - Management system standards