**Lawrence Technological University**

**Math and Computer Science Department**

**2032\_MCS7013\_Collaborative Research Proj1**

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**Student Management System**

Student management system project in Python Django focuses mainly on dealing with student-staff information. Also, the system displays selective overall data using graphical representations. In addition, the system allows for managing students’ attendance. Evidently, this project is divided into three categories: Student, Staff, and Admin Panel. In an overview of this web application, a student can simply view and update his/her profile. Initially, an admin is responsible for students’ registration. In fact, he/she has to provide personal and login details. However, a student can view their attendance record under each enrolled subject. Also, the students can apply for leave days and view all their leave histories. Besides, students can view notifications from the college administration as well as provide feedback to the administrator.

**Staff’s Panel, Attendance Management**

Staff/teacher’s panel allows users to access various features. But before, an admin is also responsible for staff registration. A staff member can manage results for each student. However, each result is only notable by the staff members. Meanwhile, the user can take and view the attendance of students. In fact, the teacher can only take attendance of the students enrolled in his/her concerned subjects. For this, the user has to select subjects and sessions. With it, the system displays the names of students with attendance dates. Additionally, the staff members can apply for leave days by providing details such as leave dates and messages. All the leave applications will be sent for approval by the admin. Besides, the user can view notifications from the administrator and send feedback.

**Admin Panel**

An administrator can manage courses, subjects, sessions, staff, students, and more. Here, each and every section has its own respective details such as name and other important details. The very first step of the management of this system is to set up courses, subjects, and sessions. There are minor fields for each such as name, description, and dates. This whole section plays an important role in the management of the staff, students, and attendance records. As each of these records falls under different sections. In Addition, the system allows managing staff records. The staff member refers to teachers in the context. For this, the user has to provide various details such as name, email address, gender, password, image, and course.

**Available Features**

1. Staff Panel
2. Student Panel
3. Admin Panel
4. Manage Course, Subject, Session
5. Student Management
6. Staff/Teacher Management
7. Student Attendance Management
8. Update User Profile
9. Exam Result Management
10. Send Notifications
11. View Notifications
12. Present and Absent Percentage
13. Student Leave Management
14. Staff Leave Management
15. Send Feedback

**Deployment**

* created EC2 and RDS.
* Created user and assigned all the required permission
* uploaded all the code to aws codecommit with that user’s credentials
* Installed all the dependencies in ec2 and git cloned the code into machine and started the server
* modified security group to all the port
* Created api gateway and integrated HTTP URI to the instance public ip address

**Technology :**

**Backend Technologies:**

Python:

Django: Django can be used for a more robust and scalable backend, providing built-in features for authentication, database operations, and an admin interface.

APIs: RESTful APIs can be developed using Django REST Framework (DRF) to facilitate communication between the client-side and server-side components.

MySQL: A relational database management system used to store and manage data related to flights, bookings, passengers, and other essential information.

SQLAlchemy: An ORM (Object-Relational Mapping) library for Python that facilitates database operations and interactions in a more Pythonic way.

**Frontend Technologies:**

HTML5: The standard markup language for creating web pages, providing the structure and content of the airline reservation system's web interface.

CSS3: Used for styling and designing the web pages to ensure a visually appealing and responsive user interface.

Bootstrap: A front-end framework that helps in creating responsive and mobile-first web pages quickly, with pre-designed components and utilities.