

Project Documentation: Your Future - Faculty Registration Portal

1. Project Overview

This project, named "**Your Future**", is a web-based faculty registration portal designed to facilitate students in selecting subjects and faculty for their current semester and calculating their CGPA based on marks.

Key objectives: - Allow students to view subjects relevant to their current semester. - Enable students to select subjects and choose faculty based on available seats and faculty reviews. - Implement seat allocation with validation to prevent overbooking and duplicate registrations. - Provide a CGPA calculation module based on marks entered by the student.

2. Technologies Used

Layer	Technology / Tool
Frontend	Lightning Web Components (LWC), HTML, CSS, JavaScript
Backend	Apex (Salesforce)
Database	Salesforce Objects: User, Contact, Subject__c, Faculty__c, Seat__c
Platform	Salesforce Developer Edition
Additional Tools	Debug Logs, Static Resources for images/icons

3. Functional Modules

3.1 User Authentication

- Students can log in using their Salesforce credentials.
- Only students associated with a semester can access relevant subjects.

3.2 Subject Selection

- Students can view a list of subjects filtered by their current semester.
- Subjects are fetched dynamically based on the semester field in the student's user record.
- Students can select a subject to choose a faculty.

3.3 Faculty Selection & Review

- After selecting a subject, students can see a list of faculties teaching that subject.
- Each faculty record displays:

- Faculty name
- Faculty review/rating
- Number of seats currently allocated

3.4 Seat Registration

- Students can register under their preferred faculty for each subject.
- Seat Allocation Validations:
 - If all seats are filled under a faculty, the student cannot register.
 - If a student has already taken a seat for a subject, they cannot register again for the same subject.
- Once registered, the number of seats allocated under that faculty is updated dynamically.

3.5 CGPA Calculator

- Students can enter marks for each subject.
- The system calculates the Cumulative Grade Point Average (CGPA) based on:
 - Marks entered for each subject
 - Predefined grade point mapping (e.g., A = 10, B = 8, etc.)
- CGPA is displayed in real-time as marks are entered.

4. System Design

4.1 Salesforce Objects

Object	Purpose
User	Stores student information including semester.
Subject__c	Stores subject details including semester offered.
Faculty__c	Stores faculty details including review/rating.
Seat__c	Stores seat allocation under a faculty for a subject.

4.2 Component Flow

1. Login Component → Authenticates student.
2. Subject List Component → Displays subjects based on semester.
3. Faculty Selection Component → Displays faculty for selected subject with reviews & seat availability.
4. Seat Registration Component → Allows students to register seats with validation checks.
5. CGPA Calculator Component → Accepts marks input and calculates CGPA dynamically.

4.3 Seat Registration Validation Logic

- **Check Seats Filled:**

```
if(facultySeats >= facultyTotalSeats) {
    throw new CustomException('All seats under this faculty are
```

```
filled.');
```

- **Check Duplicate Registration:**

```
if(existingSeatForStudent(subjectId, studentId)) {  
    throw new CustomException('You have already registered for this  
subject.');
```

5. User Interface

- Homepage: Displays student name, current semester, and available subjects.
- Subject Details Page: Lists all faculties with seat availability and reviews.
- Seat Registration Page: Allows selection of faculty and confirms registration.
- CGPA Calculator Page: Students can input marks for subjects and view CGPA.

6. Key Features

1. Dynamic Semester Filtering – Subjects are automatically filtered based on the logged-in student's semester.
2. Faculty Selection with Reviews – Students can choose faculty based on ratings and availability.
3. Seat Allocation with Validation – Ensures no overbooking or duplicate registration.
4. CGPA Calculation – Real-time calculation based on marks entered.
5. Responsive Design – User-friendly UI built with LWC and CSS.

7. Limitations

- Works only for students already created in Salesforce (no public registration).
- Seat allocation depends on predefined total seats per faculty.
- CGPA calculation assumes fixed grade point mapping.

8. Future Enhancements

- Allow faculty to update seat availability dynamically.
 - Add analytics dashboard for students to see registered subjects and CGPA history.
 - Enable public self-registration for new students.
 - Add email notifications for seat registration confirmation.
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9. Conclusion

The **"Your Future"** portal provides a complete student-centric faculty registration system integrated with Salesforce. It allows: - Efficient subject and faculty selection - Real-time seat management with validations - CGPA calculation for academic performance tracking

It ensures students have a smooth experience while maintaining data integrity and seat allocation rules.