Phase 6: User Interface Development - EduConnect Pro

Overview

This phase focused on creating a modern, responsive user interface for the college management system using Lightning App Builder and Lightning Web Components (LWC). The objective was to provide an intuitive experience for students, faculty, and administrators to manage academic operations, placements, and campus activities.

Lightning App Builder

Custom Application Creation

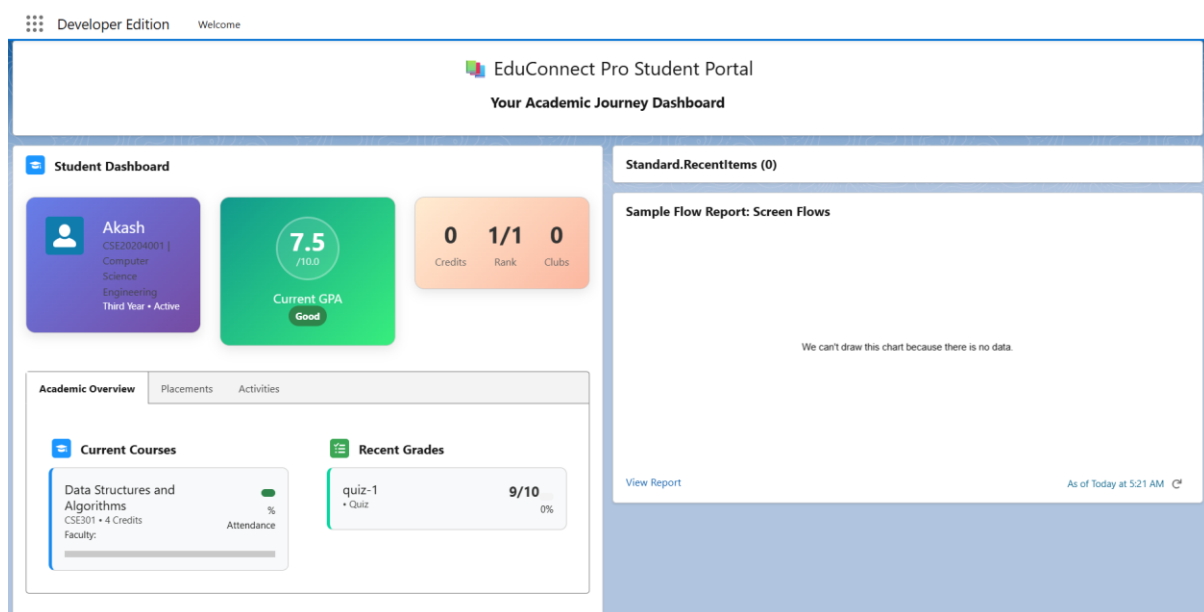Built a custom **Edu Connect Pro App** with comprehensive navigation including:

- Student Dashboard
- Courses & Enrollments
- Grades & Academic Records
- Job Postings & Applications
- Clubs & Events
- Reports & Analytics

Home Page Layout

Created a dynamic home page featuring:

- **Rich Text Components**: Welcome message and announcements

- **Recent Records**: Quick access to recently viewed students, courses, and enrollments

- **List Views**: Active job postings, upcoming events, pending applications

- **Dashboard Widgets**: Key metrics (enrollment stats, GPA averages, placement rates)

- **Quick Links**: Direct navigation to frequently used pages

Utility Bar Configuration

Implemented utility bar with quick-access tools:

- **Notes**: Quick note-taking for faculty and staff

- **Recent Items**: Access to recently viewed records

- **History**: Navigation history

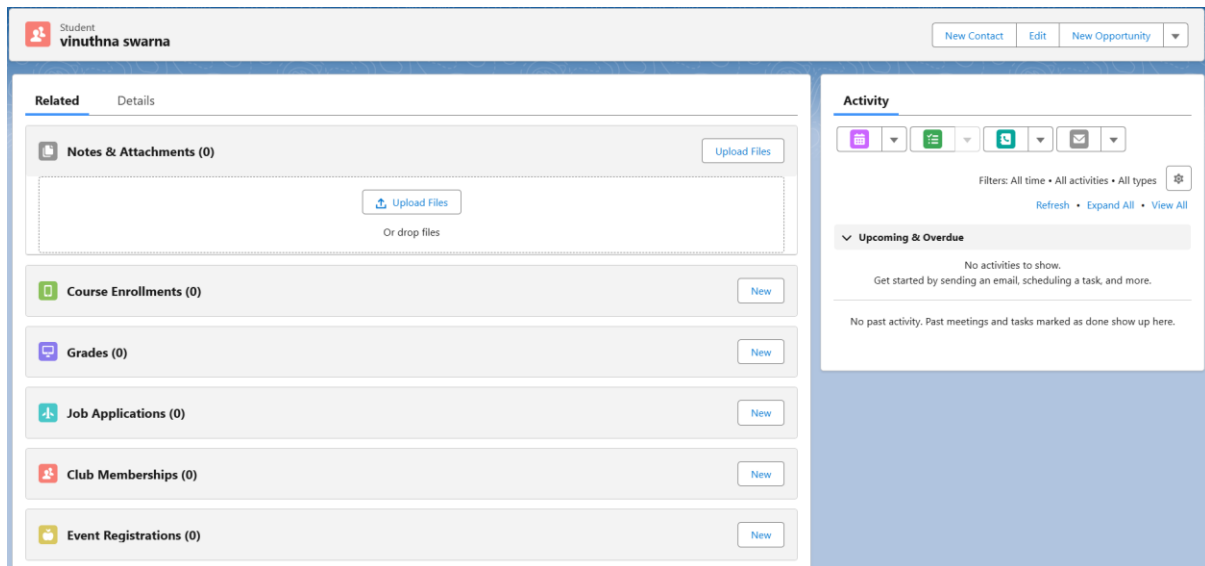- **To-Do List**: Task management for admission officers and counsellors

Record Pages

Student Dashboard Record Page

Created a comprehensive lightning record page for **Student__c** object:
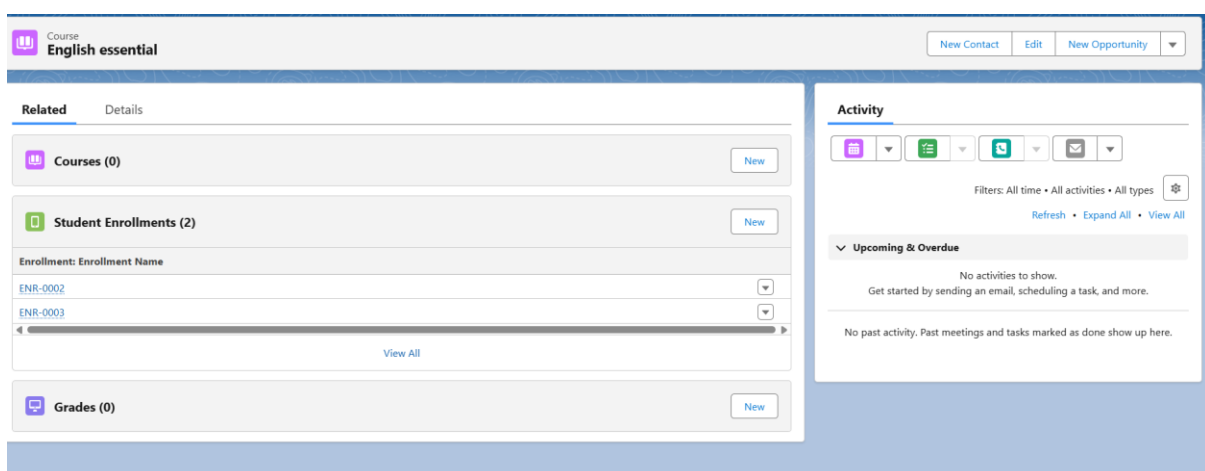
Components Included:

- **Highlights Panel**: Key student information (Student ID, Department, GPA, Academic Status)

- **Details Section**: Complete student profile with contact information

- **Related Lists**:

    o Current Course Enrollments

    o Recent Grades & Assessments

    o Club Memberships

    o Job Applications

- **Activity Timeline**: Track interactions and updates

- **Custom Components**:

    o Academic Performance Chart (GPA trend visualization)

    o Attendance Summary

    o Recommended Jobs Widget

Course Record Page

Custom record page for **Course__c** object featuring:

- Course details (code, credits, department, faculty)

- Enrolled students list

- Grade distribution chart

- Attendance tracking

- Course materials and resources

Lightning Web Components (LWC)

1. studentDashboard Component

Purpose: Comprehensive student information hub

Features:

- Student profile with avatar
- Current GPA display with visual indicator
- Academic statistics (credits, rank, clubs)
- Tabbed interface:
    - Academic Overview (current courses, recent grades)
    - Placements (recommended jobs with match percentage)
    - Activities (clubs, upcoming events)

Technologies Used:

- HTML: Responsive layout with SLDS (Salesforce Lightning Design System)
- JavaScript: Data fetching, processing, and event handling
- CSS: Custom styling with gradients and animations
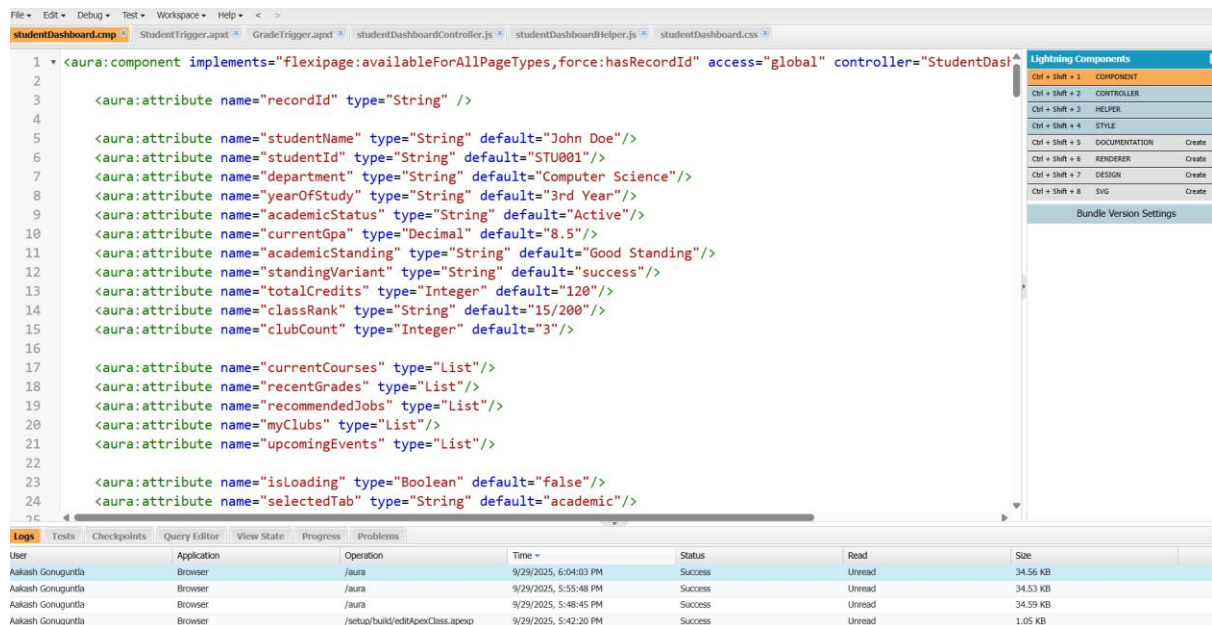- Apex: Backend controller for data queries

Key JavaScript Methods:

loadStudentData(): Fetches all student information
processCoursesData(): Formats enrollment data
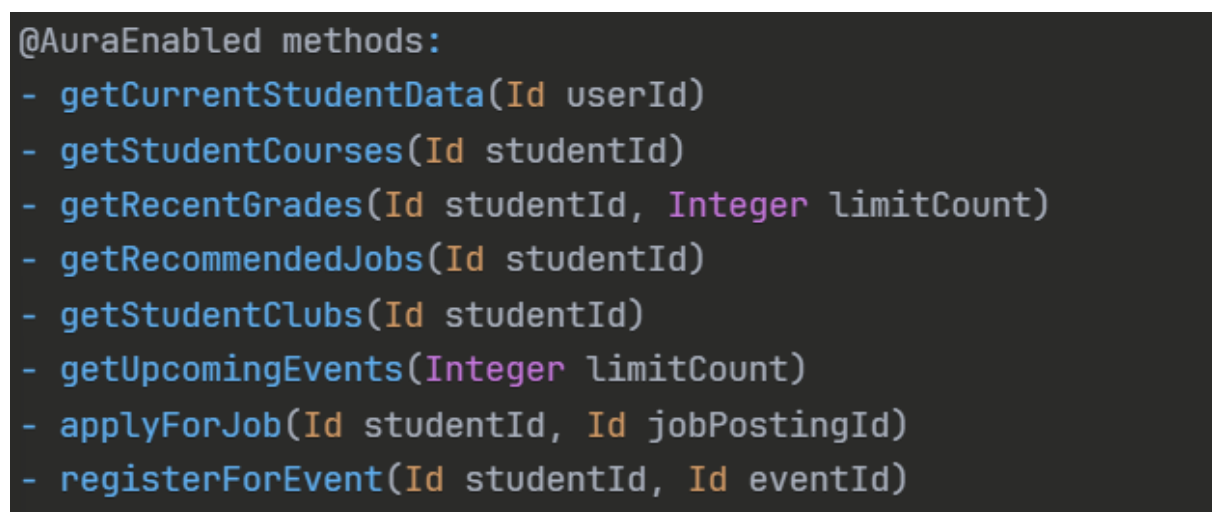handleApplyJob(): Manages job applications
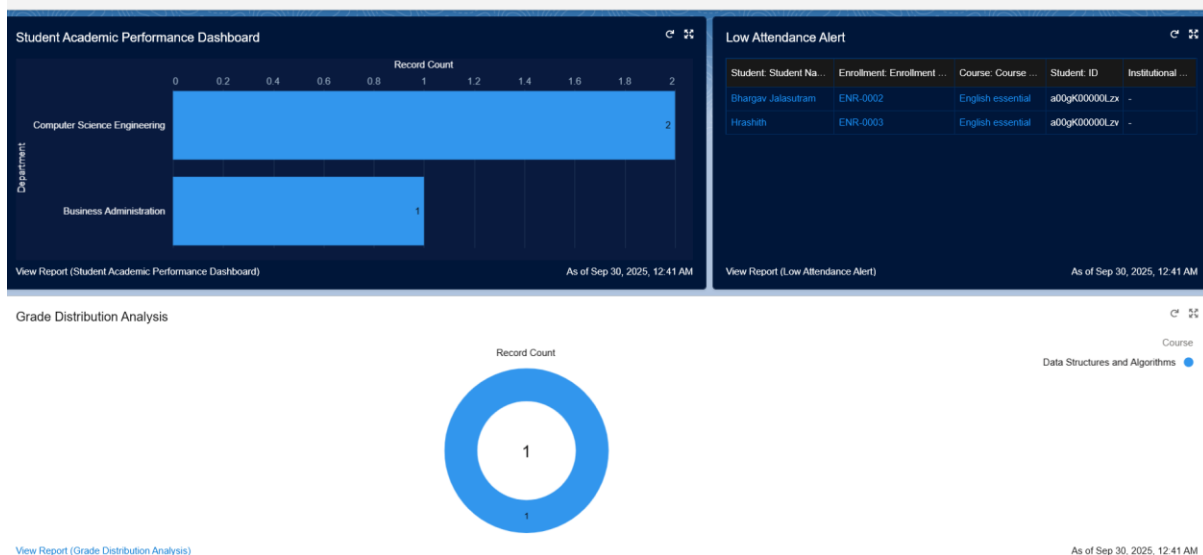handleEventRegistration(): Registers for campus events

Apex with LWC Integration

Controller Classes Created:

1. StudentDashboardController.cls

```
@AuraEnabled methods:
- getCurrentStudentData(Id userId)
- getStudentCourses(Id studentId)
- getRecentGrades(Id studentId, Integer limitCount)
- getRecommendedJobs(Id studentId)
- getStudentClubs(Id studentId)
- getUpcomingEvents(Integer limitCount)
- applyForJob(Id studentId, Id jobPostingId)
- registerForEvent(Id studentId, Id eventId)
```

Security Considerations

Field-Level Security

- Respected in all LWC queries via with USER_MODE
- Sensitive fields (GPA, personal info) protected based on profile

Object-Level Security

- CRUD operations validated before data manipulation
- Record access controlled via sharing rules

Input Validation

- Client-side validation for all form inputs
- Server-side validation in Apex controllers
- XSS prevention through proper data binding

Key Benefits:

- Centralized student information hub

- Real-time academic performance tracking

- Automated job matching and recommendations

- Seamless event and club management

- Mobile-responsive interface for on-the-go access

Phase 6 successfully delivered a modern, user-friendly interface for Edu Connect Pro. The combination of Lightning App Builder customization and custom LWC development created an intuitive platform that enhances the student experience, streamlines administrative workflows, and provides actionable insights through visual dashboards and reports.

The modular component architecture ensures maintainability and scalability for future enhancements, while adherence to Salesforce best practices guarantees security, performance, and reliability.