

Project: EduLink Student & Course Management System

Phase 7: Integration & External Access

Goal: The goal of this phase is to connect the EduLink system with external services to enhance functionality, streamline data synchronization, and create a seamless, unified experience. By leveraging Salesforce's integration capabilities, we will enable real-time data exchange, automate cross-platform processes, and securely manage access between systems.

1. Named Credentials

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** To securely store and manage authentication details (like usernames, passwords, and API keys) for external systems without hardcoding credentials in Apex code. This is a best practice that keeps sensitive information out of the codebase.
 - **Planned Implementation:** A Named Credential will be created to manage the endpoint URL and authentication for an external student verification service.
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2. External Services

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** To connect to external APIs using a point-and-click tool, allowing for the creation of invocable actions within Salesforce without writing custom code.
 - **Planned Implementation:** If a student verification service provides a compatible API schema, External Services will be used to generate a "Verify Student" action. This action can then be incorporated into a Flow, enabling admissions staff to trigger verifications declaratively.
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3. Web Services (REST/SOAP) & Callouts

- **Status:** ⌚ **Planned for Future Implementation**
- **Purpose:** To enable communication with external systems over the internet. An Apex

Callout is the action of Salesforce sending a request to an external web service to send or retrieve data.

- **Planned Implementation:** An Apex Callout using the modern REST format will be developed. This callout will send a student's ID to an external service and process the verification response.
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4. Platform Events

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** To broadcast real-time event messages from Salesforce that other internal or external systems can subscribe (listen) to. This creates a decoupled architecture for event-driven processes.
 - **Planned Implementation:** When an Enrollment record's status is updated to "Completed," the system will publish a `Student_Completed_Course__e` Platform Event. An external certificate-printing service could subscribe to this event to automatically print and issue a certificate, streamlining the student journey.
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5. Change Data Capture

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** A feature that publishes notifications to other systems whenever data is created or changed in Salesforce, keeping external systems synchronized.
 - **Planned Implementation:** Change Data Capture will be enabled on the Contact object. If an admissions officer updates a student's address, a notification event will be sent to an external student portal to ensure data consistency across both systems.
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6. Salesforce Connect

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** A tool used to view, search, and modify data from an external database in real-time within the Salesforce UI by creating "External Objects".
 - **Planned Implementation:** To contribute to a unified, 360-degree student view, Salesforce Connect will be used to create an External Object. This object will display a list of a student's checked-out library books from the university's separate library database directly on their Contact record.
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7. API Limits

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** To understand and monitor the number of integration calls the Salesforce org can make in a 24-hour period, which is essential for ensuring system stability and performance.
 - **Planned Implementation:** As an ongoing administrative task, API usage will be monitored via **Setup > Company Information** to ensure all integrations are running efficiently and within established limits.
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8. OAuth & Authentication

- **Status:** ⌚ **Planned for Future Implementation**
 - **Purpose:** To implement a secure protocol for systems to grant access to each other without sharing passwords, such as "Log in with Google" or single sign-on (SSO).
 - **Planned Implementation:** An OAuth 2.0 flow will be configured to allow students to log into a separate Student Portal using their main university credentials, providing a seamless and secure user experience.
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9. Remote Site Settings

- **Status:** ⌚ **Planned for Future Implementation**
- **Purpose:** A foundational security setting required for Apex Callouts, where the web address (URL) of any external system that code needs to communicate with must be registered and approved.
- **Planned Implementation:** Before any Apex Callouts are developed, an administrator will add the endpoint URL of the external student verification service to the Remote Site Settings.