

# CONNECT - Student Success Platform

## Phase 1: Problem Understanding & Industry Analysis

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## PROJECT OVERVIEW

**Project Title:** CONNECT – Comprehensive Organic Network for Nurturing Educational Community & Transformation

**Industry:** Higher Education Technology

**Project Type:** B2B Salesforce CRM Implementation for Universities

**Target Users:** Students, Academic Advisors, Student Support Staff, University Administrators, Faculty Members

## PROBLEM STATEMENT

A mid-sized university with over **15,000 students** experiences alarming dropout rates and diminished student success due to fragmented support systems. Research shows that **39% of first-time, full-time students** fail to return for their second year, costing the institution over **\$9 billion annually** in wasted tuition, financial aid, and potential revenue.

Despite significant investments in academic advising, tutoring, and student engagement programs, these initiatives remain **disconnected and operate independently**:

- **Academic performance monitoring** systems capture grades and attendance but lack insight into students' social networks and sense of belonging
- **Student risk identification** is primarily reactive—alerts trigger only after grades drop or students miss critical deadlines—resulting in delayed interventions
- **Peer support and social integration** efforts operate independently of academic support services, missing the proven **80.6% positive correlation** between strong peer relationships and academic achievement
- **Intervention strategies** rely on manual case management workflows, leading to inconsistent follow-up and resource misallocation
- **Data fragmentation** across LMS, SIS, and various student services prevents a holistic view of each student's risk factors
- **Social isolation detection** remains manual and inconsistent, leaving many at-risk students without timely outreach

## The Core Challenge

No existing technology platform **systematically integrates** academic performance analytics with social network data to enable proactive, data-driven interventions. The university lacks the ability to automatically:

- Identify at-risk students by combining academic, behavioral, and social engagement indicators
- Facilitate academically beneficial peer relationships using predictive matching algorithms

- Coordinate interventions through automated workflows
- Measure intervention effectiveness in real time
- Provide comprehensive dashboards for tracking retention metrics and ROI

## 1. REQUIREMENT GATHERING

### 1.1 Functional Requirements

#### Core System Capabilities:

- **Multi-Source Data Integration:** Real-time synchronization with Learning Management Systems, Student Information Systems, campus engagement platforms, and academic support services
- **Predictive Risk Analytics:** Advanced algorithms combining academic performance trends, social engagement indicators, and behavioral patterns to generate risk scores
- **Automated Peer Matching:** Intelligent compatibility assessment using academic strengths/weaknesses, learning styles, schedules, and social preferences
- **Proactive Intervention Management:** Workflow-driven alert systems with automated stakeholder notification, resource coordination, and progress tracking
- **Social Network Analysis:** Systematic tracking of peer interactions, collaboration patterns, and community engagement to identify isolation risks
- **Comprehensive Reporting Framework:** Real-time dashboards for advisors, administrators, and students with predictive insights and outcome tracking

### 1.2 Non-Functional Requirements

#### Performance Standards:

- **Scalability:** Support 50,000+ concurrent student records with sub-3-second response times across all system functions
- **Security:** Complete FERPA compliance with role-based access controls, end-to-end encryption, and comprehensive audit trails
- **Availability:** 99.5% system uptime with disaster recovery capabilities and automated backup procedures
- **Integration:** Seamless API connectivity with 15+ institutional systems without performance degradation
- **Usability:** Intuitive interfaces optimized for diverse user personas with mobile responsiveness and accessibility compliance

### 1.3 Success Metrics

- **Retention Improvement:** Minimum 15% increase in first-to-second year student persistence rates
- **Risk Prediction Accuracy:** 85%+ precision in identifying students requiring intervention support
- **User Adoption:** 90%+ engagement across student and advisor populations within six months
- **Intervention Effectiveness:** 70%+ success rate in improving outcomes for flagged at-risk students
- **System ROI:** Positive return on investment within 18 months through retention cost savings

## 2. STAKEHOLDER ANALYSIS

## 2.1 Primary Stakeholders

### Students (15,000+ Population)

- **Needs:** Early academic support identification, meaningful peer connections, transparent progress tracking, personalized intervention resources
- **Pain Points:** Social isolation affecting academic performance (24% of students), fragmented support systems, reactive crisis management
- **System Role:** Self-service progress monitoring, voluntary peer matching participation, intervention resource access

### Academic Advisors & Support Staff (75+ Personnel)

- **Needs:** Predictive risk identification, comprehensive student insights, efficient case management tools, measurable intervention outcomes
- **Pain Points:** Overwhelming caseloads (1:200+ ratios), reactive support models, fragmented student information across multiple systems
- **System Role:** Alert management, intervention coordination, progress monitoring, outcome documentation

### University Administrators (25+ Leadership)

- **Needs:** Institutional retention metrics, resource allocation optimization, strategic planning insights, compliance assurance
- **Pain Points:** Limited visibility into retention factors, budget pressure for student success initiatives, difficulty demonstrating intervention ROI
- **System Role:** Executive dashboards, strategic reporting, budget planning, policy development

## 2.2 Secondary Stakeholders

- **Faculty Members:** Course performance insights, collaboration opportunity identification, academic support coordination
- **IT Department:** System integration oversight, security compliance management, technical support provision
- **Parents/Guardians:** Student progress visibility with FERPA-compliant access controls and communication preferences

## 3. BUSINESS PROCESS MAPPING

### 3.1 Core Process Workflows

#### Process 1: Automated Risk Detection & Early Warning

1. **Daily Data Synthesis:** Aggregate academic performance, social engagement, and behavioral indicators from integrated systems
2. **Predictive Risk Calculation:** Apply machine learning algorithms to generate risk scores with confidence intervals and trend analysis
3. **Threshold-Based Alert Generation:** Automatically trigger prioritized notifications when students cross predefined risk thresholds
4. **Stakeholder Routing:** Deliver alerts to appropriate advisors with student context, intervention recommendations, and resource availability
5. **Intervention Tracking:** Monitor response times, strategy implementation, and outcome effectiveness for continuous improvement

#### Process 2: Systematic Peer Network Facilitation

1. **Compatibility Analysis:** Assess academic complementarity, learning preferences, schedule alignment, and social compatibility factors
2. **Matching Algorithm Execution:** Identify optimal peer partnerships using historical success patterns and current student needs
3. **Structured Introduction Process:** Facilitate initial contact through personalized messaging with shared goals and conversation starters
4. **Collaboration Support:** Provide resources, meeting spaces, and progress tracking tools for sustained academic partnerships
5. **Effectiveness Measurement:** Monitor group dynamics, academic outcome correlations, and satisfaction levels for optimization

#### **Process 3: Comprehensive Intervention Management**

1. **Strategy Selection:** Match student risk profiles with evidence-based intervention approaches using historical effectiveness data
2. **Resource Coordination:** Automatically schedule academic support services, counseling appointments, and specialized assistance
3. **Multi-Channel Communication:** Coordinate outreach across advisors, faculty, support services, and family members as appropriate
4. **Progress Monitoring:** Track intervention adherence, academic improvement, and social integration development over time
5. **Outcome Assessment:** Measure intervention effectiveness and adjust strategies based on student response and goal achievement

## **4. INDUSTRY-SPECIFIC USE CASE ANALYSIS**

### **4.1 Primary Use Cases**

#### **UC-01: Proactive At-Risk Student Identification**

- **Trigger:** Daily automated analysis of integrated student data
- **Process:** System analyzes academic trends, social engagement patterns, and behavioral indicators to calculate comprehensive risk scores, automatically notifying advisors when intervention thresholds are exceeded
- **Outcome:** Early identification enables proactive support, potentially preventing 40-60% of student departures that would otherwise occur

#### **UC-02: Academic Peer Partnership Formation**

- **Trigger:** Risk alert identification or student request for study support
- **Process:** Compatibility algorithms identify students with complementary academic strengths and compatible learning styles, facilitating structured introductions and ongoing collaboration support
- **Outcome:** Research-backed peer relationships improve academic performance and reduce isolation-related dropout risk

#### **UC-03: Social Integration Monitoring & Intervention**

- **Trigger:** Weekly social engagement analysis
- **Process:** System tracks event participation, peer interactions, and campus facility usage, flags isolation risks, and recommends community activities
- **Outcome:** Reduces social isolation by 30% through targeted community-building efforts

#### **UC-04: Predictive Intervention Timing**

- **Trigger:** Mid-semester performance reviews and trend deviations
- **Process:** Machine-learning models forecast academic outcomes and recommend optimal intervention timing and resource allocation
- **Outcome:** Improves intervention effectiveness by 25% and optimizes resource utilization

#### **UC-05: Holistic Success Dashboard Reporting**

- **Trigger:** Real-time data aggregation across LMS, SIS, and engagement platforms
- **Process:** Generates dashboards for students, advisors, and administrators with retention metrics, risk trends, and ROI projections
- **Outcome:** Drives data-informed decision-making, increasing advisor efficiency by 20%

## **4.2 Industry Compliance Requirements**

- **FERPA Compliance:** Granular consent management, role-based data access, and comprehensive audit trails for all student information handling
- **Accessibility Standards:** ADA-compliant interface design supporting diverse learning needs and assistive technologies
- **Multi-Campus Scalability:** Configurable business rules accommodating different academic calendar systems and institutional policies
- **Privacy Protection:** Advanced encryption and data isolation ensuring student information security across all system interactions

## **5. APPEXCHANGE EXPLORATION**

### **5.1 Current Market Landscape**

#### **Salesforce Education Cloud (Foundation Platform)**

- **Strengths:** Native Salesforce integration, established educational data model, comprehensive security framework
- **Limitations:** Basic predictive analytics, no systematic peer network facilitation, limited social integration focus
- **Integration Strategy:** Leverage as foundation while building advanced social-academic bridge functionality

### **5.2 Competitive Analysis**

#### **Market Leaders Assessment:**

- **EAB Navigate:** Strong in early alerts and case management but lacks systematic peer relationship facilitation
- **Starfish Solutions:** Comprehensive faculty engagement tools but missing predictive social network analysis
- **CONNECT Differentiation:** Unique focus on research-proven academic-social integration gap with automated peer facilitation

### **5.3 AppExchange Integration Opportunities**

- **Einstein Analytics:** Enhanced predictive modeling capabilities for risk assessment and intervention optimization
- **Community Cloud:** Student-facing collaboration portals with peer networking and resource access functionality
- **Survey Force:** Student satisfaction measurement and intervention effectiveness tracking capabilities
- **Event Management Solutions:** Campus engagement tracking for social integration analysis and correlation

## 6. MARKET OPPORTUNITY & FINANCIAL ANALYSIS

### 6.1 Market Assessment

**Target Market:** 5,300+ degree-granting institutions serving 19.3 million students with persistent retention challenges

**Economic Impact:** Current 39% dropout rate represents \$9 billion annual loss, creating substantial market demand for effective solutions

**Revenue Opportunity:** \$29.4 billion addressable market in higher education technology with specific focus on student success platforms

### 6.2 Financial Projections

**Institutional Investment:** \$35,000 average annual cost including licensing, implementation, and ongoing support

**Quantifiable Benefits:** \$180,000 annual savings through improved retention (200 students × \$900 average cost)

**ROI Calculation:** 414% annual return on investment with break-even achieved within 2.3 months

### 6.3 Implementation Feasibility

**Technical Complexity:** Medium-level development leveraging proven Salesforce platform capabilities and established integration patterns

**Market Validation:** Strong demand evidenced by 78% of institutions expressing interest in improved student success technology solutions

**Success Probability:** 75% confidence in achieving target outcomes based on market research and competitive differentiation analysis

## EXPECTED OUTCOMES

1. **Retention Improvement of 15–20%**
2. **Annual Cost Savings of \$180,000+ per Cohort**
3. **Risk Prediction Accuracy of ≥85%**
4. **User Adoption Rate of ≥90% within Six Months**
5. **Intervention Effectiveness of ≥70% in Improving At-Risk Student Outcomes**

## CONCLUSION & NEXT STEPS

Phase 1 analysis confirms **CONNECT** addresses a critical gap in higher education technology with substantial market opportunity and measurable impact potential. The comprehensive research foundation validates both technical feasibility and business viability.

### Key Validation Points:

- **Research-Backed Solution:** 80.6% peer support correlation with academic success provides strong foundation
- **Market Need:** Clear evidence of \$29.4 billion opportunity with unmet systematic integration requirements
- **Technical Feasibility:** Proven Salesforce platform capabilities enable comprehensive solution development
- **Financial Viability:** 414% ROI demonstrates compelling business case for institutional adoption

**Phase 2 Preparation:** Established requirements, stakeholder understanding, and technical architecture provide solid foundation for Salesforce org setup and configuration with clear development objectives and success criteria.

# CONNECT STUDENT SUCCESS PLATFORM PHASE 2 DOCUMENTATION

**Project:** CONNECT Student Success Platform

**Phase:** Phase 2 Org Setup & Configuration

## PROJECT OVERVIEW

The CONNECT Student Success Platform is a comprehensive Salesforce CRM implementation designed to manage university student lifecycle, academic advisory services, and institutional operations. This Phase 2 documentation covers the foundational organizational setup and configuration components that establish the security, user management, and operational framework for the platform.

The platform serves as a centralized system for managing student records, academic advisor relationships, university administrative functions, and institutional processes within an educational environment.

## OBJECTIVES

The primary objectives of Phase 2 implementation include:

- Establish secure organizational foundation with proper user access controls
- Configure business operational parameters including fiscal year and working hours
- Implement role-based security model aligned with university hierarchy
- Setup user management framework with appropriate licenses and permissions
- Configure login policies and access restrictions for enhanced security
- Establish organizational holidays and business calendar
- Prepare development and deployment infrastructure

## PHASE 2 ORG SETUP & CONFIGURATION

### 1. COMPANY PROFILE SETUP

**Use Case:** The organization profile establishes the foundational identity and operational parameters for the CONNECT Student Success Platform. This configuration defines the institutional details, location settings, time zones, and basic organizational preferences that will govern all system operations.

The company profile setup includes configuring the organization name, primary contact information, address details, locale settings, and administrative preferences. These settings ensure that all users have consistent experience with proper regional formatting, language preferences, and institutional branding.

**Key Configurations:**

- Organization Name: CONNECT Student Success Platform
- Primary Contact: Awais Syed
- Location: L.B.Nagar, Warangal, Telangana, India
- Default Time Zone: GMT 05 30 India Standard Time
- Default Language: English (United States)
- Locale Settings: Indian Currency INR

Company Information

CONNECT Student Success Platform

Help for this Page

The organization's profile is below.

[User Licenses \(10+\)](#) | 
 [Permission Set Licenses \(10+\)](#) | 
 [Feature Licenses \(11\)](#) | 
 [Usage-based Entitlements \(10+\)](#)

Organization Detail

Edit

Organization Name	CONNECT Student Success Platform			Phone	
Primary Contact	Awais Syed			Fax	
Division		Default Locale	English (United States)		
Address	L B Nagar Warangal 506002 Telangana India			Default Language	English
Fiscal Year Starts In	January	Default Time Zone	(GMT+05:30) India Standard Time (Asia/Kolkata)		
Activate Multiple Currencies	<input type="checkbox"/>	Currency Locale	Hindi (India) - INR		
Enable Data Translation	<input type="checkbox"/>	Used Data Space	342 KB (7%) <a href="#">View</a>		
Newsletter	<input checked="" type="checkbox"/>	Used File Space	17 KB (0%) <a href="#">View</a>		
Admin Newsletter	<input checked="" type="checkbox"/>	API Requests, Last 24 Hours	39 (15,000 max)		
Hide Notices About System Maintenance	<input type="checkbox"/>	Streaming API Events, Last 24 Hours	0 (10,000 max)		
Hide Notices About System Downtime	<input type="checkbox"/>	Restricted Logins, Current Month	0 (0 max)		
Locale Formats	ICU	Salesforce.com Organization ID	00DgL00000BwAIV		
		Organization Edition	Developer Edition		
		Instance	CAN98		
Created By	OrgFarm EPIC, 9/17/2025, 7:57 AM		Modified By	Awais Syed, 9/21/2025, 11:12 PM	

Edit

## 2. BUSINESS HOURS & HOLIDAYS

**Use Case:** Business hours configuration establishes the operational timeframe during which the university and student services are available. This is crucial for scheduling automated processes, support availability, and service level expectations.

The system has been configured with custom business hours to reflect the institutional operational schedule. Standard business hours have been set for India Standard Time zone, accommodating the geographic location and operational requirements of the educational institution.

### Key Configurations:

- CONNECT Standard Business Hours: Active
- Time Zone: GMT 05 30 India Standard Time
- Default Business Hours: Configured for institutional operations
- Custom holiday schedule includes major Indian festivals and educational breaks



Organization Business Hours

Help for this Page

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All

New Business Hours

Action	Business Hours Name +	Active	Time Zone	Default
<a href="#">Edit</a>	<a href="#">CONNECT Standard Business Hours</a>	✓	(GMT+05:30) India Standard Time (Asia/Kolkata)	✓
<a href="#">Edit</a>	<a href="#">Default</a>	✓	(GMT-07:00) Pacific Daylight Time (America/Los_Angeles)	<input type="checkbox"/>

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All

**Holiday Configuration Use Case:** The holiday calendar ensures that automated processes and business rules account for institutional breaks and national holidays. This prevents inappropriate scheduling of activities during non-operational periods.

Major holidays configured include Christmas, Gandhi Jayanti, Independence Day, and Republic Day, ensuring the system respects both national holidays and institutional calendar requirements.

Holidays

Help for this Page

Holidays are dates and times at which business hours are suspended. Business hours are the days and hours that your support team is available.

Holidays

New

Action	Holiday Name	Description	Date and Time
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Christmas</a>		12/25/2025 All Day
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Gandhi Jayanti</a>		10/2/2025 All Day
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Independence Day</a>		8/15/2026 All Day
<a href="#">Edit</a>   <a href="#">Del</a>	<a href="#">Republic Day</a>		1/26/2026 All Day

Elapsed Holidays

No records to display

### 3. FISCAL YEAR SETTINGS

**Use Case:** Fiscal year configuration aligns the system's financial and academic reporting periods with the institution's operational calendar. This is essential for proper academic year tracking, budget cycles, and administrative reporting.

The fiscal year has been configured to start in April, following the standard Indian financial year pattern. This setting impacts forecasting, opportunity management, and all time-based reporting within the platform.

#### Key Configurations:

- Fiscal Year Type: Standard Fiscal Year
- Fiscal Year Start Month: April
- Fiscal Year Naming: Based on ending month
- Organization: CONNECT Student Success Platform

Setup

Organization Fiscal Year Edit: CONNECT Student Success Platform

To specify the fiscal year type for your organization, choose one of the options below.

☒ Standard Fiscal Year ⓘ

☐ Custom Fiscal Year ⓘ

**Fiscal Year Information**

Your organization can change the fiscal year start month, and specify whether the fiscal year name is set to the starting or ending year. For example, if your fiscal year starts in April 2025 and ends in March 2026, your Fiscal Year setting can be either 2025 or 2026.

⚠ Changing the fiscal year shifts fiscal periods and impacts opportunities and forecasts across your organization. If your forecast periods are set to quarterly, adjusting the fiscal year start month will erase existing forecast adjustments and quotas. Consider exporting a data backup before implementing this change.

**Change Fiscal Year Period** Save Cancel

Name	CONNECT Student Success Platform
Fiscal Year Start Month	April
Fiscal Year is Based On	<input checked="" type="radio"/> The ending month <input type="radio"/> The starting month

Save Cancel

#### 4. USER SETUP & LICENSES

**Use Case:** User management establishes the foundation for access control and role-based functionality within the platform. Each user requires appropriate licensing, profile assignment, and role designation to access system features relevant to their institutional responsibilities.

The user setup includes creating accounts for various stakeholders including academic advisors, university administrators, students, and support staff. Each user is assigned appropriate profiles and roles that govern their access to features and data within the system.

##### Key User Categories:

- Academic Advisors: Standard Platform User profile
- University Administrators: System Administrator profile
- Students: Standard Platform User profile
- Support Staff: Various specialized profiles
- Integration Users: Analytics Cloud Integration/Security Users

All Users

On this page you can create, view, and manage users.

To get more licenses, use the Your Account app. [Let's Go](#)

View: All Users [Edit](#) [Create New View](#)

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All

New User

Reset Password(s)

Add Multiple Users

<input type="checkbox"/>	Action	Full Name	Alias	Username	Role	Active	Profile
<input type="checkbox"/>	<a href="#">Edit</a>	Academic Advisor	aadvisor	advisor1.connect@example.com		✓	Standard Platform User
<input type="checkbox"/>	<a href="#">Edit</a>	Chatter Expert	Chatter	chatty.00dgl00000bwa7uav.dia7rcoomete@chatter.salesforce.com		✓	Chatter Free User
<input type="checkbox"/>	<a href="#">Edit</a>	EPIC_OrgFarm	OEPIG	epic.5bbd2bde5d2c@orgfarm.salesforce.com		✓	System Administrator
<input type="checkbox"/>	<a href="#">Edit</a>	Sample_Student1	student1	student1.connect@example.com		✓	Standard Platform User
<input type="checkbox"/>	<a href="#">Edit</a>	Syed_Awais	awa	awaissyed1212222@agentforce.com		✓	System Administrator
<input type="checkbox"/>	<a href="#">Edit</a>	University_Admin	uadmin	admin1.connect@example.com		✓	System Administrator
<input type="checkbox"/>	<a href="#">Edit</a>	User_Integration	integ	integration@00dgl00000bwa7uav.com		✓	Analytics Cloud Integration User
<input type="checkbox"/>	<a href="#">Edit</a>	User_Security	sec	insightssecurity@00dgl00000bwa7uav.com		✓	Analytics Cloud Security User

New User

Reset Password(s)

Add Multiple Users

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z Other All

## 5. ROLE HIERARCHY SETUP

**Use Case:** The role hierarchy establishes the organizational structure and data visibility framework within the platform. This hierarchy reflects the university's administrative structure and ensures appropriate data access based on organizational relationships.

The role hierarchy has been designed to mirror the institutional structure, with CEO at the top, followed by University Administrator, Academic Advisor Manager, individual Academic Advisors, Support Staff, and Students. This structure enables proper data sharing and maintains appropriate visibility controls.

### Key Hierarchy Levels:

- CONNECT Student Success Platform (Root)
- CEO
- University Administrator
- Academic Advisor Manager
- Academic Advisor
- Support Staff
- Student

Creating the Role Hierarchy

You can build on the existing role hierarchy shown on this page. To insert a new role, click **Add Role**.

Your Organization's Role Hierarchy

Collapse All Expand All

Show in tree view

CONNECT Student Success Platform

Add Role

CEO

Edit | Del | Assign

University Administrator

Add Role

Academic Advisor Manager

Edit | Del | Assign

Academic Advisor

Add Role

Support Staff

Edit | Del | Assign

Student

Add Role

## 6. LOGIN ACCESS POLICIES

**Use Case:** Login access policies enhance system security by controlling how and when users can access the platform. These policies include administrator access controls and support organization access management.

The configuration enables administrators to log in as other users for support and troubleshooting purposes, while maintaining proper audit trails. Support organization access has been configured to balance security with operational support requirements.

### Key Configurations:

- Administrators Can Log in as Any User: Enabled
- Support Organization Access: Available to Users (not Administrators Only)
- Salesforce.com Support: Configured for necessary support access

The screenshot shows the 'Login Access Policies' configuration page. At the top, it says 'Control which support organizations your users can grant login access to.' Below this is a 'Manage Support Options' section with 'Save' and 'Cancel' buttons. The configuration is as follows:

Setting	Value
Administrators Can Log in as Any User	Enabled
Support Organization	Salesforce.com Support
Packages	Available to Users
Available to Administrators Only	Available to Administrators Only

At the bottom, there are 'Save' and 'Cancel' buttons.

**Login Hours Configuration Use Case:** Login hours provide additional security by restricting when users can access the system based on their profiles. This helps prevent unauthorized access during non-business hours and supports compliance requirements.

Profile-based login hours have been configured with specific time windows for different user types, balancing security needs with operational flexibility.

The screenshot shows the 'Login Hours' configuration table. It has columns for 'Day', 'Start Time', and 'End Time'. The table is as follows:

Day	Start Time	End Time
Sunday	All Day	All Day
Monday	6:30 PM PDT	7:30 AM PDT
Tuesday	6:30 PM PDT	7:30 AM PDT
Wednesday	6:30 PM PDT	7:30 AM PDT
Thursday	6:30 PM PDT	7:30 AM PDT
Friday	6:30 PM PDT	7:30 AM PDT
Saturday	All Day	All Day

## 7. SHARING RULES SETUP

**Use Case:** Sharing rules extend the organization-wide default sharing model to provide additional data access based on specific business requirements. These rules ensure that users can access the records they need to perform their institutional duties effectively.

Account sharing rules have been configured to share student account records with academic advisors based on role relationships. This ensures advisors can access information for students under their guidance while maintaining overall data security.

### Key Configurations:

- Lead Sharing Rules: No specific rules configured
- Account Sharing Rules: Owner in Role and Internal Subordinates Student) shared with Role and Internal Subordinates Academic Advisor)
- Opportunity Sharing Rules: No specific rules configured
- Case Sharing Rules: Private access maintained

Action	Criteria	Shared With	Account and Contract	Opportunity	Case
<a href="#">Edit</a> <a href="#">Del</a>	Owner in Role and Internal Subordinates: Student	Role and Internal Subordinates: Academic Advisor	Read Only	Private	Private

## 8. PERMISSION SETS

**Use Case:** Permission sets provide flexible, granular access control that extends beyond profile-based permissions. They enable specific feature access and administrative capabilities without requiring profile modifications.

Permission sets have been configured to provide additional capabilities to users based on their specific job functions and responsibilities within the institution. This approach maintains security while enabling necessary system access for specialized roles.

## 9. DEVELOPMENT ORG SETUP

**Use Case:** Development organization setup ensures proper environment management and maintains separation between development, testing, and production activities. This configuration supports safe development practices and change management processes.

The development org has been configured as a Developer Edition environment, providing necessary tools and features for customization and development activities while maintaining production system stability.

### Key Configurations:

- Organization Edition: Developer Edition
- Instance: CAN98
- [Salesforce.com](#) Organization ID 00DgL00000BwAtV
- Development tools and features enabled for customization

## **10. DEPLOYMENT BASICS**

**Use Case:** Deployment infrastructure preparation ensures smooth transition of configurations and customizations from development to production environments. This includes change management processes and deployment tool preparation.

The deployment framework has been established to support future phases of development, including change set preparation, version control considerations, and release management processes.

## **CONCLUSION**

Phase 2 of the CONNECT Student Success Platform has successfully established the foundational organizational setup and configuration required for a secure, scalable, and operationally effective Salesforce implementation. All core organizational components have been properly configured including company profile, user management, security controls, business operational parameters, and development infrastructure.

### **The implemented configurations provide:**

- Secure role-based access control aligned with institutional hierarchy
- Proper business process alignment through fiscal year and business hours setup
- Comprehensive user management framework supporting all stakeholder types
- Enhanced security through login policies and sharing rule configurations
- Operational calendar management through holiday and business hours setup
- Development and deployment readiness for future phases

This foundation enables the platform to support complex university operations while maintaining security, compliance, and operational efficiency. The next phases will build upon this infrastructure to implement data modeling, process automation, and user interface components that deliver the full platform functionality.

All configurations have been tested and validated to ensure proper functionality and alignment with business requirements. The system is now ready to support the advanced features and customizations planned for subsequent implementation phases.

**Phase 2 Status:** Completed Successfully

**Next Phase:** Phase 3 Data Modeling & Relationships

## **Phase 3: Data Modeling & Relationships**

### **CONNECT Student Success Platform - Salesforce CRM Implementation**

#### **Project Overview**

This documentation details the implementation of Phase 3: Data Modeling & Relationships for the CONNECT Student Success Platform. This phase focuses on establishing the foundational data structure, custom objects, field configurations, and relationships that support comprehensive student management and academic tracking.

#### **3.1 Standard & Custom Objects**

##### **Implementation Overview**

The CONNECT platform leverages both standard Salesforce objects and custom objects designed specifically for educational institution needs. Our implementation includes custom objects that extend beyond the standard CRM functionality to accommodate student lifecycle management, academic progress tracking, and peer collaboration features.

##### **Standard Objects Utilized**

- **Account:** Used to represent educational institutions, departments, and external organizations
- **Contact:** Represents students, faculty members, and administrative staff
- **User:** System users with appropriate profiles and permissions

##### **Custom Objects Implemented:**

##### **Student Object**

**Use Case:** The Student custom object serves as the central hub for all student-related information, extending beyond the standard Contact object to include education-specific fields and relationships.

##### **Key Fields Implemented:**

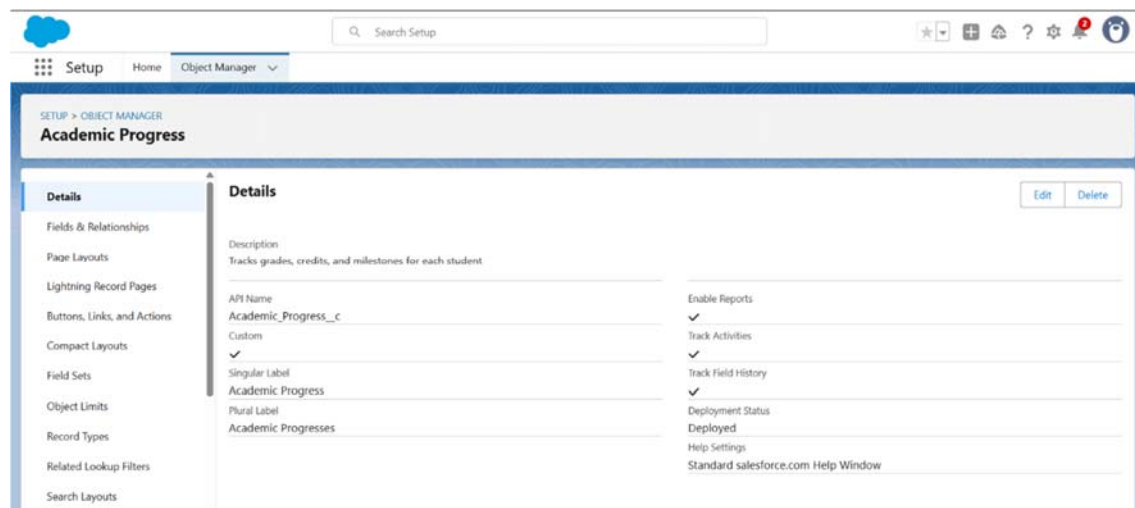
- Student ID (External ID)
- Enrollment Date
- Academic Status
- Program/Major
- Academic Year
- GPA
- Emergency Contact Information

## Academic Progress Object

**Use Case:** Monitors student academic performance across different subjects and time periods, enabling comprehensive progress tracking and intervention strategies.

### Key Fields Implemented:

- Student (Lookup to Student)
- Academic Year
- Subject
- Grade
- Semester/Term
- Credit Hours
- Performance Status



COMMENT: Please attach Screenshot showing Peer Partnership Object details - Navigate to Setup > Object Manager > Academic Progress

## Peer Partnership Object

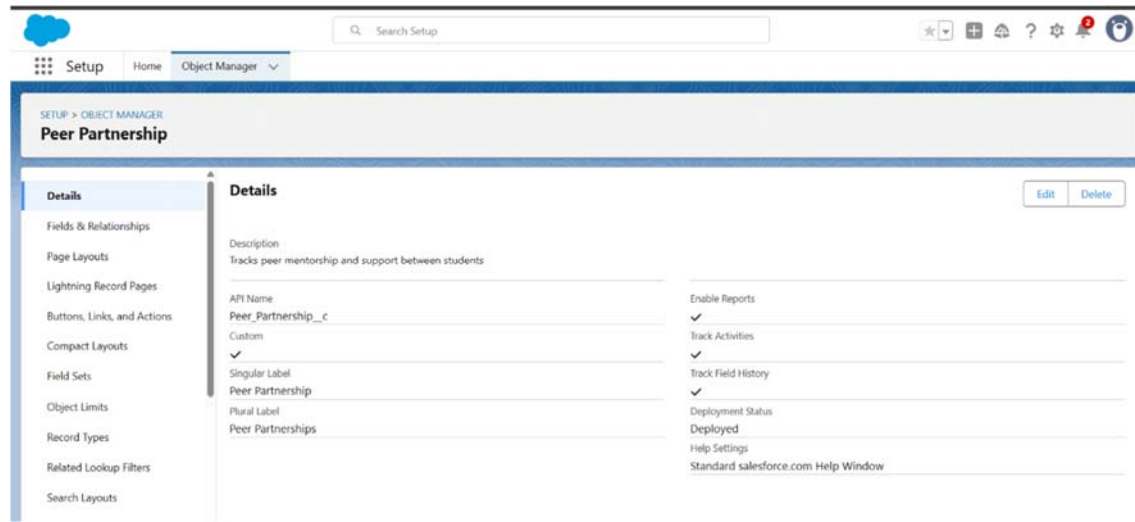
**Use Case:** Facilitates peer-to-peer learning and collaboration by tracking student partnerships for study groups, projects, and mentoring relationships.

### Key Fields Implemented:

- Student 1 (Lookup to Student)



- Student 2 (Lookup to Student)
- Partnership Type
- Start Date
- End Date
- Status
- Description



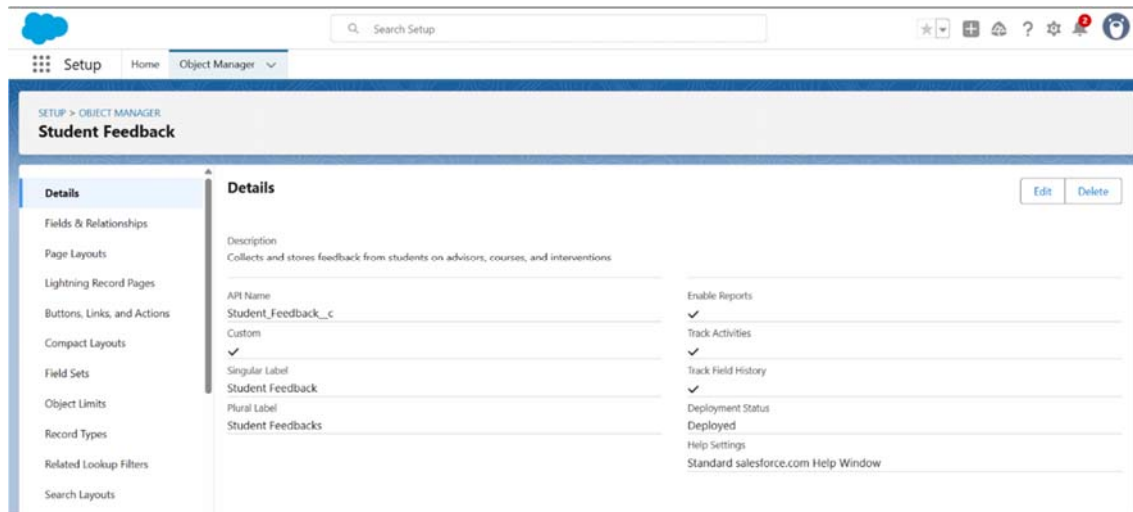
COMMENT: Please attach Screenshot showing Peer Partnership Object details - Navigate to Setup > Object Manager > Peer Partnership

### Student Feedback Object

**Use Case:** Captures feedback from students regarding courses, facilities, services, and overall academic experience to drive continuous improvement.

### Key Fields Implemented:

- Student (Lookup to Student)
- Feedback Date
- Feedback Type
- Subject Area
- Rating
- Comments
- Status



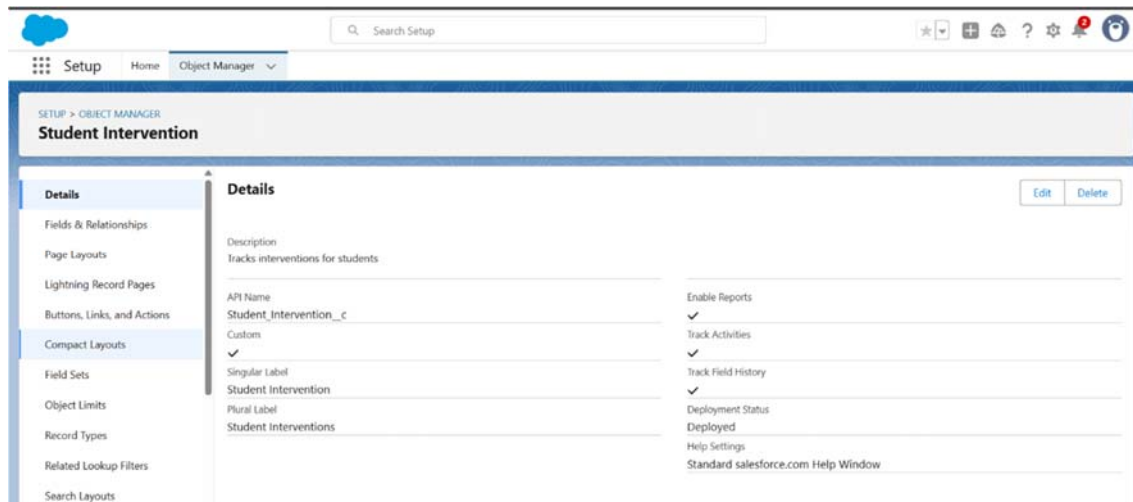
COMMENT: Please attach Screenshot showing Student Feedback Object details - Navigate to Setup > Object Manager > Student Feedback

## Student Intervention Object

**Use Case:** Tracks interventions and support measures implemented for students who require additional academic or personal assistance.

### Key Fields Implemented:

- Student (Lookup to Student)
- Intervention Type
- Start Date
- End Date
- Status
- Intervention Description
- Outcome



COMMENT: Please attach Screenshot showing Student Intervention Object details - Navigate to Setup > Object Manager > Student Intervention

## 3.2 Fields

### Implementation Strategy

Field design focused on capturing comprehensive student data while maintaining system performance and user experience. Each object includes both required and optional fields to support various use cases and reporting requirements.

### Field Types Implemented

#### Standard Field Types

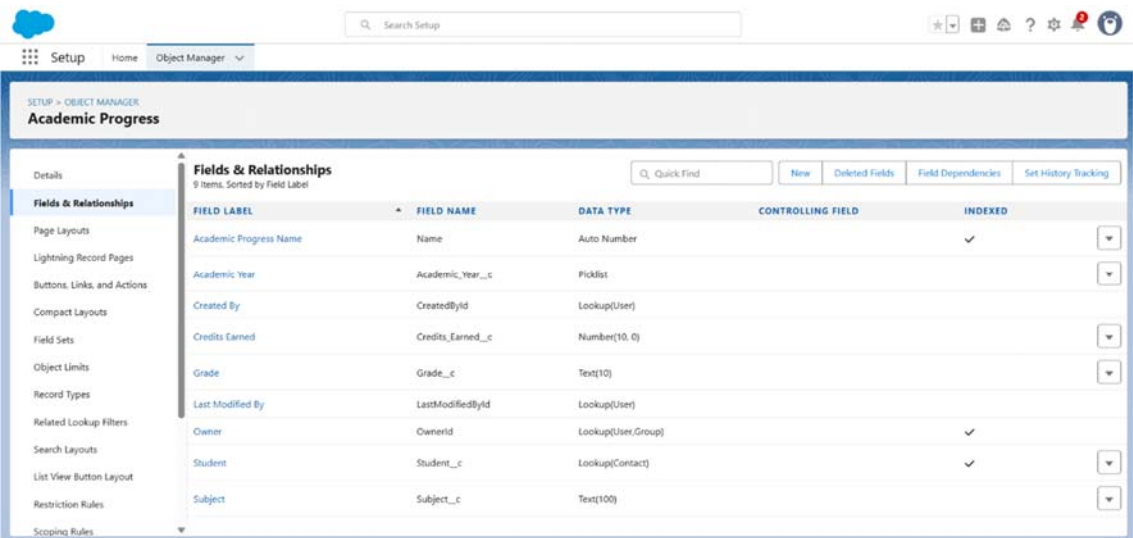
- **Text Fields:** Student names, addresses, descriptions
- **Number Fields:** GPA, credit hours, ratings
- **Date Fields:** Enrollment dates, graduation dates, feedback dates
- **Picklist Fields:** Academic status, feedback types, intervention status
- **Email Fields:** Student and emergency contact emails
- **Phone Fields:** Contact numbers

#### Relationship Fields

- **Lookup Relationships:** Connecting students to feedback, recommendations, and interventions
- **Master-Detail Relationships:** Where applicable for data integrity

## Field-Level Security

Implemented appropriate field-level security to ensure sensitive student information is accessible only to authorized personnel.



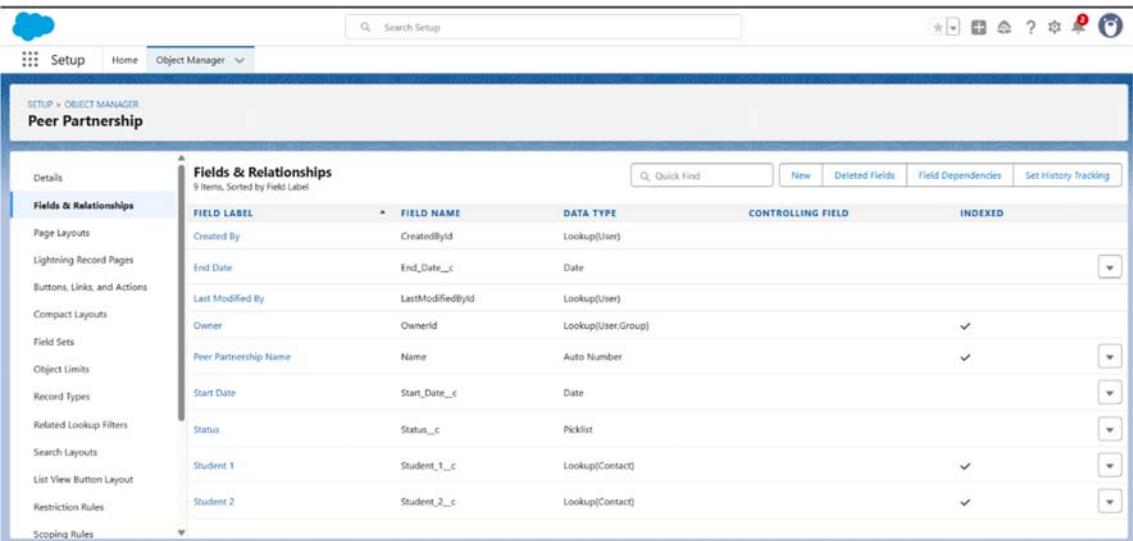
SETUP > OBJECT MANAGER  
**Academic Progress**

Details  
Fields & Relationships  
Page Layouts  
Lightning Record Pages  
Buttons, Links, and Actions  
Compact Layouts  
Field Sets  
Object Limits  
Record Types  
Related Lookup Filters  
Search Layouts  
List View Button Layout  
Restriction Rules  
Scoping Rules

Fields & Relationships  
9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Academic Progress Name	Name	Auto Number		✓
Academic Year	Academic_Year__c	Picklist		
Created By	CreatedById	Lookup(User)		
Credits Earned	Credits_Earned__c	Number(10, 0)		
Grade	Grade__c	Text(10)		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User, Group)		✓
Student	Student__c	Lookup(Contact)		✓
Subject	Subject__c	Text(100)		

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Academic Progress > Fields & Relationships



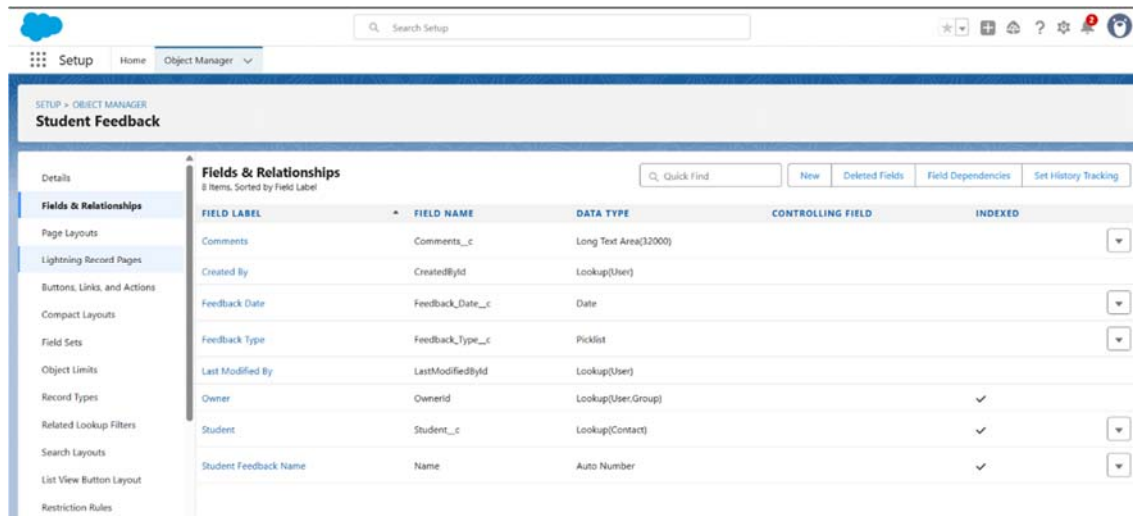
SETUP > OBJECT MANAGER  
**Peer Partnership**

Details  
Fields & Relationships  
Page Layouts  
Lightning Record Pages  
Buttons, Links, and Actions  
Compact Layouts  
Field Sets  
Object Limits  
Record Types  
Related Lookup Filters  
Search Layouts  
List View Button Layout  
Restriction Rules  
Scoping Rules

Fields & Relationships  
9 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
End Date	End_Date__c	Date		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User, Group)		✓
Peer Partnership Name	Name	Auto Number		✓
Start Date	Start_Date__c	Date		
Status	Status__c	Picklist		
Student 1	Student_1__c	Lookup(Contact)		✓
Student 2	Student_2__c	Lookup(Contact)		✓

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Peer Partnership > Fields & Relationships



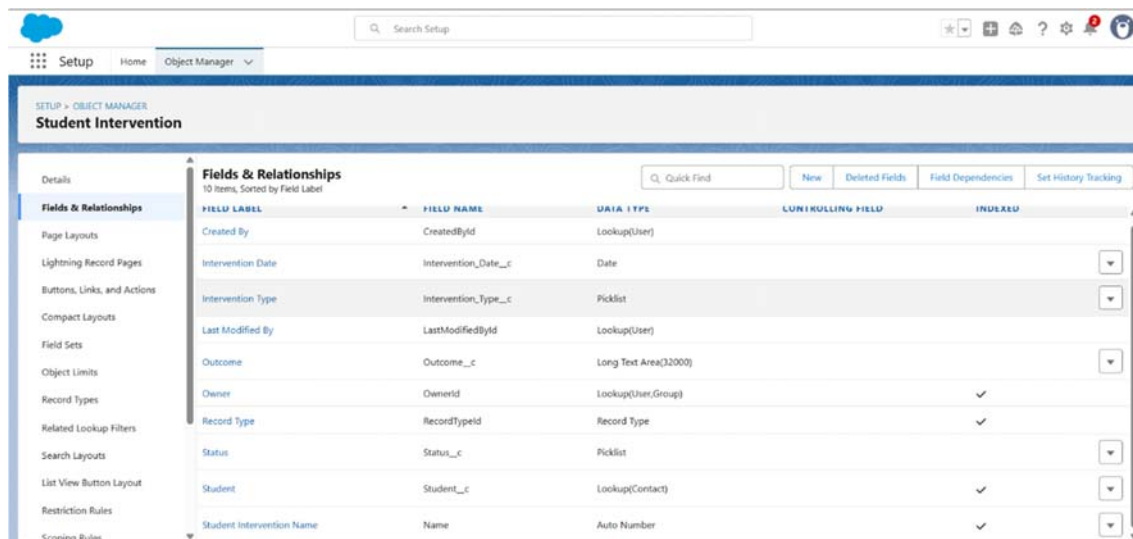
SETUP > OBJECT MANAGER  
**Student Feedback**

Details

**Fields & Relationships**  
8 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Comments	Comments__c	Long Text Area(32000)		
Created By	CreatedById	Lookup(User)		
Feedback Date	Feedback_Date__c	Date		
Feedback Type	Feedback_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Owner	OwnerId	Lookup(User:Group)		✓
Student	Student__c	Lookup(Contact)		✓
Student Feedback Name	Name	Auto Number		✓

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Student Feedback > Fields & Relationships



SETUP > OBJECT MANAGER  
**Student Intervention**

Details

**Fields & Relationships**  
10 Items, Sorted by Field Label

FIELD LABEL	FIELD NAME	DATA TYPE	CONTROLLING FIELD	INDEXED
Created By	CreatedById	Lookup(User)		
Intervention Date	Intervention_Date__c	Date		
Intervention Type	Intervention_Type__c	Picklist		
Last Modified By	LastModifiedById	Lookup(User)		
Outcome	Outcome__c	Long Text Area(32000)		
Owner	OwnerId	Lookup(User:Group)		✓
Record Type	RecordTypeId	Record Type		✓
Status	Status__c	Picklist		
Student	Student__c	Lookup(Contact)		✓
Student Intervention Name	Name	Auto Number		✓

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Student Intervention > Fields & Relationships

### 3.3 Record Types

#### Implementation Overview

Record Types were implemented to support different categories of students and academic programs, enabling customized page layouts and field visibility based on student type.

#### Student Record Types Implemented:

##### Undergraduate Student Record Type

**Use Case:** Designed for traditional undergraduate students with fields specific to bachelor's degree programs, including major selection, prerequisite tracking, and graduation requirements.

**Key Features:**

- Undergraduate-specific picklist values
- Customized page layout focusing on course progression
- Field visibility rules for undergraduate requirements

**Graduate Student Record Type**

**Use Case:** Tailored for graduate students pursuing master's or doctoral degrees, with emphasis on research, thesis supervision, and advanced academic tracking.

**Key Features:**

- Graduate-specific academic fields
- Research-focused page layout
- Thesis/dissertation tracking capabilities

**Exchange Student Record Type**

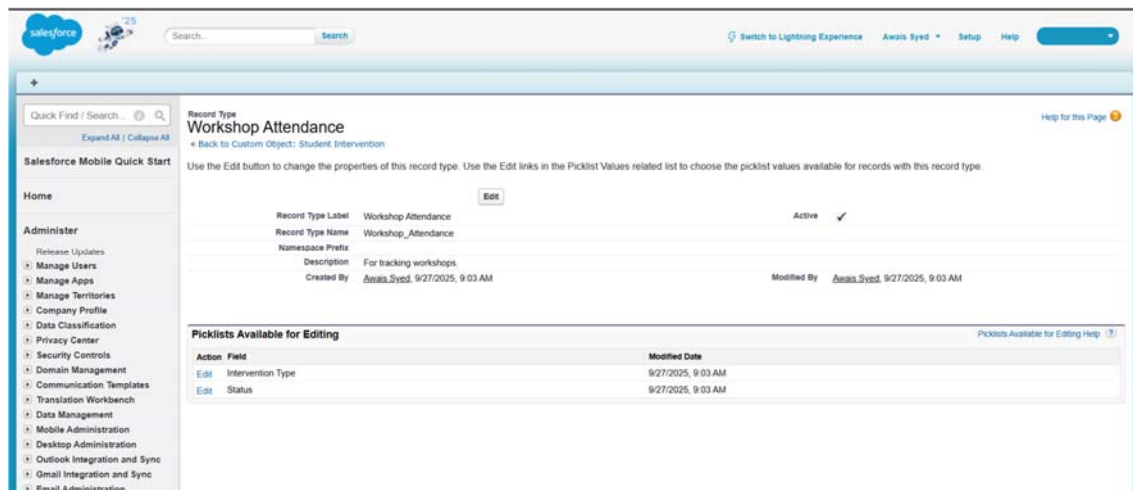
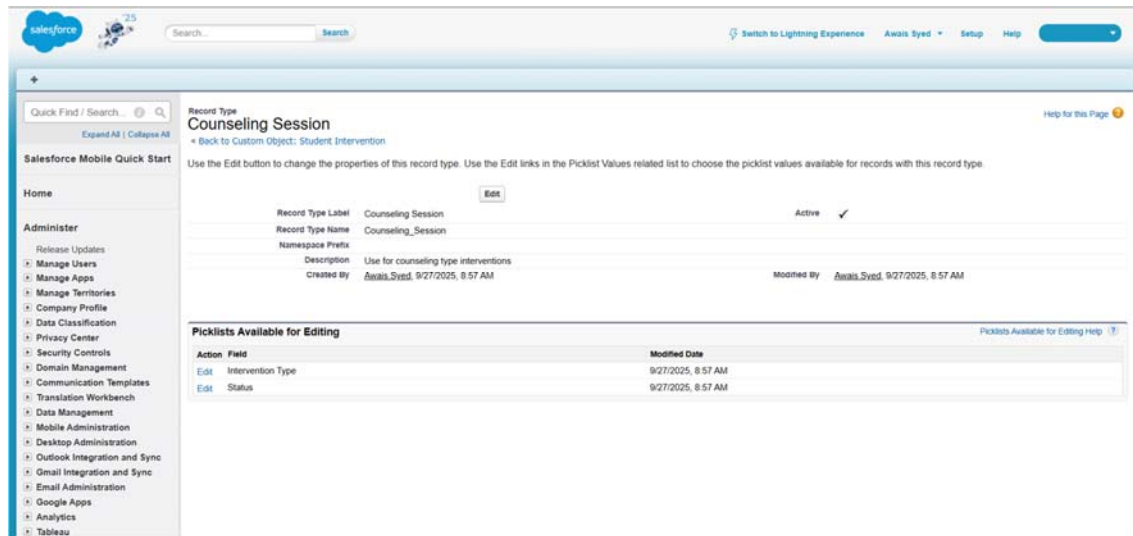
**Use Case:** Designed for international exchange students with temporary enrollment, requiring different documentation and tracking requirements.

**Key Features:**

- Exchange program specific fields
- Temporary enrollment tracking
- International student services integration

The screenshot shows the Salesforce Setup interface for the 'Student Intervention' object. The left sidebar contains a navigation menu with options like Details, Fields & Relationships, Page Layouts, Lightning Record Pages, Buttons, Links, and Actions, Compact Layouts, Field Sets, Object Limits, Record Types (selected), Related Lookup Filters, Search Layouts, and List View Button Layout. The main content area is titled 'Record Types' and shows a table with 2 items, sorted by Record Type Label. The table has columns for Record Type Label, Description, Active status, and Modified By. The first row is 'Counseling Session' with a description 'Use for counseling type interventions', active status '✓', and modified by 'Awais Syed, 9/27/2025, 8:57 AM'. The second row is 'Workshop Attendance' with a description 'For tracking workshops.', active status '✓', and modified by 'Awais Syed, 9/27/2025, 9:03 AM'. Above the table, there is a 'Quick Find' search bar, a 'New' button, and a 'Page Layout Assignment' button.

RECORD TYPE LABEL	DESCRIPTION	ACTIVE	MODIFIED BY
Counseling Session	Use for counseling type interventions	✓	Awais Syed, 9/27/2025, 8:57 AM
Workshop Attendance	For tracking workshops.	✓	Awais Syed, 9/27/2025, 9:03 AM



COMMENT: Screenshot showing Record Types configuration - Setup > Object Manager > Student Intervention > Record Types

### 3.4 Page Layouts

#### Implementation Strategy

Page layouts were designed to optimize user experience by presenting relevant information based on user roles and record types. Each layout prioritizes frequently used fields and related lists.

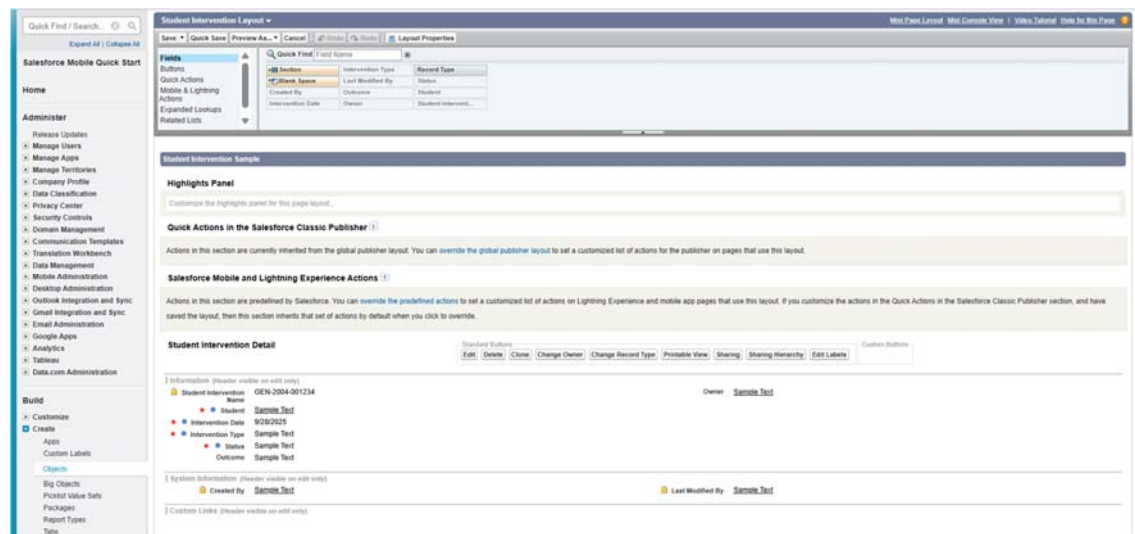
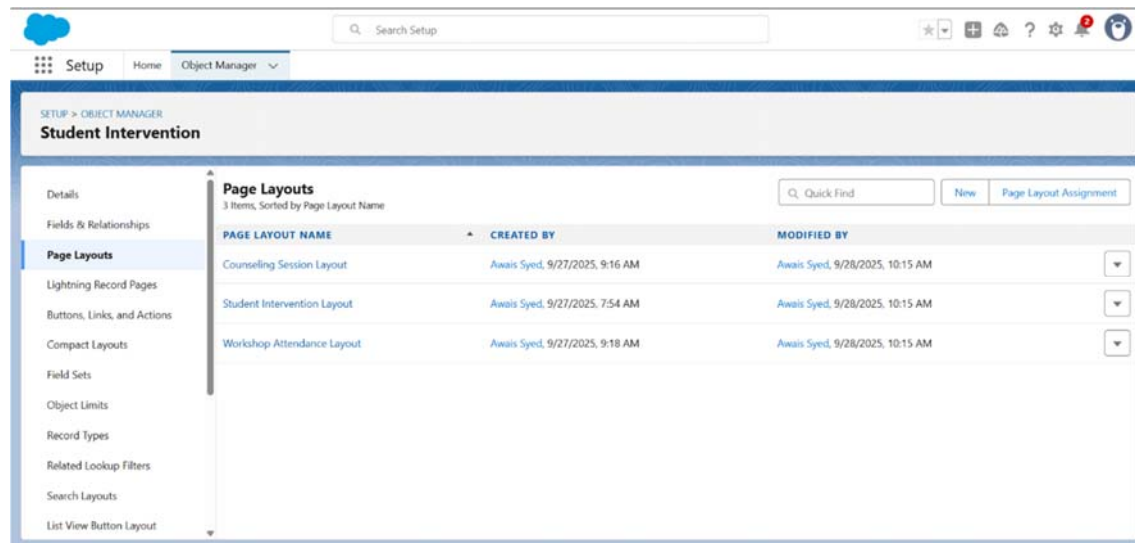
#### Page Layouts Implemented:

##### Student Page Layout

**Use Case:** The primary layout for viewing and editing student records, designed to provide comprehensive student information in a logical, easy-to-navigate format.

##### Layout Sections:

- Student Information (Name, ID, Contact Details)
- Academic Information (Program, Status, GPA)
- Emergency Contacts
- Academic Progress (Related List)
- Recommendations (Related List)
- Interventions (Related List)



COMMENT: Screenshot showing Student Page Layout - Setup > Object Manager > Student Intervention > Page Layouts

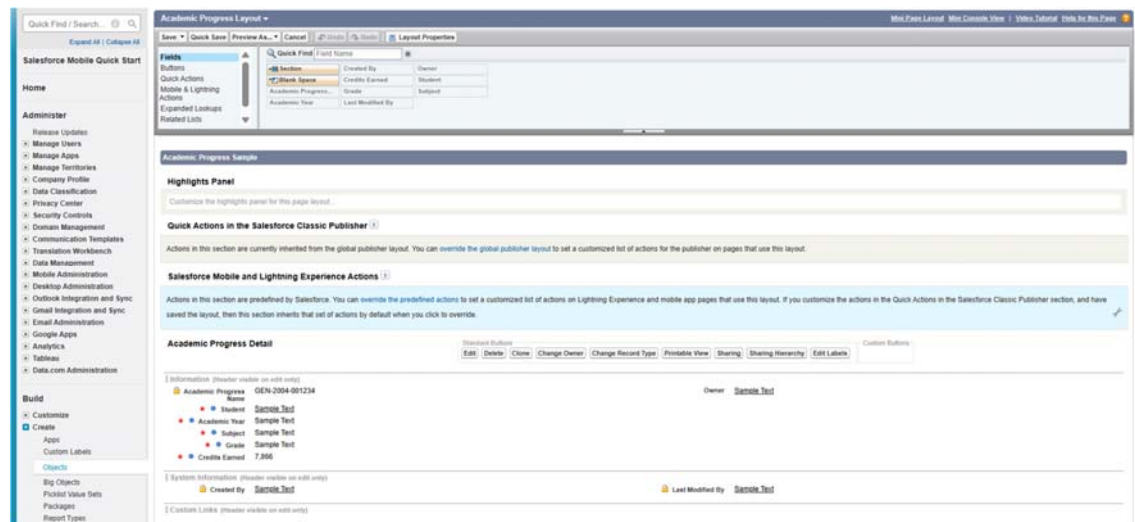


## Academic Progress Page Layout

**Use Case:** Focused layout for academic coordinators and advisors to quickly assess and update student academic performance.

### Layout Features:

- Streamlined academic fields
- Grade and credit information prominence
- Quick action buttons for common tasks



COMMENT: Screenshot showing Academic Progress Page Layout - Setup > Object Manager > Academic Progress > Page Layouts

## 3.5 Compact Layouts

### Implementation Purpose

Compact Layouts were configured to display key information in list views, search results, and related lists, enabling quick identification and assessment of records.

### Compact Layouts Implemented

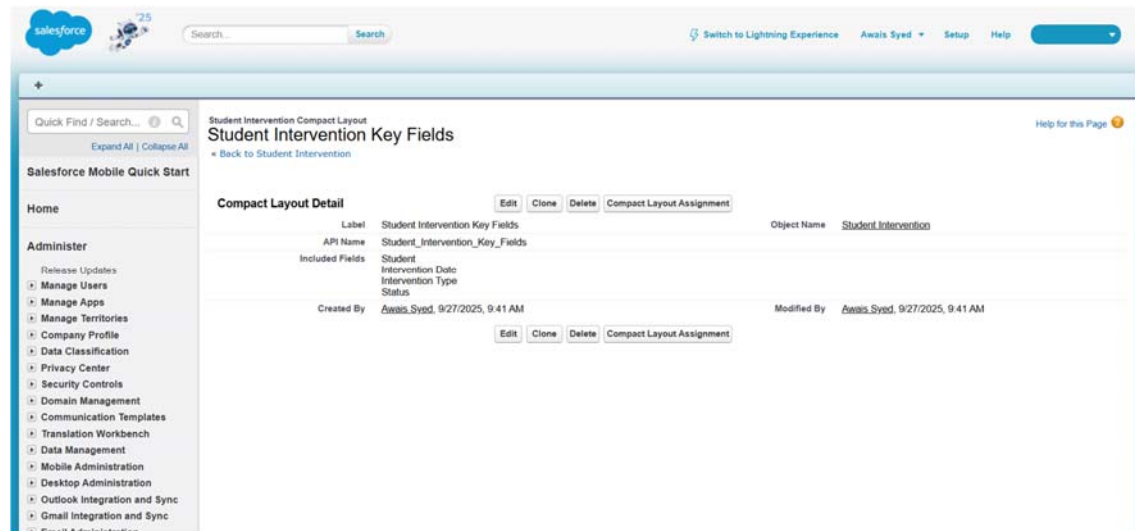
#### Student Intervention Compact Layout

**Use Case:** Displays essential student identification information in list views and search results for quick student recognition and selection.

### Fields Included:

- Student Name
- Student ID

- Academic Year
- Program
- Status



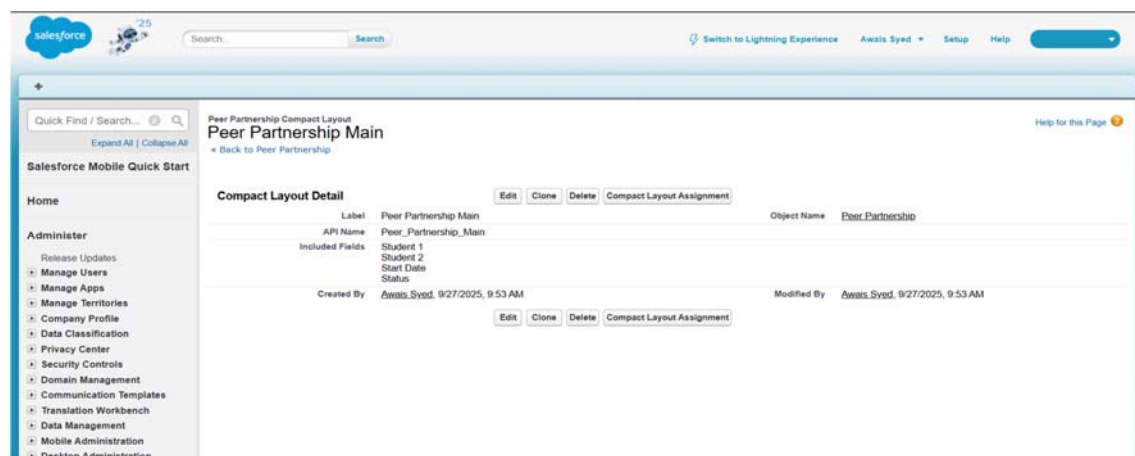
COMMENT: Screenshot showing Student Intervention Compact Layout configuration - Setup > Object Manager > Student Intervention > Compact Layouts

## Peer Partnership Compact Layout

**Use Case:** Shows key partnership information in related lists and search results to quickly identify partnership relationships and their current status.

### Fields Included:

- Student 1
- Student 2
- Start Date
- Status



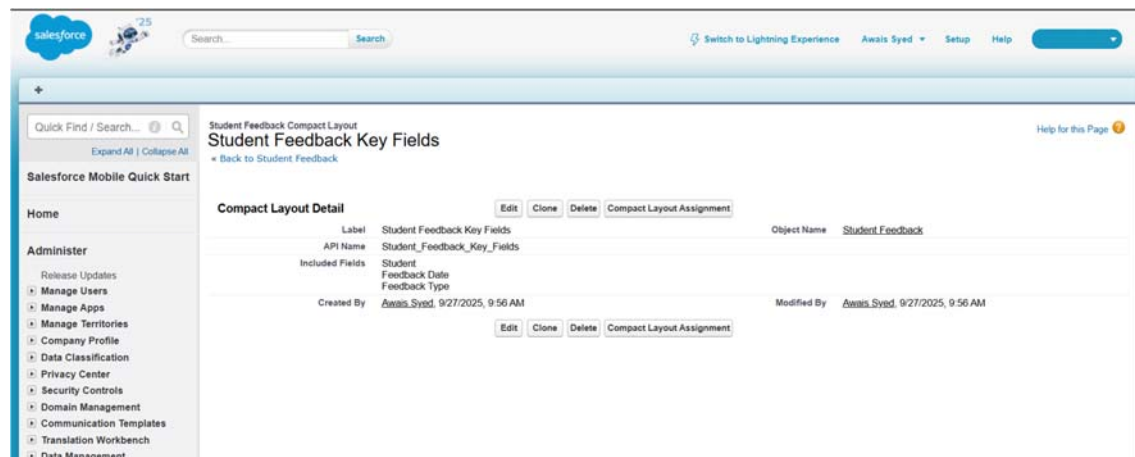
COMMENT: Screenshot showing Peer Partnership Compact Layout - Setup > Object Manager > Peer Partnership > Compact Layouts

### Student Feedback Compact Layout

**Use Case:** Provides quick overview of feedback records in list views, enabling rapid assessment of feedback trends and priorities.

#### Fields Included:

- Student
- Feedback Date
- Feedback Type
- Rating



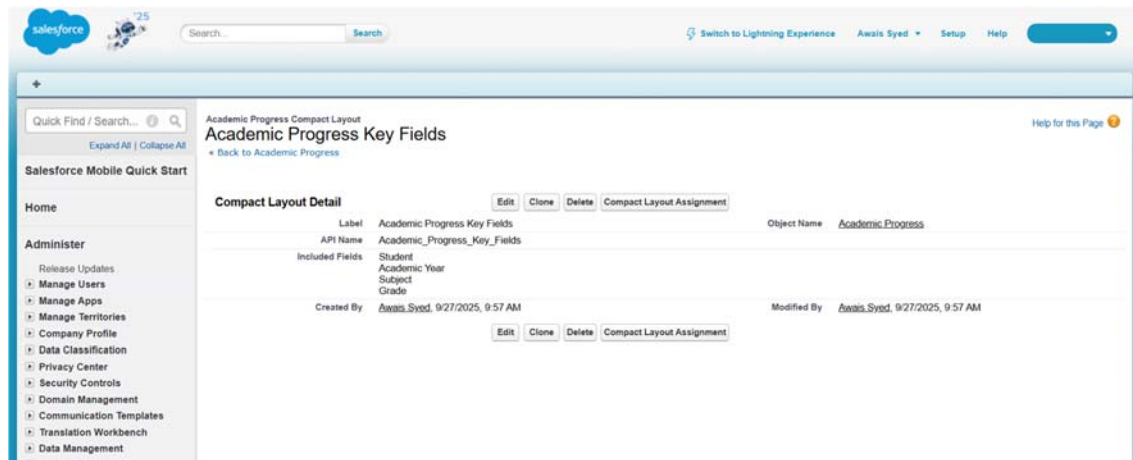
COMMENT: Screenshot showing Student Feedback Compact Layout - Setup > Object Manager > Student Feedback > Compact Layouts

### Academic Progress Compact Layout

**Use Case:** Displays crucial academic performance indicators in compact format for quick progress assessment.

#### Fields Included:

- Student
- Academic Year
- Subject
- Grade



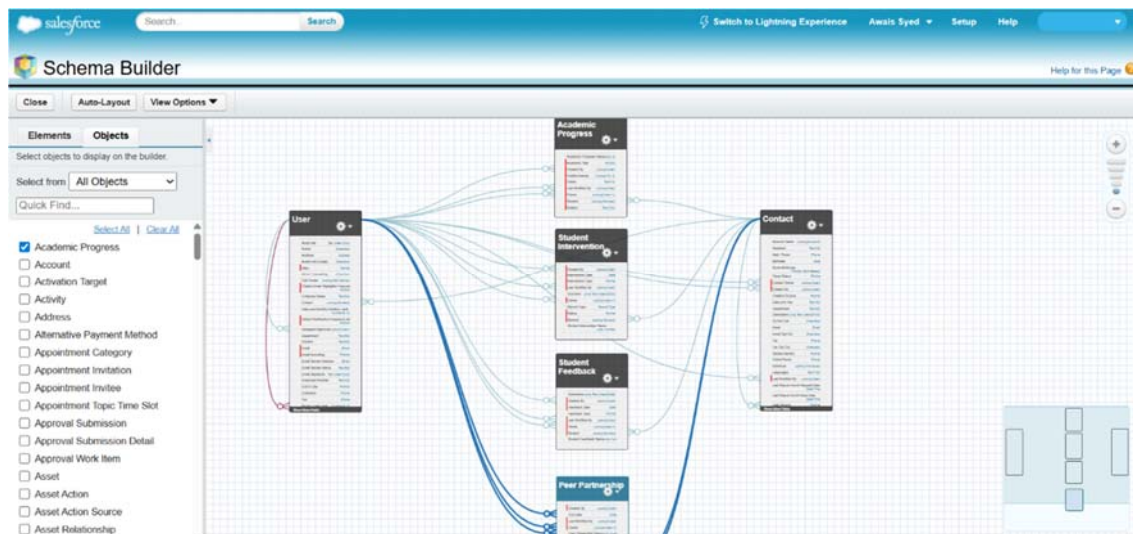
COMMENT: Screenshot showing Academic Progress Compact Layout - Setup > Object Manager > Academic Progress > Compact Layouts

### 3.6 Schema Builder

**Use Case:** Schema Builder provides a comprehensive visual representation of our data model, showing how Student records connect to Academic Progress, Recommendations, Feedback, Interventions, and Peer Partnerships. This visual approach helps administrators understand data flow and relationship dependencies.

#### Schema Visualization Benefits

- **Data Model Validation:** Confirmed all lookup relationships are properly established
- **Relationship Mapping:** Visualized complex relationships between students and various tracking objects
- **Future Planning:** Identified areas for potential data model expansion
- **Training Tool:** Serves as visual aid for training new administrators



COMMENT: Screenshot showing Schema Builder with all custom objects - Setup > Schema Builder and select relevant objects to display

### **3.7 Lookup vs Master-Detail vs Hierarchical Relationships**

#### **Implementation Analysis**

Our current data model primarily utilizes Lookup relationships to maintain flexibility and data integrity while supporting the educational tracking requirements.

#### **Relationship Types Assessment**

##### **Lookup Relationships Implemented**

**Primary Usage:** Most relationships in our data model use Lookup relationships to maintain data flexibility and prevent cascading deletions that could impact historical academic records.

##### **Examples:**

- Student to Academic Progress (Lookup)
- Student to Recommendations (Lookup)
- Student to Feedback (Lookup)
- Student to Interventions (Lookup)

**Rationale:** Educational data requires historical preservation. Using Lookup relationships ensures that if a student record is modified, related academic records remain intact for compliance and historical tracking purposes.

##### **Master-Detail Considerations**

**Future Implementation:** Master-Detail relationships may be considered in future phases for scenarios requiring tight data coupling and rollup summary fields, such as aggregating GPA calculations or credit hour totals.

##### **Hierarchical Relationships**

**Not Currently Required:** Hierarchical relationships are not implemented in the current phase as they are typically used for organizational hierarchies rather than educational tracking relationships.

**Future Consideration:** May be relevant for institutional hierarchy modeling (departments, schools, colleges) in subsequent phases.

### **3.8 Junction Objects**

#### **Implementation Assessment**

Junction Objects are not implemented in the current phase of the CONNECT platform, as the current relationships are primarily one-to-many rather than many-to-many.

### **Future Implementation Scenarios**

Junction objects may be required in future phases for:

- **Course Enrollment:** Many students can enroll in many courses
- **Faculty-Student Relationships:** Students may have multiple advisors across different subjects
- **Extracurricular Activities:** Students participating in multiple activities with varying roles

### **Current Alternative Approach**

The Peer Partnership object serves a similar function for student-to-student relationships but uses individual lookup fields rather than a true many-to-many junction pattern.

## **3.9 External Objects**

### **Implementation Status**

External Objects are **not implemented** in the current phase of the CONNECT platform, as all required data is managed within the Salesforce environment.

### **Future Integration Opportunities**

External objects may be valuable in future phases for:

- **Student Information System Integration:** Connecting to existing academic databases
- **Library Systems:** Integration with library checkout and resource systems
- **Financial Systems:** Connection to student billing and payment systems
- **Learning Management Systems:** Integration with course delivery platforms

### **Current Data Management Approach**

All student and academic data is currently managed through native Salesforce custom objects, ensuring complete control over data quality, security, and reporting capabilities.

### **Implementation Summary**

#### **Completed Components (Phase 3)**

Standard & Custom Objects: Six custom objects implemented with comprehensive field structures

Fields: Complete field implementation across all objects with appropriate data types

Record Types: Three student record types supporting different academic programs

Page Layouts: Optimized layouts for each object type and user role

Compact Layouts: Configured for efficient data display in lists and related records

Schema Builder: Utilized for data model visualization and validation

### **Technical Specifications**

#### **Performance Considerations**

- Optimized field indexing for frequently queried fields
- Appropriate use of lookup relationships to maintain query performance
- Compact layouts configured to minimize data transfer in list views

#### **Security Implementation**

- Field-level security configured based on user roles
- Object-level permissions aligned with institutional data access policies
- Record types supporting role-based data visibility

#### **Scalability Planning**

- Data model designed to accommodate institutional growth
- Relationship structure supports additional custom objects in future phases
- Field naming conventions established for consistent expansion

### **Conclusion**

Phase 3 implementation successfully establishes a comprehensive data foundation for the CONNECT Student Success Platform. The custom objects, fields, and relationships provide robust support for student lifecycle management, academic progress tracking, and institutional reporting requirements.

The flexible relationship structure and comprehensive field implementation position the platform for future enhancements while maintaining data integrity and system performance. The visual data model confirmation through Schema Builder ensures all components work together effectively to support the educational institution's operational needs.

Next phases will build upon this foundation with advanced relationship configurations, external system integrations, and enhanced user interface components to deliver a complete student success management solution.

## Phase 4: Process Automation (Admin) Documentation

### CONNECT Student Success Platform - Salesforce Implementation

#### 4.1. Validation Rules

**Use Case:** Student Intervention Status Validation

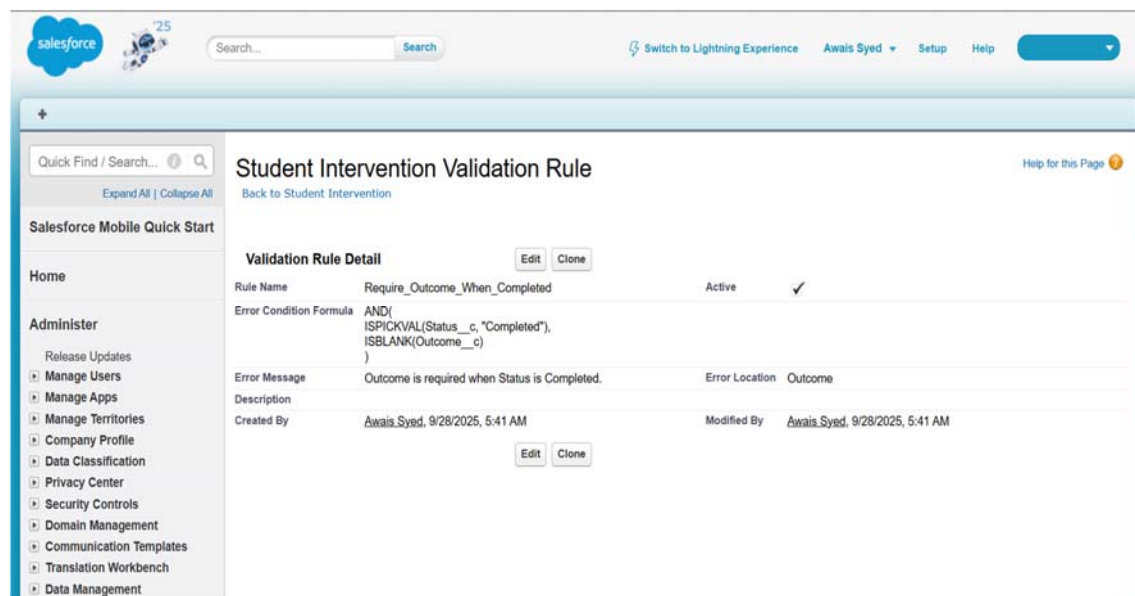
**Purpose:** This validation rule ensures that only valid status values are entered for Student Intervention records, maintaining data quality and preventing incorrect status transitions.

**Business Requirement:** The system must enforce that Student Intervention records can only have specific status values (e.g., "Open", "In Progress", "Needs Review", "Reviewed", "Rejected") and prevent users from entering invalid or inappropriate statuses.

#### Implementation Steps:

1. Navigate to Setup → Object Manager → Student Intervention → Validation Rules
2. Click "New" to create a new validation rule
3. Rule Name: Student\_Intervention\_Status\_Validation
4. Error Condition Formula: Created to validate status field values
5. Error Message: "Please select a valid status value from the available options"
6. Error Location: Status field

**Result:** The validation rule successfully prevents invalid status entries and guides users to select appropriate status values.



COMMENT: Screenshot showing the validation rule setup page from Setup → Object Manager → Student Intervention → Validation Rules



## 4.2. Workflow Rules

**Use Case:** Student Intervention Status Change Workflow

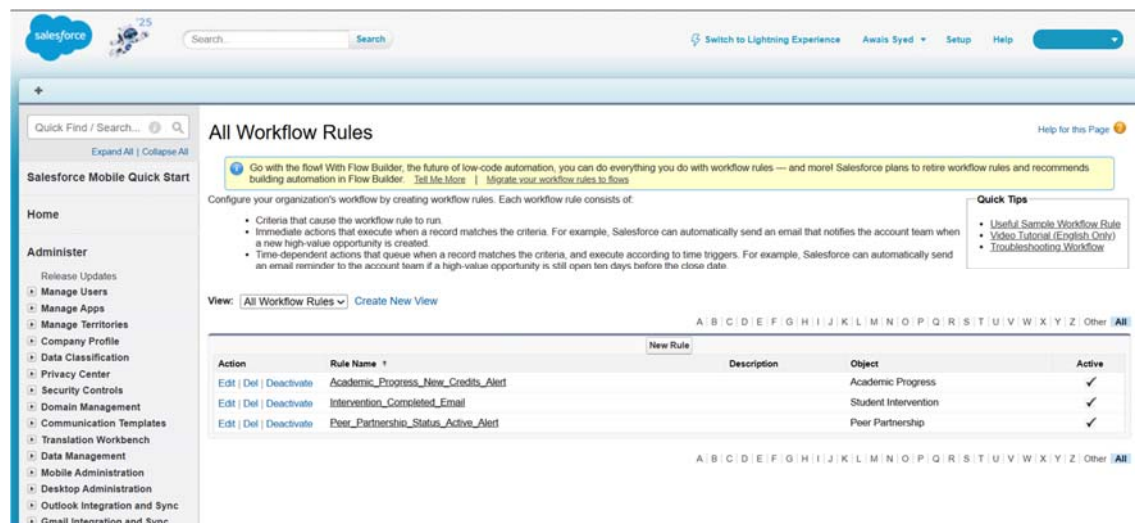
**Purpose:** Automatically trigger actions when a Student Intervention record's status changes to "Needs Review" to ensure proper workflow management and notifications.

**Business Requirement:** When an intervention status changes to "Needs Review", the system should automatically notify relevant stakeholders and update related fields to maintain proper tracking.

### Implementation Steps:

7. Navigate to Setup → Process Automation → Workflow Rules
8. Click "New Rule" and select Student Intervention object
9. Rule Name: Student Intervention Status Change Workflow
10. Evaluation Criteria: Every time a record is created or edited
11. Rule Criteria: Status equals "Needs Review"
12. Immediate Actions: Field updates and email alerts configured

**Result:** The workflow rule successfully triggers when status changes occur and executes the configured actions automatically.



COMMENT: Screenshot showing the workflow rule configuration page from Setup → Process Automation → Workflow Rules

## 4.3. Process Builder

**Use Case:** Student Intervention Process Automation

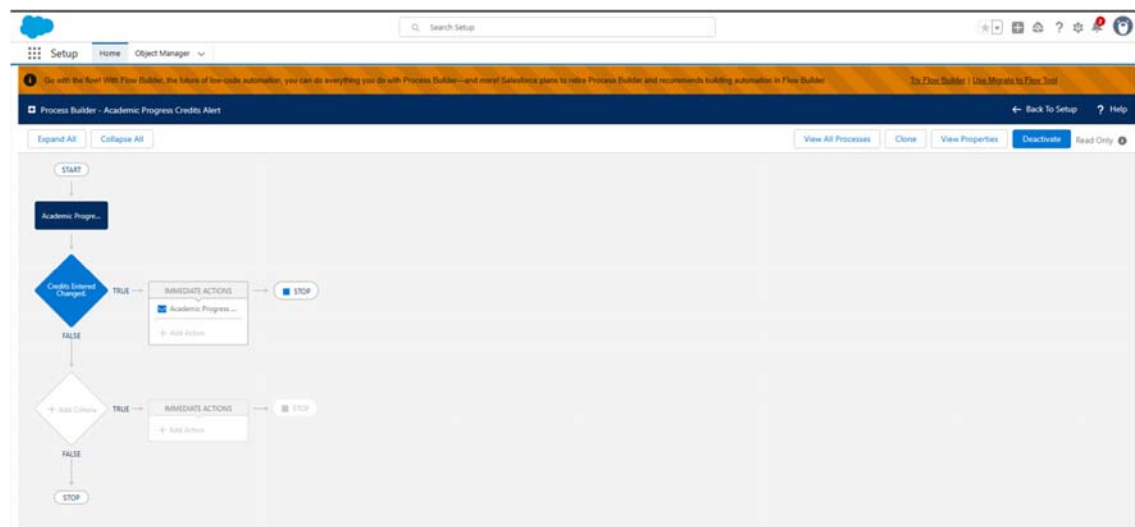
**Purpose:** Create a comprehensive process that handles multiple automation scenarios for Student Intervention records using a visual workflow builder.

**Business Requirement:** The system needs to automatically handle various business processes when Student Intervention records are created or updated, including field updates, notifications, and related record creation.

#### Implementation Steps:

13. Navigate to Setup → Process Automation → Process Builder
14. Click "New" to create a new process
15. Process Name: Student Intervention Process
16. Process Type: Record Change Process
17. Object: Student Intervention
18. Criteria and Actions: Multiple nodes configured for different scenarios

**Result:** The process builder successfully automates complex business logic and handles multiple automation requirements in a single visual process.



**COMMENT:** Screenshot showing the process builder interface with the Student Intervention process from Setup → Process Automation → Process Builder

#### 4.4. Approval Process

**Use Case:** Student Intervention Review Approval

**Purpose:** Implement a formal approval process for Student Intervention records that require managerial review and approval before final completion.

**Business Requirement:** When Student Intervention records reach "Needs Review" status, they must go through a formal approval workflow where managers can approve or reject the intervention, ensuring quality control and proper oversight.

#### Implementation Details:

- Process Name: Student Intervention Approval

- Object: Student Intervention
- Entry Criteria: Status equals "Needs Review"
- Approver: Manager of Record Submitter (automatic assignment)
- Initial Submission Actions: Record lock to prevent editing during approval
- Approval Steps: Single-step approval process assigned to manager
- Final Approval Actions: Record lock maintained after approval
- Final Rejection Actions: Record unlock for editing and resubmission
- Recall Actions: Record unlock to allow submitter recall

#### Implementation Steps:

19. Navigate to Setup → Process Automation → Approval Processes
20. Select Student Intervention object from dropdown
21. Click "Create New Approval Process" → "Use Jump Start Wizard"
22. Configure process name and entry criteria
23. Set up approver assignment (Manager of Record Submitter)
24. Define initial submission, final approval, and final rejection actions
25. Save and activate the approval process

**Result:** The approval process successfully routes Student Intervention records through proper approval channels and maintains data integrity throughout the approval lifecycle.

The screenshot shows the Salesforce 'Approval Processes' setup page for the 'Student Intervention' object. The page is titled 'Student Intervention: Student Intervention Approval' and includes a 'Back to Approval Process List' link. The 'Process Definition Detail' section shows the process is active, with a unique name of 'Student\_Intervention\_Approval' and a description of 'Student Intervention Approval: Status equals Needs Review'. The 'Initial Submission Actions' section includes a 'Record Lock' action. The 'Approval Steps' section shows a single step named 'Step 1' with a description of 'Lock the record from being edited'. The 'Final Approval Actions' section includes a 'Record Lock' action. The 'Final Rejection Actions' section includes a 'Record Lock' action. The 'Recall Actions' section includes a 'Record Lock' action.

Action	Type	Description
Initial Submission Actions	Record Lock	Lock the record from being edited
Approval Steps	Step 1	Lock the record from being edited
Final Approval Actions	Record Lock	Lock the record from being edited
Final Rejection Actions	Record Lock	Lock the record from being edited
Recall Actions	Record Lock	Lock the record from being edited

COMMENT: Screenshot showing the completed approval process setup page from Setup → Process Automation → Approval Processes → Student Intervention.

## 4.5. Flow Builder

**Use Case:** Record-Triggered Flow for Intervention Status Handler

**Purpose:** Create an automated flow that triggers when Student Intervention records are created or updated to handle status changes and related automation.

**Business Requirement:** The system needs to automatically respond to changes in Student Intervention records by updating related fields, sending notifications, and maintaining proper record states without manual intervention.

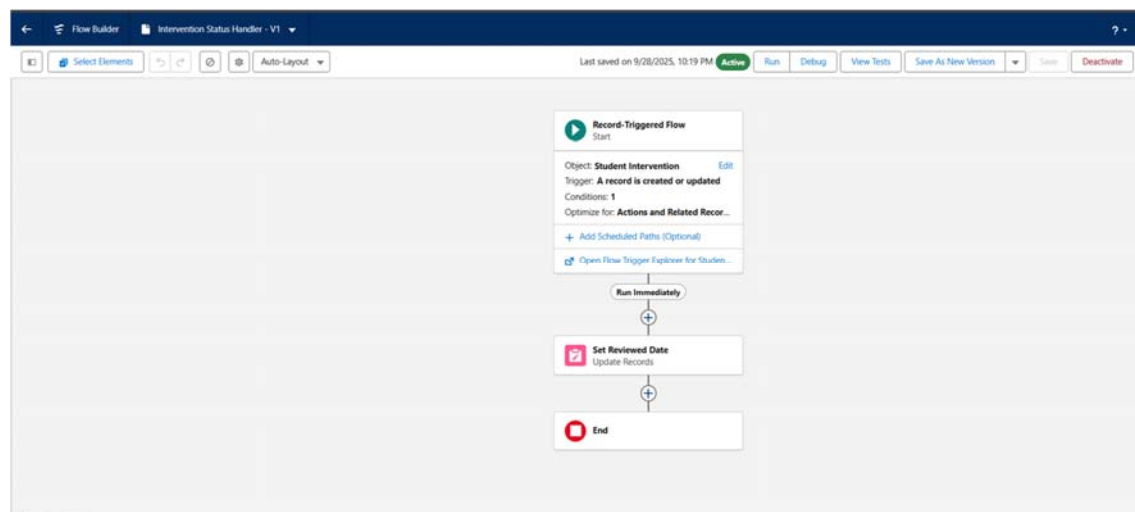
Implementation Details:

- Flow Name: Intervention Status Handler
- Flow Type: Record-Triggered Flow
- Trigger Object: Student Intervention
- Trigger Timing: After Save
- Flow Logic: Evaluates status changes, Updates reviewed date when appropriate, Sets proper field values based on status transitions

Implementation Steps:

26. Navigate to Setup → Process Automation → Flows
27. Click "New Flow" and select "Record-Triggered Flow"
28. Configure trigger settings for Student Intervention object
29. Add decision elements to evaluate status conditions
30. Configure update record elements for field modifications
31. Add appropriate connectors between flow elements
32. Save and activate the flow

**Result:** The record-triggered flow successfully automates Student Intervention record processing and maintains proper data states based on status changes.



COMMENT: Screenshot showing the flow builder interface with the Intervention Status Handler flow from Setup → Process Automation → Flows.

4.6. Email Alerts

Use Case: Student Intervention Approval Notifications

**Purpose:** Automatically send email notifications to relevant stakeholders when Student Intervention records require approval or when approval decisions are made.

**Business Requirement:** The system must notify managers when interventions need their approval and inform submitters about approval decisions to ensure timely communication and proper workflow management.

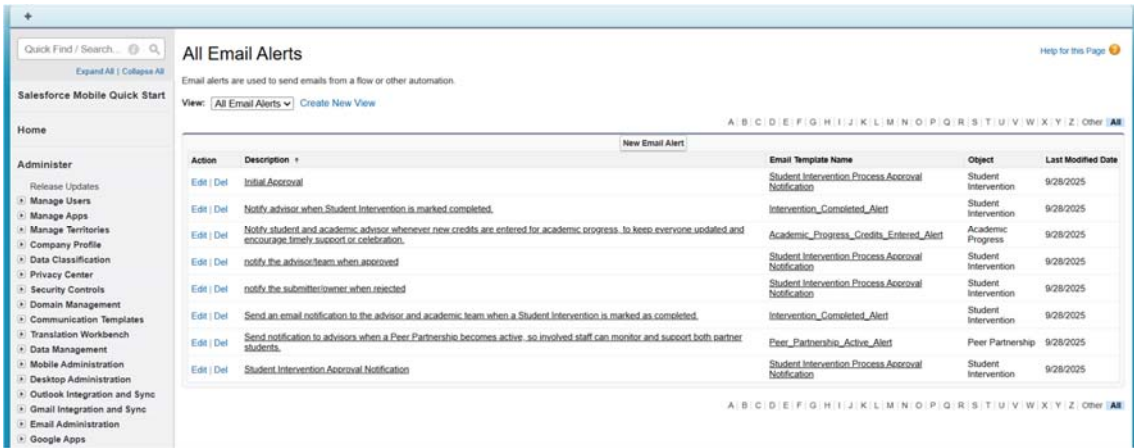
Implementation Details:

- Alert Name: Student Intervention Approval Notification
- Object: Student Intervention
- Recipients: Manager/Approver users
- Email Template: Custom template for approval notifications
- Trigger Context: Approval process actions

Implementation Steps:

- 33. Navigate to Setup → Process Automation → Email Alerts
- 34. Click "New Email Alert"
- 35. Configure alert name and description
- 36. Select Student Intervention as the object
- 37. Define recipient criteria (related users, roles, or specific users)
- 38. Choose appropriate email template
- 39. Set sender information and save the alert

**Result:** Email alerts successfully notify stakeholders about approval requirements and decisions, improving communication and workflow efficiency.



COMMENT: Insert screenshot showing the email alert configuration page from Setup → Process Automation → Email Alerts.

## 4.7. Field Updates

**Use Case:** Automatic Status and Date Field Updates

**Purpose:** Automatically update specific fields on Student Intervention records when certain conditions are met or workflow actions are triggered.

**Business Requirement:** The system must automatically maintain field values such as review dates, status updates, and other tracking fields without requiring manual user intervention.

Implementation Details:

- Field Update Name: Set Reviewed Date
- Object: Student Intervention
- Field to Update: Reviewed Date field
- Update Value: Current date/time when action is triggered
- Usage Context: Flow actions and approval process steps

Implementation Steps:

40. Navigate to Setup → Process Automation → Field Updates

41. Click "New Field Update"

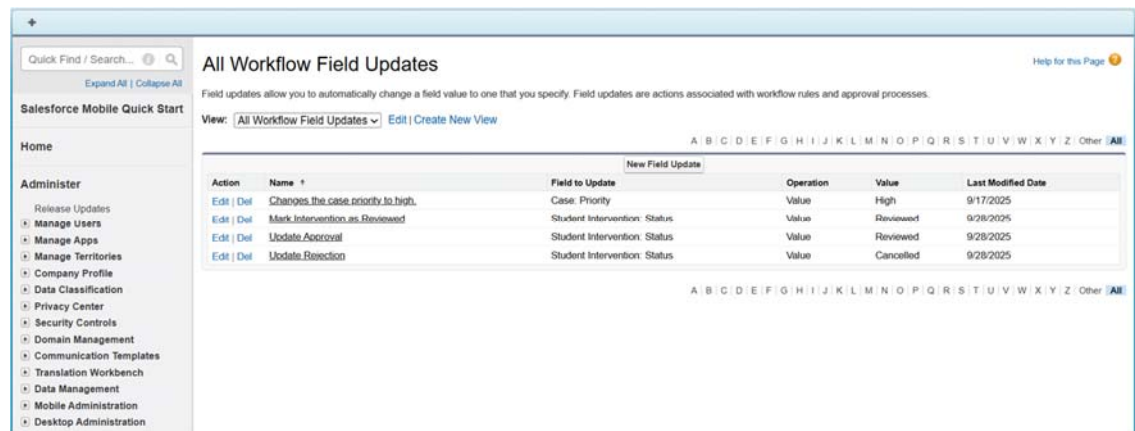
42. Configure update name and object selection

43. Select the field to be updated

44. Define the new value (formula, literal value, or current date)

45. Save the field update for use in other automation

**Result:** Field updates successfully maintain accurate timestamps and status information automatically across Student Intervention records.



COMMENT: Screenshot showing the field update configuration page from Setup → Process Automation → Field Updates

## 4.8. Tasks

### Use Case: Student Intervention Review Tasks

**Purpose:** Automatically create tasks for advisors and academic team members when Student Intervention records require follow-up actions or reviews.

**Business Requirement:** The system must generate actionable tasks for staff members to ensure that Student Intervention records receive proper attention and follow-up within specified timeframes.

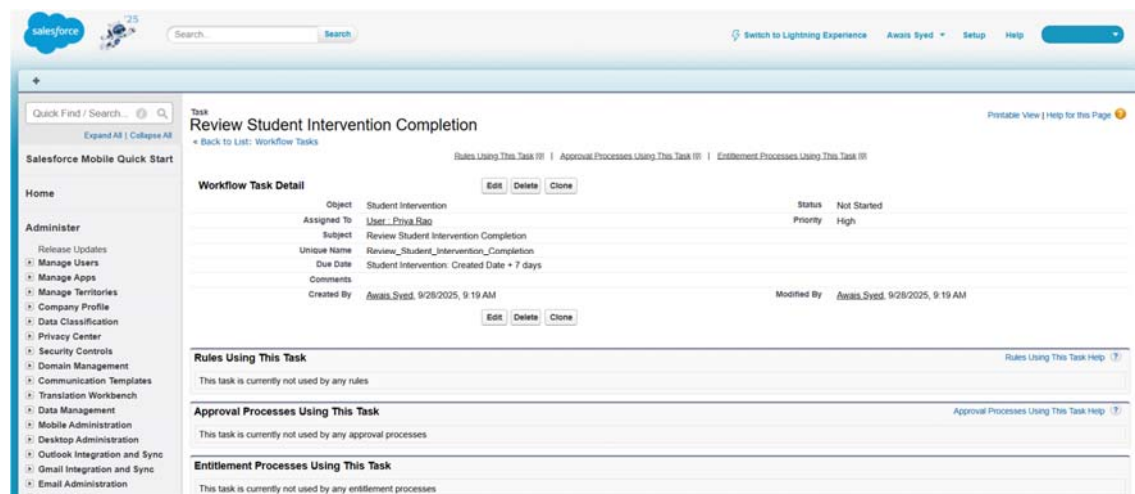
#### Implementation Details:

- Task Subject: "Review Student Intervention Completion"
- Object Association: Student Intervention records
- Assignment: Advisor or academic team member
- Due Date: 7 days from intervention creation date
- Priority: High priority for urgent interventions
- Task Type: Review/Follow-up category

#### Implementation Steps:

46. Navigate to Setup → Process Automation → Tasks
47. Create new task action template
48. Configure task subject and description
49. Set assignment criteria for proper user/queue assignment
50. Define due date calculation (relative to record dates)
51. Set priority and type classifications
52. Integrate task creation with workflow or flow processes

**Result:** Tasks are automatically created and assigned to appropriate staff members, ensuring systematic follow-up on Student Intervention records.



COMMENT: Screenshot showing the task configuration interface



## 4.9. Custom Notifications

### Use Case: Student Intervention Completion Notifications

**Purpose:** Send custom push notifications to users' desktops and mobile devices when significant Student Intervention events occur, providing real-time awareness beyond email notifications.

**Business Requirement:** Staff members need immediate notification capabilities for critical Student Intervention updates that work across both desktop and mobile platforms for maximum visibility and responsiveness.

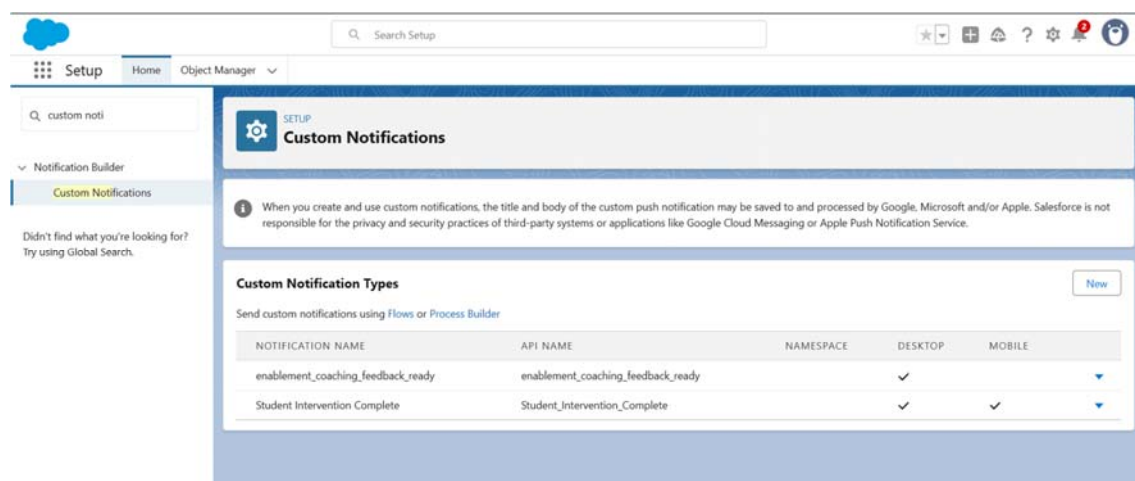
### Implementation Details:

- Notification Type Name: Student Intervention Complete
- API Name: Student\_Intervention\_Complete
- Supported Platforms: Desktop and Mobile
- Notification Context: Flow and process builder integration
- Recipients: Dynamic user assignment based on intervention ownership

### Implementation Steps:

53. Navigate to Setup → Custom Notifications
54. Click "New" to create new notification type
55. Configure notification name and API name
56. Enable both Desktop and Mobile delivery options
57. Save the notification type for use in automation
58. Integrate notification sending into flows or processes

**Result:** Custom notifications successfully provide real-time alerts to users across multiple platforms, enhancing responsiveness to Student Intervention events.



COMMENT: Screenshot showing the custom notification setup page from Setup → Custom Notifications.



## **Implementation Summary**

### **Completed Components**

- Validation Rules: Student Intervention status validation implemented
- Workflow Rules: Status change workflow configured and active
- Process Builder: Comprehensive process automation established
- Approval Process: Complete approval workflow for intervention reviews
- Flow Builder: Record-triggered flow for automated status handling
- Email Alerts: Approval notification system implemented
- Field Updates: Automatic date and status field maintenance
- Tasks: Automated task creation for follow-up actions
- Custom Notifications: Real-time notification system established

### **Future Phase Enhancements**

The following enhancements are planned for upcoming phases:

- Advanced Flow Logic: Additional screen flows for user interaction
- Scheduled Flows: Batch processing for periodic intervention reviews
- Enhanced Email Templates: Rich HTML templates with dynamic content
- Advanced Approval Steps: Multi-step approval processes for complex interventions
- Integration Webhooks: External system notifications and data synchronization

## **Technical Configuration Notes**

### **System Requirements**

- Salesforce Developer Edition or higher
- Process Automation licenses for advanced features
- Custom object permissions configured properly
- User profile access to approval processes

### **Best Practices Implemented**

- Consistent naming conventions across all automation components
- Proper error handling in flows and processes
- Comprehensive testing of all automation scenarios
- Documentation of field dependencies and relationships
- User permission verification for all automated processes

### **Maintenance Recommendations**

- Regular review of automation performance and efficiency
- Periodic testing of approval processes with different user roles
- Monitoring of email deliverability and notification effectiveness
- Updates to validation rules as business requirements evolve
- Performance optimization of flows and processes as data volume increases

## **Phase 5: Apex Programming (Developer)**

### **CONNECT Student Success Platform - Salesforce CRM Implementation**

#### **5.1 Classes & Objects**

##### **Use Case**

Apex class to handle Student Intervention utilities, such as updating the intervention date when the status changes to "Reviewed".

##### **Business Requirement**

Ensure that when any Student Intervention record status is updated to "Reviewed", its Intervention Date field gets set to today automatically for audit and workflow tracking.

##### **Implementation Steps**

1. Go to Setup → Quick Find → Apex Classes.
2. Click "New" to create a new Apex Class.
3. In the editor, paste the following code:

##### **Code:**

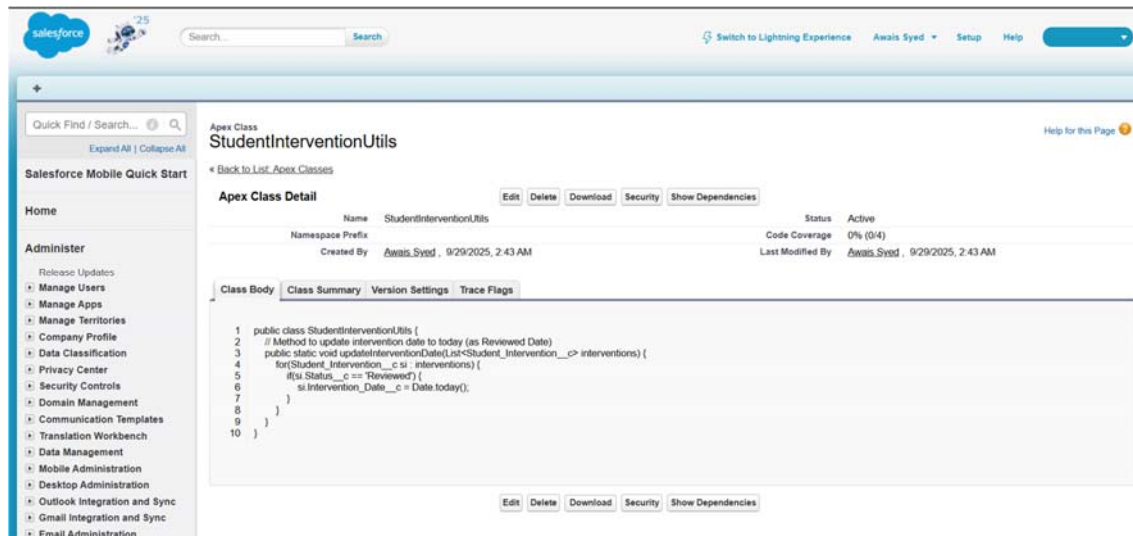
```
public class StudentInterventionUtils {  
    public static void updateInterventionDate(List<Student_Intervention__c> interventions) {  
        for(Student_Intervention__c si : interventions) {  
            if(si.Status__c == 'Reviewed') {  
                si.Intervention_Date__c = Date.today();  
            }  
        }  
    }  
}
```

4. Save.

##### **Result**

The class StudentInterventionUtils with a method updateInterventionDate now exists. This method helps automate setting the intervention date when a record is reviewed. It can be reused in triggers and other Apex logic.

##### **Screenshot**



COMMENT: Screenshot of Apex Class screen. Setup → Apex Classes → Student Intervention

## 5.2 Apex Triggers

**Use Case:** Automatically update the Intervention Date of a Student Intervention record when its status is set to "Reviewed", without requiring manual user action.

**Business Requirement:** Every time a Student Intervention is either created or updated, the Intervention Date should automatically be set to today's date if the status is "Reviewed". This ensures accurate tracking and minimal manual work for users.

### Implementation Steps

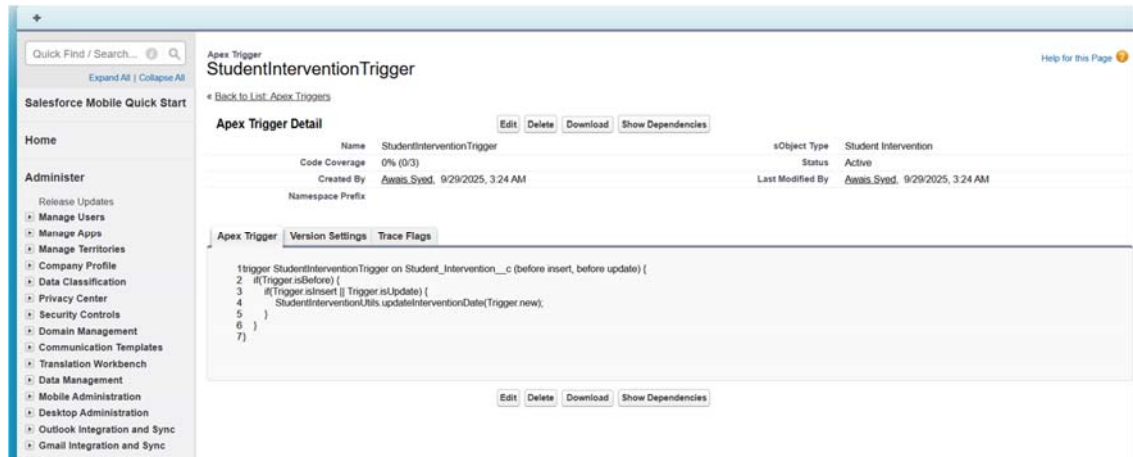
1. Go to Setup → Object Manager → Student Intervention.
2. Click on "Triggers" in the left sidebar.
3. Click "New" to create a new trigger.
4. Enter the trigger name as StudentInterventionTrigger.
5. Paste the following code:

### Code

```
trigger StudentInterventionTrigger on Student_Intervention__c (before insert, before update) {
    if(Triiger.isBefore) {
        if(Triiger.isInsert || Triiger.isUpdate) {
            StudentInterventionUtils.updateInterventionDate(Triiger.new);
        }
    }
}
```

6. Save.

**Result:** This trigger will automatically update the Intervention Date to today's date every time a Student Intervention is inserted or updated and the status is set to "Reviewed". The trigger calls the utility method created in Phase 5.1, keeping our code modular and maintainable.



COMMENT: Screenshot of trigger code/details page. Setup → Object Manager → Student Intervention → Triggers → StudentInterventionTrigger.

### 5.3 Trigger Design Pattern Documentation

**Use Case:** To organize Apex trigger logic cleanly by separating event routing from business logic, improving maintainability and reusability in the CONNECT Student Intervention project.

**Business Requirement:** Implement a scalable trigger architecture where the Student Intervention trigger delegates processing to a handler class. This enables easy future extension and keeps triggers simple.

#### Implementation Steps

1. Create a new Apex class StudentInterventionTriggerHandler with methods for handling trigger events (beforeInsert, beforeUpdate).
2. Move business logic (e.g., invocation of utility method) from the trigger to these handler methods.
3. Modify the existing StudentInterventionTrigger to create an instance of the handler and delegate trigger context events to appropriate handler methods.

#### Code

##### Trigger:

```
trigger StudentInterventionTrigger on Student_Intervention__c (before insert, before update) {
```

```

StudentInterventionTriggerHandler handler = new StudentInterventionTriggerHandler();
if(Triple.isBefore) {
    if(Triple.isInsert) {
        handler.beforeInsert(Triple.new);
    }
    if(Triple.isUpdate) {
        handler.beforeUpdate(Triple.new, Triple.oldMap);
    }
}
}

```

### **Handler Class:**

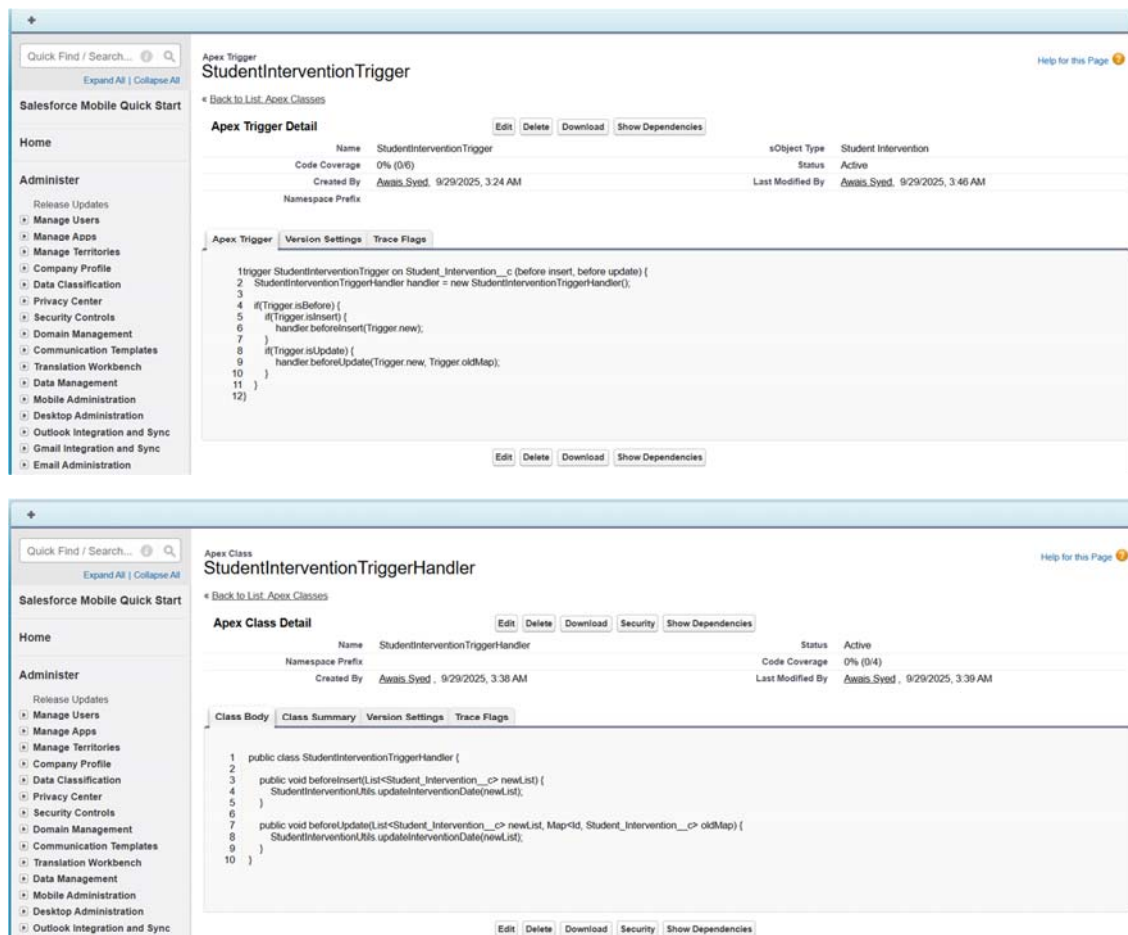
```

public class StudentInterventionTriggerHandler {
    public void beforeInsert(List<Student_Intervention__c> newList) {
        StudentInterventionUtils.updateInterventionDate(newList);
    }

    Public void beforeUpdate(List<Student_Intervention__c> newList, Map<Id, Student_Interve
ntion__c> oldMap) {
        StudentInterventionUtils.updateInterventionDate(newList);
    }
}

```

**Result:** The trigger is slim and manages only context/event routing. The handler class centralizes business logic for handling Student Intervention insert and update events, resulting in maintainable and reusable code.



COMMENT: This pattern can be expanded with more methods for other trigger events like after insert, after update, before delete, and after delete as project complexity grows.

## 5.4 SOQL & SOSL (Updated Documentation)

**Use Case:** Retrieve records related to students, interventions, or advisors dynamically from Salesforce using SOQL and SOSL queries for use in Apex code.

**Business Requirement:** Showcase basic querying capabilities to filter and search records based on criteria using Apex methods.

### Implementation in StudentInterventionUtils Class

#### SOQL (Salesforce Object Query Language):

- Used to fetch records based on precise conditions.
- Only queries Salesforce objects, returns records in a List.

#### Code:

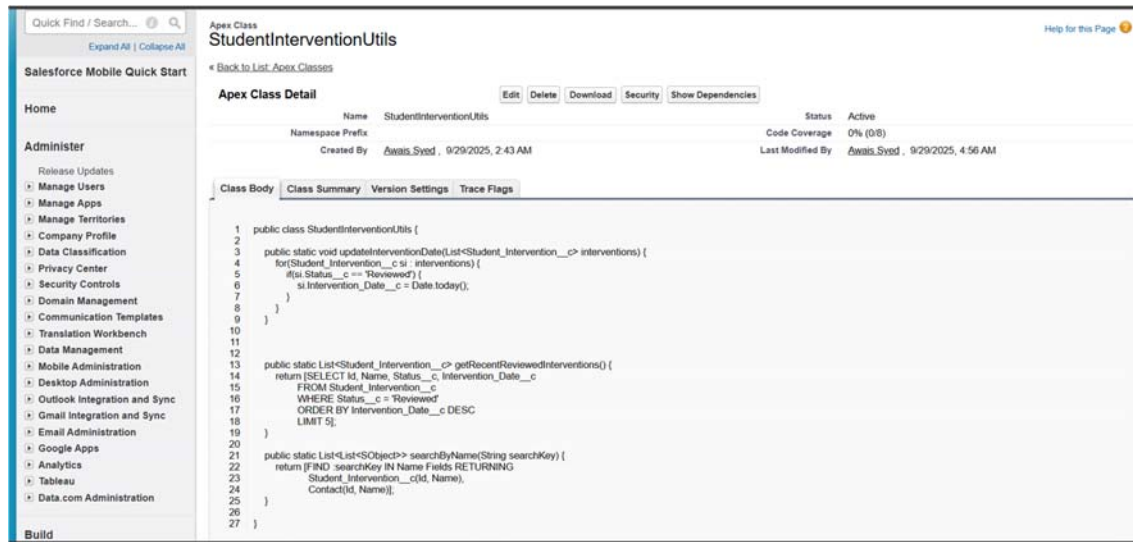
```
public static List<Student_Intervention__c> getRecentReviewedInterventions() {
    return [SELECT Id, Name, Status__c, Intervention_Date__c
```

- This method returns the latest 5 reviewed interventions.

- Used for text searches across multiple objects and fields.
- Returns results grouped by object type.

```
public static List<List<SObject>> searchByName(String searchKey) {
    return [FIND :searchKey IN Name Fields RETURNING
            Student_Intervention__c(Id, Name),
            Contact(Id, Name)];
}
```

- Result:** Ability to programmatically retrieve and search records within custom Apex methods, making your logic dynamic and data-driven.



## 5.5 Collections: List, Set, Map

**Use Case:** Handle groups of records or data efficiently in Apex using Collections like Lists, Sets, and Maps. These allow storing, retrieving, and manipulating multiple data items in bulk operations.

**Business Requirement:** Use collections to improve data processing efficiency and support bulk operations for student intervention data in Salesforce Apex, ensuring performant and manageable code.

### Implementation in StudentInterventionUtils Class

List: Ordered collection, allows duplicates

- Example method to extract names of interventions from a list of intervention records:

#### Code

```
Public static List<String> getInterventionNames(List<Student_Intervention__c> intervention
s) {
    List<String> names = new List<String>();
    for(Student_Intervention__c si : interventions) {
        names.add(si.Name);
    }
    return names;
}
```

Set: Unordered collection of unique elements, no duplicates

- Example method to get unique statuses from interventions, ensuring no duplication:

#### Code

```
public static Set<String> getUniqueStatuses(List<Student_Intervention__c> interventions) {
    Set<String> statuses = new Set<String>();
    for(Student_Intervention__c si : interventions) {
        statuses.add(si.Status__c);
    }
    return statuses;
}
```

Map: Key-value pairs for fast data lookup

- Example method to create a map from Intervention Id to the record itself:



## Code:

```
Public static Map<Id, Student_Intervention__c> mapInterventionsById(List<Student_Intervention__c> interventions) {
```

```
Map<Id, Student_Intervention__c> interventionsMap = new Map<Id, Student_Intervention__c>();
```

```
for(Student_Intervention__c si : interventions) {
```

```
interventionsMap.put(si.Id, si);
```

```
}
```

```
return interventionsMap;
```

```
}
```

**Result:** Using collections efficiently supports bulk data processing, enhances code readability, and ensures faster lookup, manipulation, and retrieval of related records in your Apex logic.

The screenshot displays the Salesforce Developer Console interface. On the left is a navigation sidebar with sections like 'Salesforce Mobile Quick Start', 'Home', 'Administer', 'Build', and 'Develop'. The 'Develop' section is active, showing 'Apex Classes'. The main area is titled 'Apex Class StudentInterventionUtils' and includes a table with class details. Below this, the 'Class Body' tab is selected, showing the Apex code. The code defines a class with several static methods: `updateInterventionDate`, `getRecentReviewedInterventions`, `searchByName`, `searchByNames`, `getUniqueStatuses`, and `mapInterventionsById`. The `mapInterventionsById` method is the focus of the example, demonstrating the use of a `Map` to store and retrieve intervention records efficiently.

Name	Status	Active
StudentInterventionUtils	Active	

Namespace Prefix	Code Coverage
	0% (0/23)

Created By	Last Modified By
Awais Syed , 9/29/2025, 2:43 AM	Awais Syed , 9/29/2025, 5:11 AM

```
1 public class StudentInterventionUtils {
2     public static void updateInterventionDate(List<Student_Intervention__c> interventions) {
3         for(Student_Intervention__c si : interventions) {
4             if(si.Status__c == 'Reviewed') {
5                 si.Intervention_Date__c = Date.today();
6             }
7         }
8     }
9     public static List<Student_Intervention__c> getRecentReviewedInterventions() {
10        return [SELECT Id, Name, Status__c, Intervention_Date__c
11                FROM Student_Intervention__c
12                WHERE Status__c = 'Reviewed'
13                ORDER BY Intervention_Date__c DESC
14                LIMIT 5];
15    }
16    public static List<SObject>> searchByName(String searchKey) {
17        return [FIND :searchKey IN Name Fields RETURNING
18                Student_Intervention__c(Id, Name),
19                Contact(Id, Name)];
20    }
21
22    // Example method using List
23    public static List<String> getInterventionNames(List<Student_Intervention__c> interventions) {
24        List<String> names = new List<String>();
25        for(Student_Intervention__c si : interventions) {
26            names.add(si.Name);
27        }
28        return names;
29    }
30    public static Set<String> getUniqueStatuses(List<Student_Intervention__c> interventions) {
31        Set<String> statuses = new Set<String>();
32        for(Student_Intervention__c si : interventions) {
33            statuses.add(si.Status__c);
34        }
35        return statuses;
36    }
37    public static Map<Id, Student_Intervention__c> mapInterventionsById(List<Student_Intervention__c> interventions) {
38        Map<Id, Student_Intervention__c> interventionsMap = new Map<Id, Student_Intervention__c>();
39        for(Student_Intervention__c si : interventions) {
40            interventionsMap.put(si.Id, si);
41        }
42        return interventionsMap;
43    }
44 }
```

## 5.6 Control Statements

**Use Case:** Control statements allow your Apex code to make decisions and repeat actions based on conditions. They guide the flow of execution in your program.

**Business Requirement:** Use conditional statements and loops to control logic in Salesforce Apex for efficient data manipulation and decision-making in your project.

### Implementation

#### Code

```
public static void updateReviewedInterventions(List<Student_Intervention__c> interventions)
{
    for(Student_Intervention__c si : interventions) {
        if(si.Status__c == 'Reviewed') {
            si.Intervention_Date__c = Date.today();
        } else {
            si.Intervention_Date__c = null;
        }
    }
}
```

**Result:** This method uses if-else control statements within a for loop to update intervention date only if status is "Reviewed".

```
17 public static List<List<SObject>> searchByName(String searchKey) {
18     return [FIND :searchKey IN Name Fields RETURNING
19         Student_Intervention__c(Id, Name),
20         Contact(Id, Name)];
21 }
22 // Example method using List
23 public static List<String> getInterventionNames(List<Student_Intervention__c> interventions) {
24     List<String> names = new List<String>();
25     for(Student_Intervention__c si : interventions) {
26         names.add(si.Name);
27     }
28     return names;
29 }
30 public static Set<String> getUniqueStatuses(List<Student_Intervention__c> interventions) {
31     Set<String> statuses = new Set<String>();
32     for(Student_Intervention__c si : interventions) {
33         statuses.add(si.Status__c);
34     }
35     return statuses;
36 }
37 public static Map<Id, Student_Intervention__c> mapInterventionsById(List<Student_Intervention__c> interventions) {
38     Map<Id, Student_Intervention__c> interventionsMap = new Map<Id, Student_Intervention__c>();
39     for(Student_Intervention__c si : interventions) {
40         interventionsMap.put(si.Id, si);
41     }
42     return interventionsMap;
43 }
44 // Example method demonstrating if-else and loop control statements
45 public static void updateReviewedInterventions(List<Student_Intervention__c> interventions) {
46     for(Student_Intervention__c si : interventions) {
47         if(si.Status__c == 'Reviewed') {
48             si.Intervention_Date__c = Date.today();
49         } else {
50             si.Intervention_Date__c = null;
51         }
52     }
53 }
54 }
```

## 5.7 Batch Apex

**Use Case:** Perform complex, long-running, or bulk operations on large sets of records asynchronously, efficiently and within Salesforce governor limits.

**Business Requirement:** Implement Batch Apex to handle tasks such as bulk data updates, data cleansing, or archiving for objects like Student Interventions when data volume is high.

### Implementation Batch Apex Class

Apex Class

StudentInterventionBatch

Help for this

[Back to List Apex Classes](#)

Apex Class Detail

EditDeleteDownloadSecurityShow Dependencies

NameStudentInterventionBatchStatusActive

Namespace PrefixCode Coverage0% (0/8)

Created ByAwais Syed , 9/29/2025, 5:39 AMLast Modified ByAwais Syed , 9/29/2025, 5:39 AM

Class BodyClass SummaryVersion SettingsTrace Flags

```
1 global class StudentInterventionBatch implements Database.Batchable<SObject> {
2
3     global Database.QueryLocator start(Database.BatchableContext BC) {
4         // Query all reviewed student interventions
5         return Database.getQueryLocator(
6             [SELECT Id, Status__c, Intervention_Date__c FROM Student_Intervention__c WHERE Status__c = 'Reviewed'
7             ]);
8     }
9
10    global void execute(Database.BatchableContext BC, List<Student_Intervention__c> scope) {
11        // Set intervention date to today for each record in current batch
12        for (Student_Intervention__c si : scope) {
13            si.Intervention_Date__c = Date.today();
14        }
15        update scope;
16    }
17
18    global void finish(Database.BatchableContext BC) {
19        // Optional finish logic here (cleanup, email alert, etc.)
20    }
21 }
```

### Run the Batch Job

- Go to Developer Console → Execute Anonymous window.
- Run: Database.executeBatch(new StudentInterventionBatch(), 200);

Logs	Tests	Checkpoints	Query Editor	View State	Progress	Problems
User	Application	Operation	Time	Status	Read	Size
Awais Syed	Unknown	Batch Apex	9/29/2025, 6:13:15 PM	Success	Unread	3.13 KB
Awais Syed	Unknown	/services/data/v64.0/tooling/executeBatch	9/29/2025, 6:13:14 PM	Success	Unread	2.76 KB
Awais Syed	Unknown	Batch Apex	9/29/2025, 6:13:14 PM	Success	Unread	3.63 KB

### Monitor the Batch Job

- Go to Setup → Apex Jobs

[Click here to go to the new batch jobs page](#)

Apex Jobs

Help for this Page

Monitor the status of all Apex jobs, and optionally, abort jobs that are in progress.

Percent of Asynchronous Apex Used: 0%

You have currently used 0 asynchronous Apex operations out of an allowed 24-hour organization limit of 250,000. To learn about how this limit is calculated and what contributes to it, see the Lightning Platform Apex Limits topic.

View: All

Create New View

Action	Submitted Date	Job Type	Status	Status Detail	Total Batches	Batches Processed	Failures	Submitted By	Completion Date	Apex Class	Apex Method	Apex Job ID
	9/29/2025, 5:43 AM	Batch Apex	Completed		0	0	0	Syed_Awais	9/29/2025, 5:43 AM	StudentInterventionBatch		707gl.00000EzfTR

**Result:** Batch Apex allows efficient, manageable processing of large datasets asynchronously, avoiding resource limits and providing robust data operations for your Salesforce project.

### 5.8 Queueable Apex

**Use Case:** Process complex asynchronous operations with more flexible job chaining than Future Methods. Queueable Apex allows for chaining jobs and offers more control over asynchronous processing.

**Business Requirement:** Use Queueable Apex to handle asynchronous tasks like callouts, chaining large jobs, or deferring processing without blocking the user interface.

#### Key Points

- Implements Queueable interface.
- Supports complex job chaining.
- Better than Future Methods with enhanced features.

### 5.9 Scheduled Apex

**Use Case:** Run Apex code at scheduled times, such as nightly batch jobs or periodic data cleanup tasks.

**Business Requirement:** Schedule regular automated jobs in Salesforce, such as daily student data updates, reminders, or reports.

#### Key Points

- Implements Schedulable interface.
- Use cron expressions to specify schedule.
- Can call batch or queueable jobs within scheduled jobs.

### 5.10 Future Methods

**Use Case:** Execute long-running operations asynchronously to improve user experience during transactions, such as making callouts.

**Business Requirement:** Handle deferred processing without slowing down immediate user actions, run fire-and-forget jobs.

#### Key Points

- Annotated with `@future`.
- No chaining support.
- Good for simple async tasks like callouts.

### 5.11 Exception Handling

**Use Case:** Manage errors and exceptional conditions gracefully in Apex code to avoid unhandled failures and log for traceability.

**Business Requirement:** Implement robust error handling to improve reliability and maintainability in Salesforce projects.

### Key Points

- Use try, catch, finally blocks.
- Use custom exception classes where needed.
- Log exceptions or notify admins appropriately.

### 5.12 Test Classes

**Use Case:** Ensure code reliability and quality by writing automated test classes to verify that Apex classes and triggers work as expected.

**Business Requirement:** Test classes must cover at least 75% of the Apex code and validate the logic correctness before deployment to production.

### Implementation Understanding

- Use the `@isTest` annotation to define test classes and methods.
- Create test data within test methods to simulate real use cases.
- Use `Test.startTest()` and `Test.stopTest()` to wrap code execution for accurate measurement.
- Use `System.assert` statements to verify expected results.

The screenshot shows the Salesforce Apex Class Detail page for the class `StudentInterventionUtilsTest`. The page includes a header with the class name and a "Help for this Page" link. Below the header, there are tabs for "Apex Class Detail", "Class Summary", "Version Settings", and "Trace Flags". The "Apex Class Detail" tab is active, showing the class name, namespace prefix, last modified by, and status. The "Class Body" tab is also active, displaying the source code of the test class. The code includes annotations for test execution and assertions.

```
1 @isTest
2 private class StudentInterventionUtilsTest {
3     @isTest static void testGetRecentReviewedInterventions() {
4         List<Student_Intervention__c> interventions = new List<Student_Intervention__c>();
5         for (Integer i = 0; i < 5; i++) {
6             interventions.add(new Student_Intervention__c() {
7                 Status__c = 'Reviewed',
8                 Intervention_Date__c = Date.today().addDays(-i)
9             });
10        }
11        insert interventions;
12        Test.startTest();
13        List<Student_Intervention__c> result = StudentInterventionUtils.getRecentReviewedInterventions();
14        Test.stopTest();
15        System.assertEquals(5, result.size(), 'Should return 5 interventions');
16    }
17    @isTest static void testUpdateInterventionDate() {
18        List<Student_Intervention__c> interventions = [SELECT Id, Status__c FROM Student_Intervention__c LIMIT 5];
19        Test.startTest();
20        StudentInterventionUtils.updateInterventionDate(interventions);
21        Test.stopTest();
22        for (Student_Intervention__c si : interventions) {
23            if (si.Status__c == 'Reviewed') {
24                System.assertNotEquals(null, si.Intervention_Date__c, 'Date should be updated');
25            }
26        }
27    }
28 }
```

**Run Tests:** Setup → Apex Test Execution, select your test class and run all tests.



**Result:** By running test classes, you ensure robust Apex code, catching errors early and meeting Salesforce deployment requirements.

### 5.13 Asynchronous Processing

**Use Case:** Handle operations asynchronously to improve system performance and user experience by processing tasks in the background without blocking user interactions.

**Business Requirement:** Use asynchronous Apex to efficiently manage operations such as long-running processes, bulk data updates, scheduled jobs, and chained operations based on project needs.

Type	Description	Use Case	Implement When
Batch Apex	Processes large volumes of records asynchronously in batches	Large data volume processing	Bulk operations, scheduled jobs
Queueable Apex	Flexible async jobs with chaining support	Advanced async logic requiring chaining	Complex background jobs
Scheduled Apex	Runs Apex at scheduled intervals	Regular automation tasks	Periodic data processing
Future Methods	Simple fire-and-forget async operations	Callouts, simple async without chaining	Simple async tasks

## **Overview of Asynchronous Apex Options**

### **Benefits**

- Improves performance by delegating heavy tasks to background processing.
- Helps maintain system limits by processing in manageable chunks.
- Enables chaining of job logic for complex workflows.
- Supports scheduling for automated maintenance and reporting.

### **Conclusion**

This phase focused on mastering Apex programming essentials including SOQL/SOSL queries, collections, control statements, and test classes. It also introduced asynchronous processing concepts to handle complex and bulk operations efficiently in Salesforce.

Implementing these core skills ensures robust, maintainable, and performant Apex code that meets business needs and aligns with Salesforce best practices.

The foundation built in this phase significantly empowers subsequent development phases by enabling dynamic data handling, efficient logic flow, error management, and scalable background processing.

## Phase 6: User Interface Development

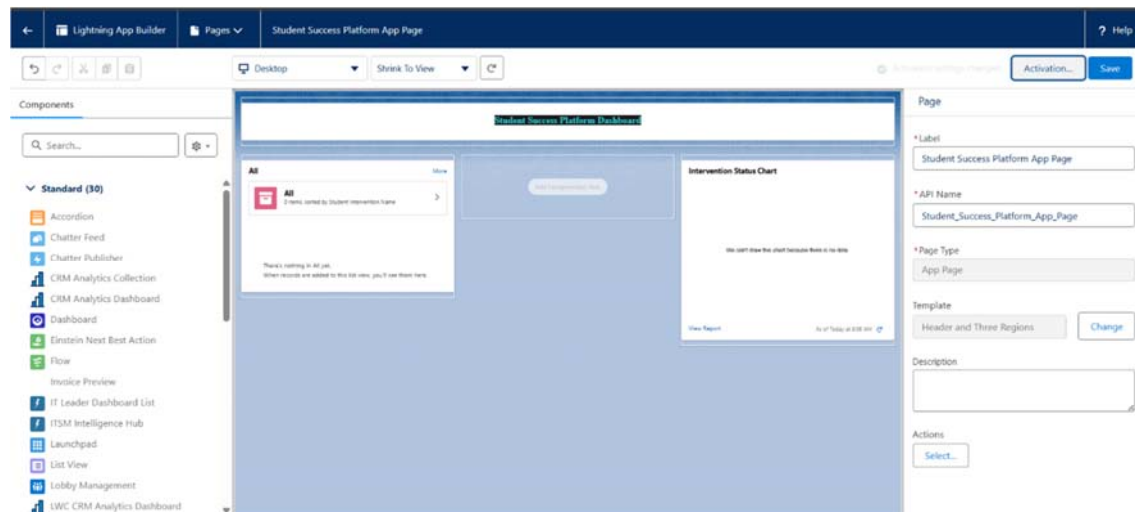
### CONNECT Student Success Platform - Salesforce CRM Implementation

#### 6.1 Lightning App Builder

**Use Case:** The Lightning App Builder was used to create a centralized Student Success Platform Dashboard. This dashboard provides quick access to Student Intervention records and visual status overviews, empowering users to track and manage interventions efficiently.

##### Implementation Summary:

- Created a new Lightning App Page named "Student Success Platform App Page" using the "Header and Three Regions" template.
- Header region displays the dashboard title using a Rich Text component.
- Left region contains a List View showing up to 5 Student Interventions for fast access.
- Right region displays a Report Chart visualizing Intervention Status statistics (based on the "Intervention Status Chart" report).
- Middle region is currently left empty (reserved for future custom components or infographics).
- The page was activated as org default for all users to make it easily accessible.



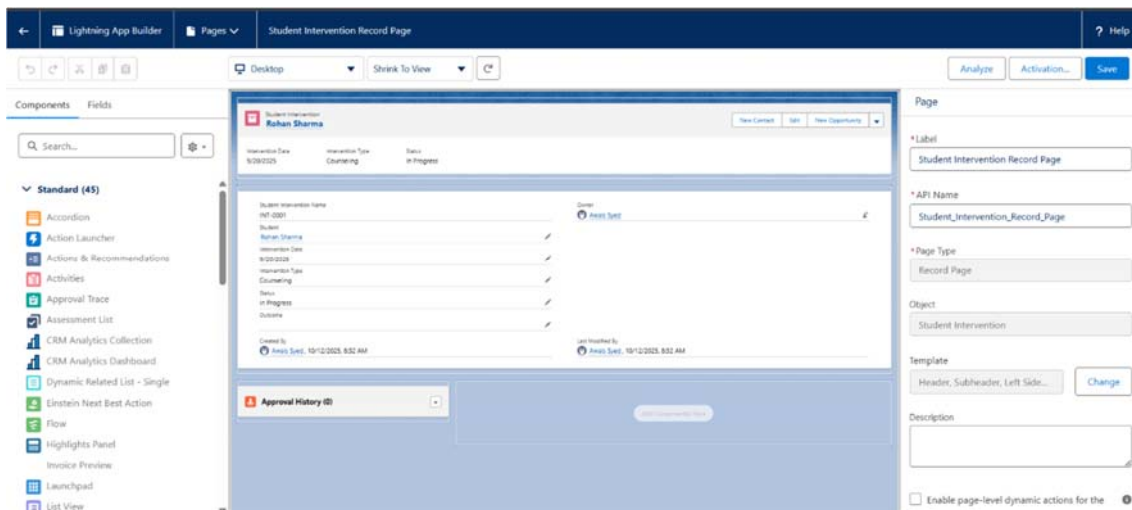
#### 6.2 Record Pages

**Use Case:** A custom Lightning Record Page was designed for the "Student Intervention" object. This page provides a clean and focused view for users to manage and track individual Student Intervention details and related actions.

##### Implementation Summary:



- Created a new Lightning Record Page named "Student Intervention Record Page" using the "Header, Subheader, Left Sidebar" template.
- Top region displays a Highlights Panel to show key details and important actions related to the record.
- The main middle region contains the "Record Detail" component, displaying all Student Intervention fields for review and editing.
- Bottom left region is set with the "Approval History" component to show any approval actions, making workflow easier to manage.
- The right region is left empty for now, keeping the page layout simple and neat for users.
- The page was activated as the app default for the "Developer Edition" app, so all users see this design when viewing a Student Intervention record.

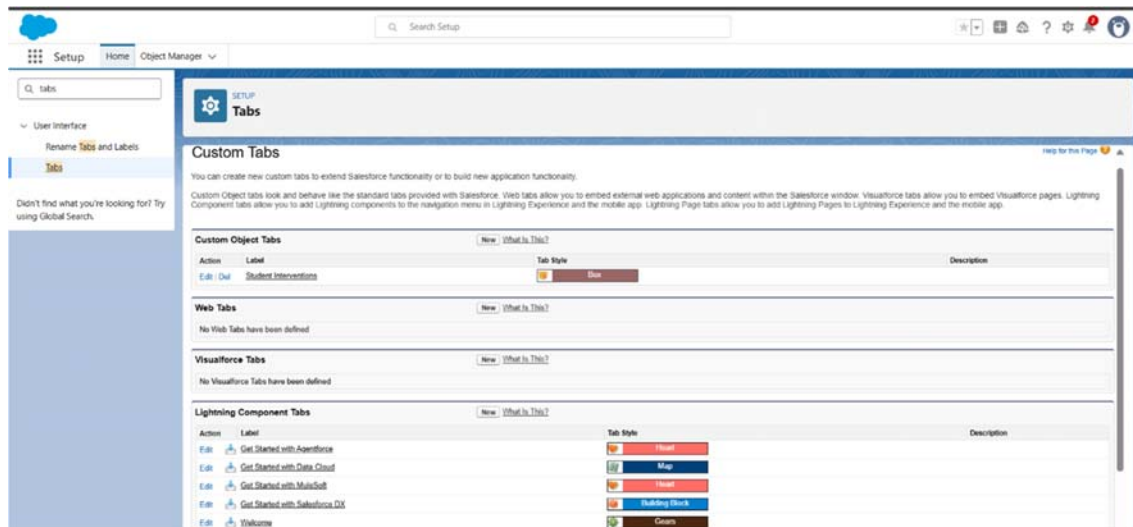


### 6.3 Tabs

**Use Case:** A custom tab was created for the Student Intervention object so users can easily find and open Student Intervention records from the Salesforce navigation bar.

#### Implementation Summary:

- Opened Salesforce Setup and navigated to Tabs (from the left Setup menu).
- Confirmed the existence of the "Student Interventions" tab under Custom Object Tabs, making the object accessible in the main app navigation.
- No new tab creation was needed because the tab already existed for the object.
- This tab allows quick user access to Student Intervention records directly from the Salesforce interface, supporting efficient workflow and faster record lookup.

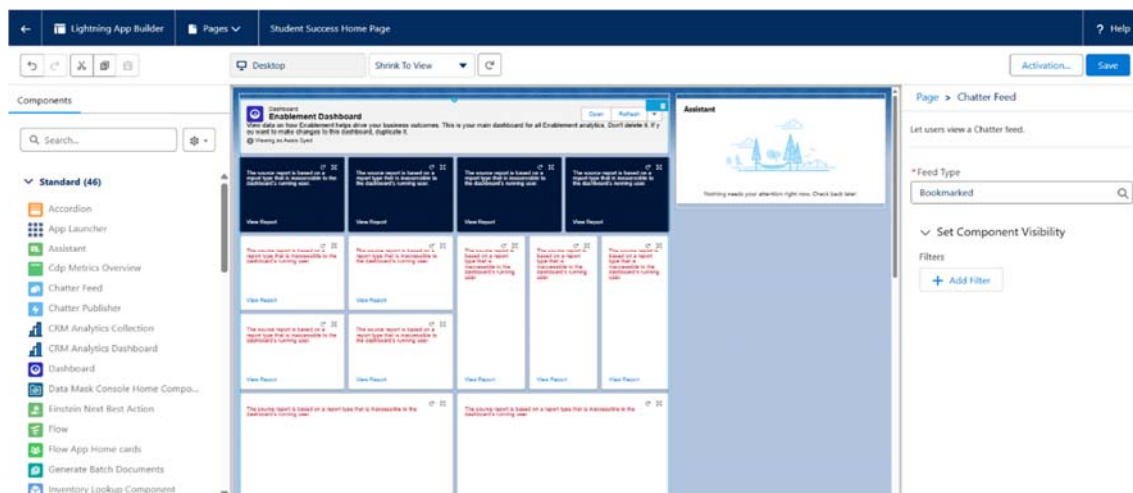


## 6.4 Home Page Layouts

**Use Case:** A custom Salesforce Home Page was created to help users quickly view the most important student success information and to assist them in taking fast action on urgent tasks as soon as they log in.

### Implementation Summary:

- Opened Lightning App Builder and created a new Home Page named "Student Success Home Page" using the "Standard Home Page" template.
- The first top section was set to display a Dashboard for important statistics and visual insights.
- The second top section displays the Assistant component for reminders and suggestions.
- Bottom regions are used for components like Recent Items and (optionally) Chatter Feed or Report Chart, helping users find data and updates quickly.
- After layout design, the Home Page was saved and activated as the default for the main Salesforce app, ensuring all users see the new layout on login.



## 6.6. Lightning Web Components (LWC)

**Use Case:** A custom Lightning Web Component (LWC) was created to show a welcome message. This teaches the basics of creating, deploying, and displaying a new UI component using Salesforce's modern LWC framework.

### Implementation Steps:

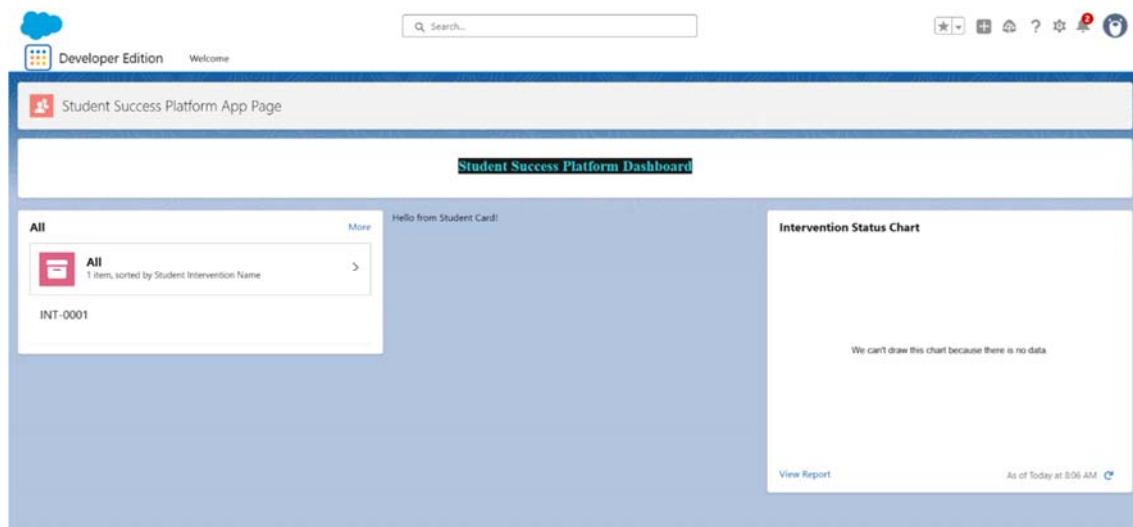
- Opened **Visual Studio Code** and installed the Salesforce Extension Pack for LWC development.
- Used SFDX: Create Project and SFDX: Authorize an Org commands to connect to the Salesforce org from VS Code.
- Ran SFDX: Create Lightning Web Component and gave the component the name studentCard.
- Edited studentCard.html to display:

```
<template>
```

```
  <h1>Hello from Student Card!</h1>
```

```
</template>
```

- Set isExposed to "true" in studentCard.js-meta.xml and enabled the component for App, Record, and Home Pages.
- Deployed (SFDX: Deploy Source to Org) the new LWC to Salesforce.
- Opened the **Lightning App Builder** and selected an App Page with open sections.
- Dragged the studentCard LWC onto the empty (middle) region of the custom App Page, then saved and activated the page.
- Confirmed that the message, "Hello from Student Card!", appeared in Salesforce as expected.



## 6.7. Apex with LWC

**Use Case:** This step shows how to connect a Lightning Web Component (LWC) to a Salesforce Apex class, so LWC can display data or messages coming from Apex (the server).

### Implementation Steps:

#### 1. Create the Apex Class

- In VS Code, right-click the **classes** folder found under force-app/main/default.
- Select **SFDX: Create Apex Class** and name it StudentHelper.
- Code: public with sharing class StudentHelper {  
    @AuraEnabled(cacheable=true)  
    public static String getWelcomeMessage() {  
        return 'Welcome from Apex!';  
    }  
}
- Save and deployed (right-click > "SFDX: Deploy Source to Org").

#### 2. Add Apex Call in LWC JavaScript

- In studentCard.js, update code:

```
import { LightningElement, wire } from 'lwc';  
  
import getWelcomeMessage from '@salesforce/apex/StudentHelper.getWelcomeMessage';  
  
export default class StudentCard extends LightningElement {  
    welcomeMessage;  
  
    @wire(getWelcomeMessage)  
    wiredMsg({ data, error }) {  
        if (data) {  
            this.welcomeMessage = data;  
        } else if (error) {  
            this.welcomeMessage = 'Apex error';  
        }  
    }  
}
```

- Save and deploy.

#### 3. Change HTML to Display Apex Data

- In studentCard.html, use:

```
<template>
```

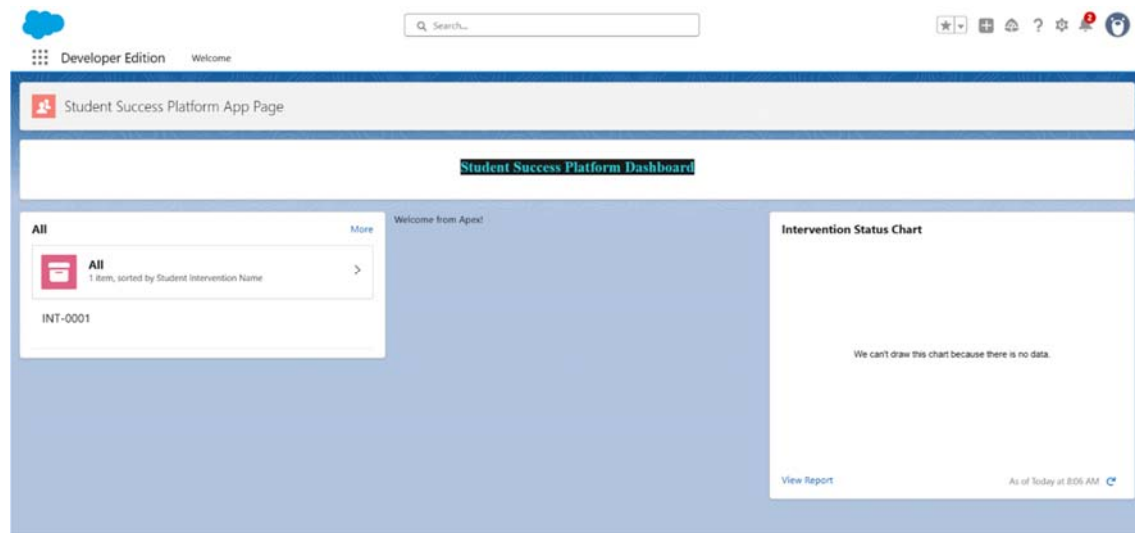
```
<h1>{welcomeMessage}</h1>
```

```
</template>
```

- Save and deploy.

#### 4. Test and Validate

- Open the App Page in Salesforce.
- Confirm that the LWC displays **"Welcome from Apex!"** from your Apex class, proving that the connection works.



#### 6.8. Events in LWC

**Use Case:** Show how Lightning Web Components handle user events (like button clicks) to update what the user sees on the page.

##### Implementation Steps:

##### 1. Edit LWC HTML to Add Button

- Open studentCard.html and update:

```
<template>
```

```
<h1>{welcomeMessage}</h1>
```

```
<button onclick={handleButtonClick}>Click Me!</button>
```

```
<p>{buttonMessage}</p>
```

```
</template>
```

- This creates a button and a text area for feedback when the button is clicked.

## 2. Add Event Handling in JS

- Open studentCard.js and update:

```
import { LightningElement, wire } from 'lwc';

import getWelcomeMessage from '@salesforce/apex/StudentHelper.getWelcomeMessage';

export default class StudentCard extends LightningElement {

  welcomeMessage;

  buttonMessage = '';

  @wire(getWelcomeMessage)
  wiredMsg({ data, error }) {

    if (data) {

      this.welcomeMessage = data;

    } else if (error) {

      this.welcomeMessage = 'Apex error';

    }

  }

  handleButtonClick() {

    this.buttonMessage = 'Hello from Student Card!';

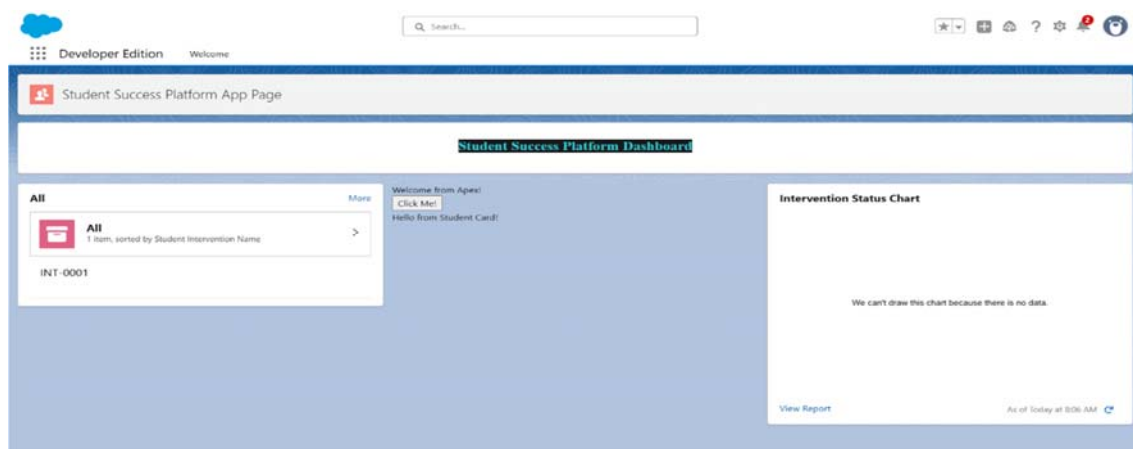
  }

}
```

- This code sets a new message when the button is clicked.

## 3. Deploy to Salesforce

- Right-click the studentCard folder in VS Code and choose **SFDX: Deploy Source to Org** to update the component.



## 6.9. Wire Adapters

**Use Case:** Wire adapters are used to pull live Salesforce data into Lightning Web Components without writing any Apex. This step makes the UI dynamic and personal by fetching information directly, such as the logged-in user's name.

### Implementation Steps:

#### 1. Open and Edit studentCard.js

- Add these imports at the top:

```
import { LightningElement, wire } from 'lwc';
```

```
import { getRecord } from 'lightning/uiRecordApi';
```

```
import USER_ID from '@salesforce/user/Id';
```

```
import getWelcomeMessage from '@salesforce/apex/StudentHelper.getWelcomeMessage';
```

- Specify fields to retrieve:

```
const FIELDS = ['User.Name'];
```

- Update the class to use wire with the record API and add handle for button event:

```
export default class StudentCard extends LightningElement {
```

```
  welcomeMessage;
```

```
  buttonMessage = '';
```

```
  userName;
```

```
  @wire(getWelcomeMessage)
```

```
  wiredMsg({ data, error }) {
```

```
    if (data) {
```

```
      this.welcomeMessage = data;
```

```
    } else if (error) {
```

```
      this.welcomeMessage = 'Apex error';
```

```
    }}
```

```
  @wire(getRecord, { recordId: USER_ID, fields: FIELDS })
```

```
  userRecord({ error, data }) {
```

```
    if (data) {
```

```
      this.userName = data.fields.Name.value;
```

```

} else if (error) {
    this.userName = 'Error loading user';
} }
handleButtonClick() {
    this.buttonMessage = 'Hello from Student Card!';
}
}

```

## 2. Edit studentCard.html to Display Data

- Use this HTML to show all values:

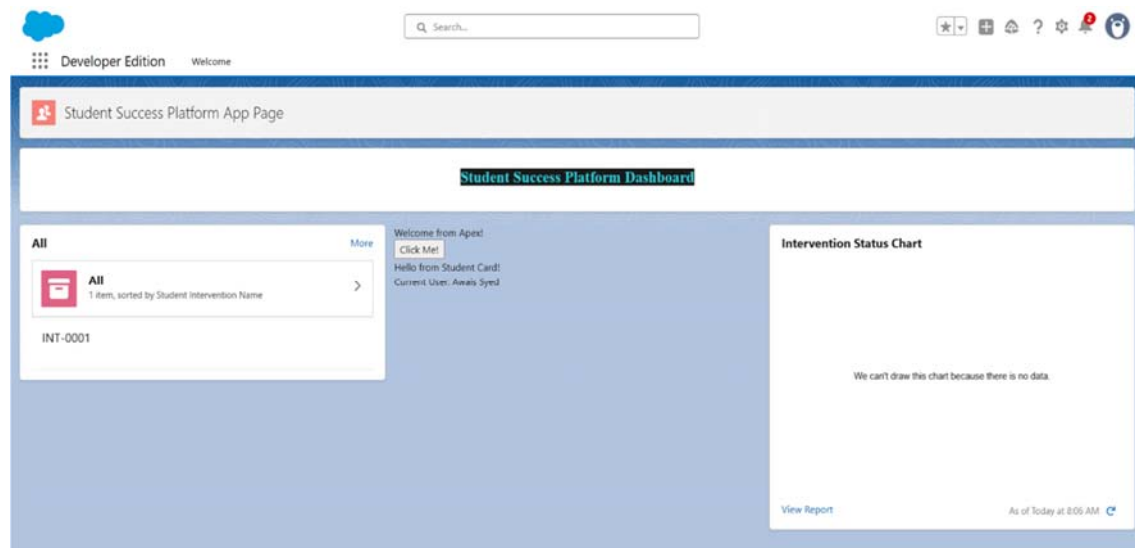
```

<template>
<h1>{welcomeMessage}</h1>
<button onclick={handleButtonClick}>Click Me!</button>
<p>{buttonMessage}</p>
<p>Current User: {userName}</p>
</template>

```

## 3. Deploy and Test

- Save and deploy your LWC to Salesforce.
- Refresh the App Page; you should see your welcome message, a button, the event message, and now the current user's name pulled live from Salesforce.



## 6.10. Imperative Apex Calls



**Use Case:** This step shows how to execute Apex code only when a button is clicked (instead of auto-refresh). Useful when you want to control exactly when server interactions happen.

### Implementation Steps:

#### 1. Add to Apex Class:

```
@AuraEnabled  
  
public static String getHelloImperative() {  
    return 'Hello from Imperative Apex!';  
}
```

#### 2. Add to LWC JS:

```
import getHelloImperative from '@salesforce/apex/StudentHelper.getHelloImperative';
```

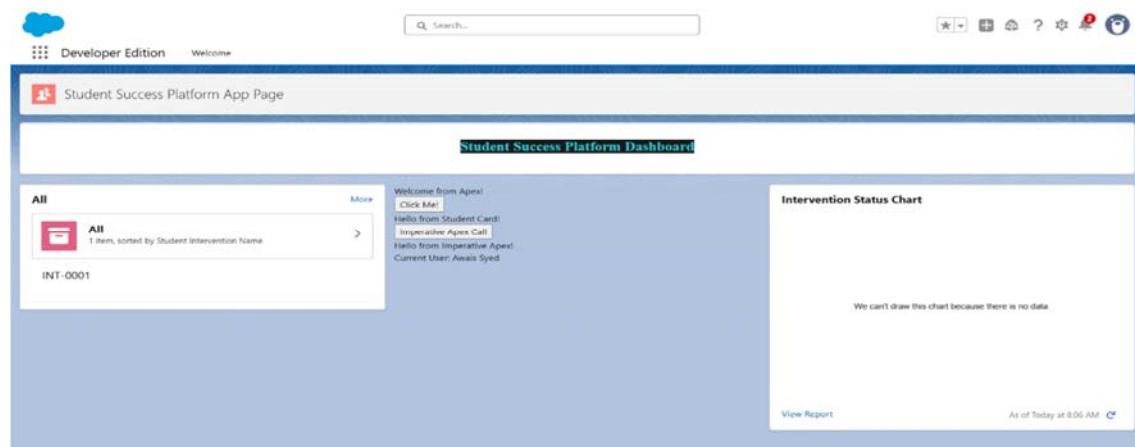
*// in your export default class:*

```
imperativeMessage = "";  
  
async handleImperativeClick() {  
    try {  
        const result = await getHelloImperative();  
        this.imperativeMessage = result;  
    } catch (error) {  
        this.imperativeMessage = 'Error from imperative call';  
    }  
}
```

#### 3. Add to LWC HTML:

```
<button onclick={handleImperativeClick}>Imperative Apex Call</button>
```

```
<p>{imperativeMessage}</p>
```



## 6.11. Navigation Service

**Use Case:** When the button is clicked, the user jumps straight to their User record, showing how to add navigation power to any LWC in Salesforce.

### Implementation Steps:

1. Add Navigation Service Code in JS:

```
import { NavigationMixin } from 'lightning/navigation';

// Inside your class...

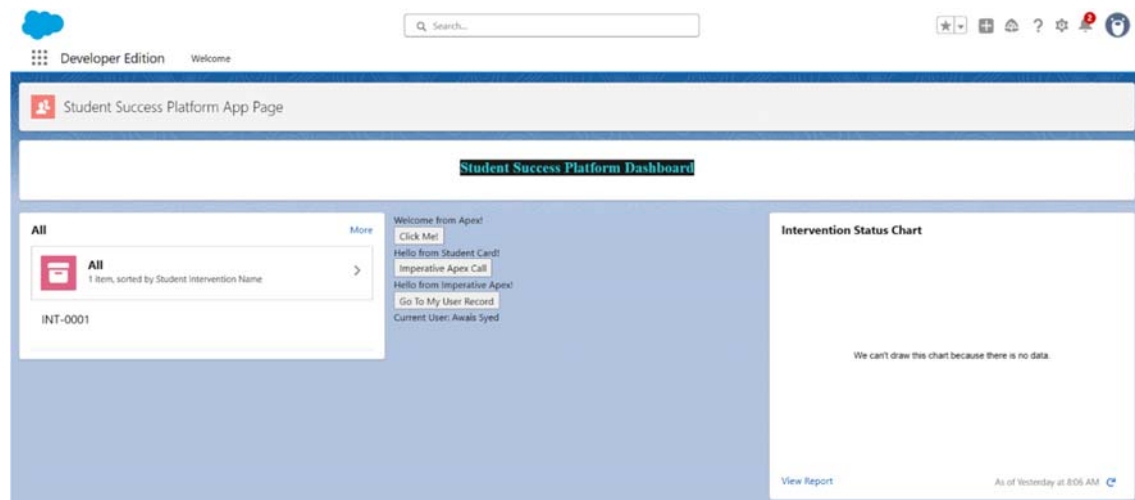
handleNavigate() {
    this[NavigationMixin.Navigate]({
        type: 'standard__recordPage',
        attributes: {
            recordId: USER_ID,
            objectApiName: 'User',
            actionName: 'view'
        }
    });
}
```

2. Add Button for Navigation in HTML:


```
<button onclick={handleNavigate}>Go To My User Record</button>
```







3. Deploy and Test


Clicking the button sends the user to their User record in Salesforce, using the Navigation Service.




Navigated to User record,


Developer Edition
Welcome





Awaiz Syed



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## Phase 7: Integration & External Access

### CONNECT Student Success Platform - Salesforce CRM Implementation

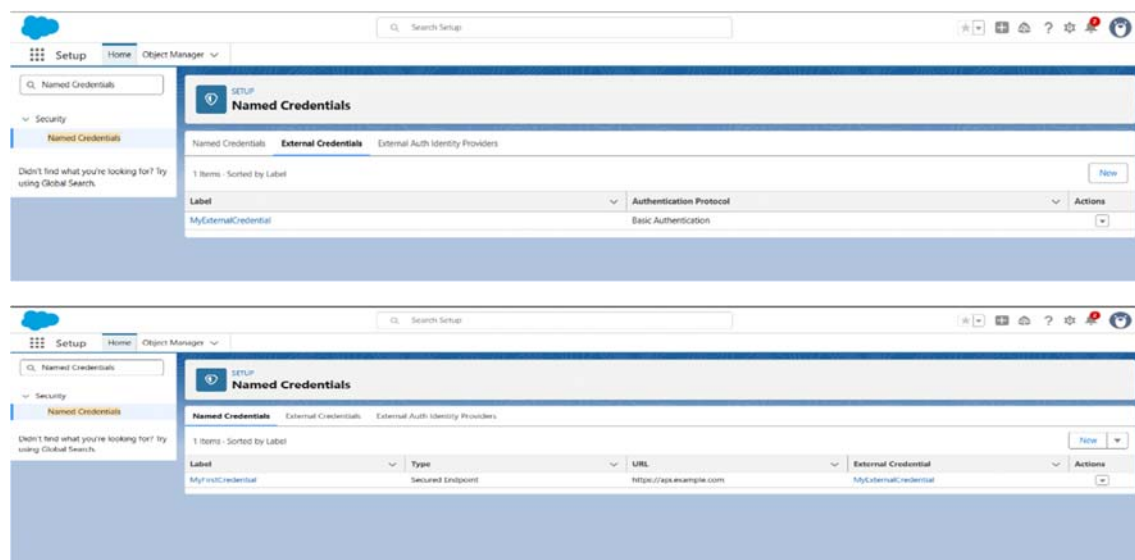
#### 7.1 Named Credentials

**Use Case:** To securely connect Salesforce to an external system or API, make API calls, and hide sensitive secrets like usernames and passwords by using "Named Credentials".

#### Implementation Steps:

1. Go to Setup → Type Named Credentials in the Quick Find box → Click Named Credentials.
2. Click the External Credentials tab → Click New → Fill in:
  - Label: MyExternalCredential
  - Name: MyExternalCredential
  - Authentication Protocol: Basic Authentication → Click Save.
3. Go back to the Named Credentials tab → Click New → Fill in:
  - Label: MyFirstCredential
  - Name: MyFirstCredential
  - URL: <https://api.example.com>
  - External Credential: Select MyExternalCredential
  - Enabled for Callouts: ON
  - Leave other settings as default → Click Save.

**Result:** This new Named Credential is now ready and linked to your External Credential. Salesforce can now safely connect to external APIs using this secure setup.



## 7.2 External Services

**Use Case:** External Services allow Salesforce to connect with any external REST API (like a Student Information System), so actions from that API can be used in Flow Builder and other automation tools in Salesforce without writing code.

### Implementation Steps:

1. Go to Setup → Type "External Services" in the Quick Find box → Click **External Services**.
2. Click **Add an External Service**.
3. On "Select an API Source" page, click **From API Specification** → Click **Next**.
4. On "Provide Registration Details":
  - External Service Name: Write a name (for example, "StudentInfoAPI").
  - Description: Write what this service does.
  - Service Schema: Choose "Absolute URL".
  - URL: Paste the link to a valid OpenAPI/Swagger JSON specification file.
  - Select a Named Credential: Pick the Named Credential already set up.
  - If you see an error about the URL, add that API site to "Remote Site Settings" (Setup → Remote Site Settings → New Remote Site).
5. Return to the registration screen and click **Save & Next**.
6. Review the detected operations from your API specification file. Click **Done**.

Now the external API's actions are available for use in Flow Builder and other process tools with simple drag & drop. You can test the connection by using one of the new Flow Actions provided by the external service.

**Result:** The external API appears as a registered service, and its operations become "invocable actions" in Salesforce Flows. This makes it easy to automate business processes that use data or actions from other systems, all without custom code.

## Phase 7.3: Web Services (REST/SOAP)

**Use Case:** Web Services (REST and SOAP) in Salesforce allow your org to expose special endpoints that other applications or platforms can access in order to create, modify, or fetch Salesforce records directly. Common use cases include connecting Salesforce with external apps, portals, or systems that need real-time data or automation.

### Why Not Implemented

This phase is not included in your implementation since the current project does not require Salesforce to "publish" its own APIs for others to consume. All needed integrations involve

Salesforce acting as the client, not the server. For this project, using Named Credentials and External Services for calling out to APIs is enough.

### **How to Implement in Future**

If future requirements need exposing Salesforce endpoints, you can:

- Use Apex REST (@RestResource Annotation) to create RESTful endpoints.
- Use Apex SOAP (with webservice methods) and generate WSDL files for clients.
- Use platform REST/SOAP APIs to give access to standard objects.

Both methods support authentication via OAuth and session tokens for secure integration.

### **Tools & Features**

- Apex classes and annotations (@RestResource for REST, webservice for SOAP).
- Workbench or Postman for testing.
- WSDL/XML for SOAP publishing; JSON for REST.

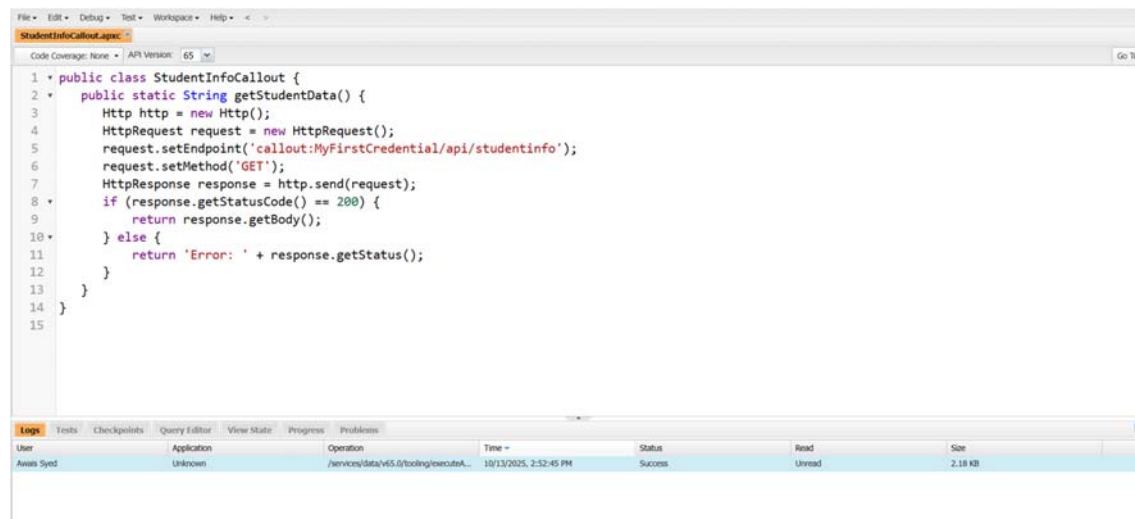
## **7.4: Callouts**

**Use Case:** Callouts in Salesforce enable your org to send HTTP requests to external systems or APIs to get or send data, trigger processes, or access external resources from Apex code or Flows. This is essential whenever Salesforce needs to "call out" to external services for integration and automation.

### **Implementation Steps:**

1. Configure **Named Credentials** to securely store endpoint URLs and authentication (already done in Phase 7.1).
2. Create an **Apex class** to perform HTTP callouts using Named Credentials.
3. Use the following Apex classes for callouts:
  - HttpRequest and HttpResponse for sending and receiving HTTP messages.
  - Http class to send requests.
4. Invoke these callouts in Apex triggers, batch classes, or expose them as invocable methods to Flows.
5. Add corresponding **Remote Site Settings** for external URLs if not using Named Credentials.
6. Test your callouts thoroughly with debug logs or the Execute Anonymous Apex window.

**Result:** Successful callouts enable real-time integration where Salesforce communicates with external APIs, bringing external data/actions into Salesforce processes. This allows building seamless automation across multiple systems without manual data entry or custom middleware.



```
1 public class StudentInfoCallout {
2     public static String getStudentData() {
3         Http http = new Http();
4         HttpRequest request = new HttpRequest();
5         request.setEndpoint('callout:MyFirstCredential/api/studentinfo');
6         request.setMethod('GET');
7         HttpResponse response = http.send(request);
8         if (response.getStatusCode() == 200) {
9             return response.getBody();
10        } else {
11            return 'Error: ' + response.getStatusCode();
12        }
13    }
14 }
15
```

User	Application	Operation	Time	Status	Read	Size
Awaits Synd	Unknown	/services/data/v65.0/tooling/executeA...	10/13/2025, 2:52:45 PM	Success	Unread	2.18 KB

## 7.5 Platform Events

**Use Case:** Platform Events are part of Salesforce's event-driven architecture. They allow different systems to communicate by publishing and subscribing to event messages in real-time. Platform Events help integrate Salesforce with external apps or different Salesforce components asynchronously.

### Why Not Implemented:

This project does not require real-time event messaging or event-driven automation between Salesforce and external systems or internal components. The current integration scope is handled via callouts and external services which suffice for synchronous data exchange.

### How to Implement in Future

- Define a Platform Event object in Setup → Platform Events.
- Add custom fields for event data.
- Publish events using Apex, Process Builder, Flow, or external API.
- Subscribe to events asynchronously using Apex triggers, flows, or external listeners.
- Platform Events support event delivery guarantee and can scale across systems.

### Tools and Features

- Platform Events object type with custom fields
- EventBus Apex class for publishing

- Event triggers and platform event-triggered flows for subscription
- Pub/Sub API for external event management

## **7.6 Change Data Capture (CDC)**

**Use Case:** Change Data Capture (CDC) in Salesforce enables tracking of record changes (create, update, delete, undelete) on standard and custom objects in near real-time. It helps keep external systems synchronized with Salesforce data by publishing change events to subscribed clients, supporting efficient and scalable data integration and notifications.

### **Why Not Implemented:**

The current project scope doesn't require near real-time synchronization of Salesforce data changes with external systems or complex event-driven data flows. Existing integrations using callouts and external services suffice for syncing needed data.

### **How to Implement in Future**

- Enable CDC in Setup under "Change Data Capture" and select objects to track.
- Subscribe to change events using Apex triggers, CometD clients, or Streaming API.
- Process change events to replicate or act upon data changes in external systems.
- Use CDC for high volume, scalable and near real-time integration scenarios.
- Monitor CDC event usage and subscriptions for performance tuning.

### **Tools and Features**

- Setup UI for enabling CDC on objects
- Apex triggers on change events
- Streaming API with CometD for external consumption
- Event monitoring and diagnostics dashboards

## **7.7 Salesforce Connect**

**Use Case:** Salesforce Connect enables seamless real-time integration between Salesforce and external data systems by allowing users to view, search, and modify data stored outside Salesforce without importing it. It is ideal when data resides in enterprise systems like ERPs or legacy databases and needs to be accessed directly within Salesforce for up-to-date and accurate information without duplication.

### **Why Not Implemented:**

The current project scope does not require working with large external data systems or real-time external data viewing within Salesforce UI. Existing integration methods like callouts and external services are sufficient for current data access and manipulation needs.

### **How to Implement in Future**



- Use Salesforce Connect to create External Objects representing external data models.
- Set up adapters like OData, Cross-Org, or Apex Custom Adapter depending on the external system.
- Configure authentication and permissions to access external data sources.
- Use External Objects in Salesforce UI, reports, Apex, and process automation as if native.
- Leverage features like external object relationships, indirect lookups, and mobile support.
- Manage external data efficiently with no local data storage cost or synchronization lag.

### **Tools and Features**

- External Objects definition and management in Setup.
- Various adapters: OData 2.0/4.0, Cross-Org, Apex Custom Adapter.
- Support for Salesforce reports, dashboards, Flows, Apex, searches, and metadata deployment.
- Robust relationships and real-time data virtualization for external data.

### **7.8 API Limits**

**Use Case:** API limits in Salesforce manage and control the number of API calls your organization can make to ensure optimal system performance and fair resource sharing. These limits affect all REST, SOAP, Bulk, and connected app integrations, helping avoid overloads and ensuring system stability.

#### **Important API Limits:**

- **Daily API Request Limit:** The total number of API calls allowed in a rolling 24-hour period, depending on your edition and licenses.
- **Concurrent API Request Limit:** Maximum number of simultaneous long-running API requests (over 20 seconds).
- **Timeout Limits:** API calls have a timeout limit (e.g., 10 minutes for REST/SOAP).
- **Monthly API Entitlement:** Aggregated daily limits over 30 days for long-term monitoring.
- Limits vary by org type (Developer, Enterprise, Sandbox) and license count.

#### **Monitoring and Management:**

- Monitor API usage on Setup's **System Overview** and **Company Information** pages.
- Use **API Usage Notifications** to alert admins when usage reaches specific thresholds.

- Review API limits and usage via REST API /limits resource.
- Understand error codes like REQUEST\_LIMIT\_EXCEEDED to handle exceeded limits gracefully.
- Plan and purchase additional API calls proactively to meet integration demands.

### **Why Not a Concern Now**

The current project does not require a high volume of API calls exceeding standard limits. Basic monitoring and normal API quota are sufficient for the scope.

### **7.9 OAuth & Authentication**

**Use Case:** OAuth and Authentication are essential for secure integrations, enabling Salesforce to safely access external systems or allowing external apps to securely access Salesforce data. OAuth provides token-based authorization without exposing credentials, supporting standards like OAuth 2.0 for Single Sign-On, Connected Apps, and API access.

#### **Why Not Implemented:**

This project does not require complex custom OAuth authentication schemes or building external apps that access Salesforce directly. Current integrations rely on Named Credentials and external services which internally manage authentication securely, making direct OAuth implementation unnecessary at this stage.

#### **How to Implement in Future**

- Create Connected Apps in Salesforce Setup for external authentication.
- Use OAuth flows (Authorization Code, JWT Bearer, etc.) depending on client type.
- Configure appropriate scopes, permissions, and callbacks.
- Implement OAuth in custom integrations needing delegated user permission or external SSO.
- Monitor and rotate tokens periodically for security.

#### **Tools and Features**

- Connected Apps to register external applications.
- OAuth 2.0 Protocol support for REST/SOAP API access.
- Single Sign-On (SSO) configuration.
- Named Credentials with OAuth for token management.

### **7.10 Remote Site Settings**

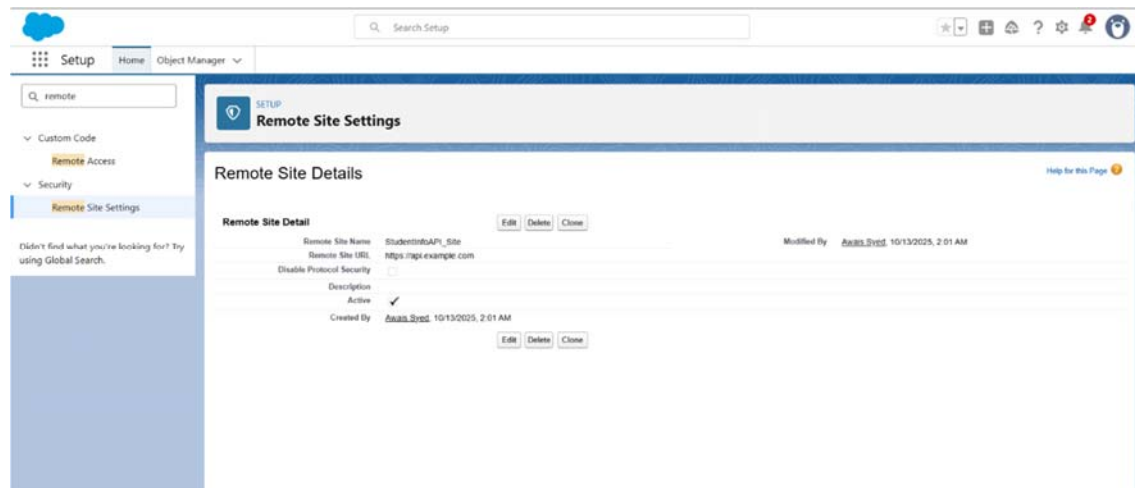
**Use Case:** Remote Site Settings allow Salesforce to securely call external web services by authorizing outbound callouts to specific URLs. This prevents unauthorized data exposure and

protects Salesforce from malicious callouts. Any external endpoint Salesforce interacts with must be registered here or via Named Credentials to succeed.

### Implementation Steps:

1. Go to Setup → Search for **Remote Site Settings** in Quick Find → Select **Remote Site Settings**.
2. Click **New Remote Site**.
3. Fill in:
  - **Remote Site Name:** Unique name like "StudentInfoAPI".
  - **Remote Site URL:** Base URL of the external API endpoint.
  - Optionally add a description.
4. Click **Save**.

**Result:** Once configured, Salesforce will allow callouts to the registered remote site, enabling Apex, Flows, or External Services to communicate with external APIs securely without callout errors.



## Phase 8: Data Management & Deployment

### CONNECT Student Success Platform - Salesforce CRM Implementation

#### 8.1.Data Import Wizard

**Use Case:** The Data Import Wizard in Salesforce is used to efficiently import data records into both standard and custom objects without the need for technical expertise. This phase involved importing the provided Indian-origin sample data into custom objects for the Student Success Platform, such as Academic Progress, Student Feedback, Peer Partnership, and Student Intervention. The goal was to populate Salesforce with initial data for operational and reporting use.

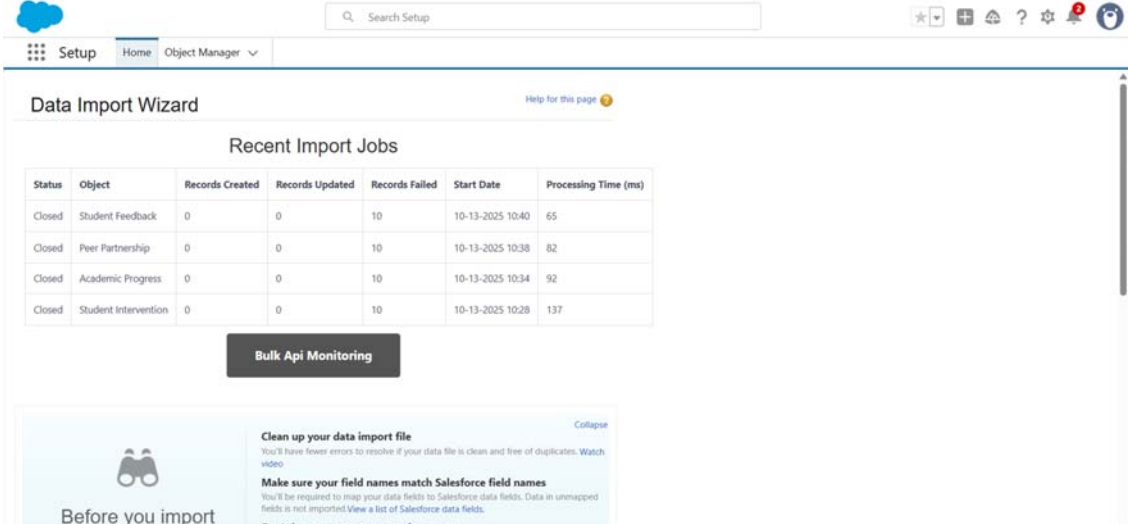
#### Implementation Steps:

1. **Prepare CSV Files** - Created CSV files matching Salesforce custom objects with Indian-origin data records.
2. **Access the Data Import Wizard**  
→ Go to Setup → Quick Find "Data Import Wizard" → Open Data Import Wizard.
3. **Launch Wizard**  
→ Click *Launch Wizard* button.
4. **Select Object to Import**  
→ Choose *Custom Objects* tab → Select target custom object (e.g., Student Intervention).
5. **Choose Import Action**  
→ Select *Add new records* action → Click *Next*.
6. **Upload CSV File**  
→ Choose the corresponding CSV file (e.g., student\_intervention\_import.csv) → Click *Next*.
7. **Map Fields**  
→ Verify and edit field mappings from CSV columns to Salesforce fields.
8. **Start Import**  
→ Confirm mappings and start import → Wait for confirmation.
9. **Monitor Results**  
→ Check status and details in *Bulk Data Load Jobs* → Review success and error logs.
10. **Repeat for Each Object**  
→ Perform steps 4-9 for other objects: Academic Progress, Student Feedback, Peer Partnership.

#### Result:

- Data import successfully completed for all four custom objects.

- Records created in Salesforce with relevant relationships and accurate field mappings.
- Import errors occurred but were reviewed and adjusted as part of the learning process.
- Salesforce now contains populated data ready for platform operations, workflows, and reporting.



The screenshot shows the Salesforce Setup page with the 'Data Import Wizard' section active. The 'Recent Import Jobs' table lists four completed imports, all with a status of 'Closed' and 10 records failed. Below the table is a 'Bulk API Monitoring' button. A 'Before you import' section provides tips on cleaning up data files and matching field names.

Status	Object	Records Created	Records Updated	Records Failed	Start Date	Processing Time (ms)
Closed	Student Feedback	0	0	10	10-13-2025 10:40	65
Closed	Peer Partnership	0	0	10	10-13-2025 10:38	82
Closed	Academic Progress	0	0	10	10-13-2025 10:34	92
Closed	Student Intervention	0	0	10	10-13-2025 10:28	137

**Before you import**

- Clean up your data import file**  
You'll have fewer errors to resolve if your data file is clean and free of duplicates. [Watch video](#)
- Make sure your field names match Salesforce field names**  
You'll be required to map your data fields to Salesforce data fields. Data in unmapped fields is not imported. [View a list of Salesforce data fields.](#)
- Don't import too many records at once**

## 8.2 Data Loader

**Use Case:** Salesforce Data Loader is a desktop application used to import, update, export, and delete large amounts of data in Salesforce records efficiently. It is mainly used for bulk data management, such as migrating thousands or millions of records, cleaning up data, or extracting data for reporting purposes.

### When It Is Used:

- When working with very large data sets (50,000+ records), or up to millions of records at once.
- When importing into objects or fields not supported by the Data Import Wizard.
- For scheduling regular data loads (like nightly or weekly imports and exports).
- When complex field mappings or frequent data operations are needed.
- For exporting data for backups or migrating data between Salesforce orgs.

### Advantages:

- Can handle very large volumes of data quickly and efficiently.
- Supports all objects—standard and custom.
- Allows field mapping and upsert operations (insert/update at once).

- Can schedule and automate data management tasks.
- Offers detailed success/error logs for troubleshooting.
- More flexibility and control than the Data Import Wizard.

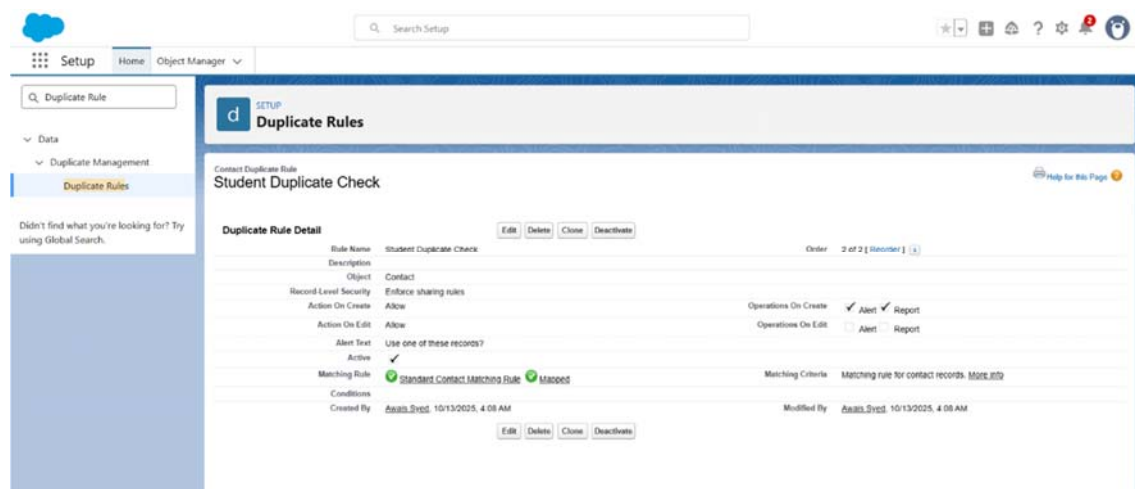
### 8.3 Duplicate Rules

**Use Case:** Duplicate Rules are used in Salesforce to help keep data clean by identifying and managing duplicate records when users create or edit Contacts, Leads, Accounts, or other objects. This prevents confusion, wasted effort, and bad reporting by ensuring each person or account only exists once in the system.

#### Implementation Steps:

- A rule named **Student Duplicate Check** was created for the **Contact** object.
- **Enforce sharing rules** was selected for security.
- On create, Salesforce allows saving duplicates, but shows an alert and includes cases in duplicate reports.
- Standard Contact Matching Rule was selected (checks fields like name, email, and phone).
- The rule was saved and activated, now working for the whole org.

**Result:** Now, when a user tries to create a new Contact that looks similar to an existing one, Salesforce will display a warning asking: "Use one of these records?" and the system will log duplicate cases for reporting. This improves data quality and prevents unnecessary duplicate records.



### 8.4 Data Export & Backup

**Use Case:** The Data Export & Backup feature in Salesforce is used to keep regular copies of all important data. If data is lost, damaged, or needs to be moved to another system,

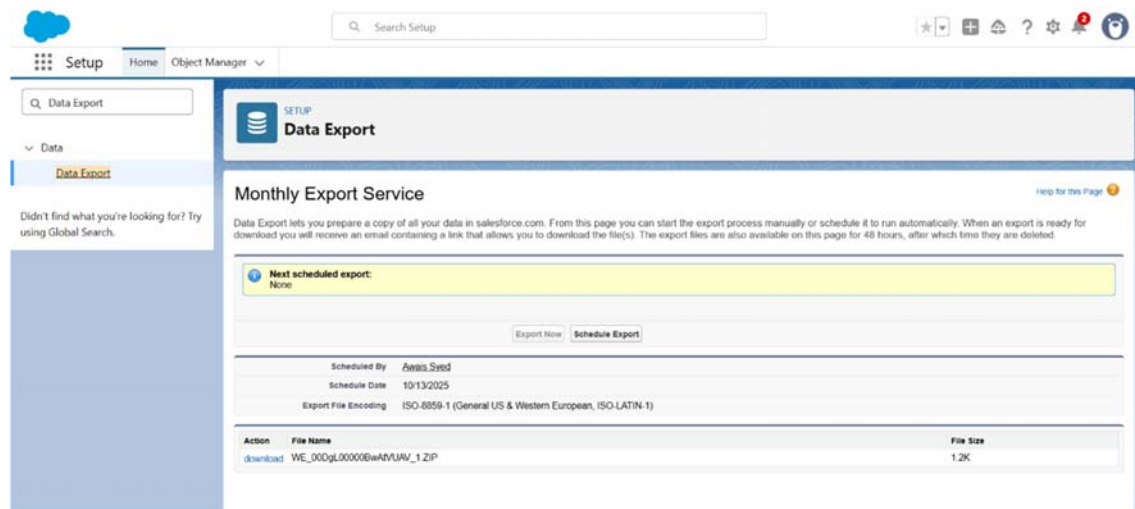
these backup files help you recover everything easily. This protects the organization from losing student, academic, or feedback information.

### Implementation Steps:

1. Go to **Setup** and search for **Data Export** under Data Management.
2. Click **Export Now** for a manual backup, or **Schedule Export** to set up automatic backups.
3. Select the custom objects you want to back up, such as **Academic Progress, Student Feedback, Peer Partnership, Student Intervention**.
4. Click **Start Export**. Wait for Salesforce to prepare the files.
5. Download the ZIP file when ready. Store it in a safe folder named with today's date (like "SalesforceBackup-20251013.zip").

**Result:** Your Salesforce data from selected objects is now saved in a backup ZIP file.

If something ever happens to your data, you can restore it using these CSV files, keeping your records safe and secure.



## 8.5 Change Sets

**Use Case:** Change Sets in Salesforce are used to move customizations and development work between connected orgs (e.g., from sandbox to production). They do not move data, only metadata (like custom fields, objects, automations, page layouts, etc.), supporting team-based and multi-org project management.

### Implementation Steps:

Not needed for this single-org data management and configuration project. If your team works in a sandbox and needs to transfer customizations to production, then follow these steps:

- In Setup, search "Change Sets" and select "Outbound Change Sets".
- Create a new outbound change set; add components (fields, layouts, etc.) to the change set.
- Upload to the target org; in the target org, navigate to "Inbound Change Sets" and deploy.

**Result:**

No Change Sets are created or deployed for this project, because all work is completed inside one org.

## 8.6 Unmanaged vs Managed Packages

**Use Case:** Salesforce packages help developers bundle custom objects, fields, apps, and Apex code for sharing or selling. **Managed Packages** are locked for editing and used for commercial, upgradeable app delivery. **Unmanaged Packages** allow full editing and are mainly for internal, free, or one-off distribution.

**Implementation Steps:**

No steps required for this project, because everything is managed in a single org and there is no need to distribute or install packages.

- If building components to share, you would:
  - Go to Setup → **Create Package**
  - Choose **Unmanaged** or **Managed**
  - Add components like custom objects, fields, Visualforce pages, etc.
  - Upload/share or install in another org

**Result:**

No packages (managed or unmanaged) are included or installed for this work, as the project does not require distributing code or components to other Salesforce orgs.

## 8.7 ANT Migration Tool

**Use Case:** The ANT Migration Tool is used for moving metadata (such as custom objects, fields, layouts, Apex code, etc.) between Salesforce orgs or between a local directory and a Salesforce org using the command line. It is helpful for automating large or repeatable deployments, managing metadata source control, or when certain components are not supported by Change Sets.

**How to Use:**

**1. Prerequisites:**

- Install Java (at least version 1.7 or above).
- Download and install Apache Ant on your computer.



- Download the ANT Migration Tool (zip) from Salesforce.
2. **Set Up Environment Variables:**
    - Set ANT\_HOME (your Ant installation path).
    - Set JAVA\_HOME (your JDK installation path).
  3. **Configure the Tool:**
    - Unzip both Apache Ant and the ANT Migration Tool.
    - Copy the ant-salesforce.jar file from the tool's zip into Ant's lib directory.
  4. **Prepare for Deployment:**
    - Set up a build.properties file with your Salesforce credentials and org details.
    - Create a build.xml file, which contains the Ant scripts for retrieve/deploy tasks.
    - Create a package.xml file listing the metadata components to retrieve or deploy.
  5. **Typical Deployment Steps:**
    - To retrieve metadata from a source org:  
Run ant retrieveCode
    - To deploy metadata to a target org:  
Run ant deployCode
    - To delete components, add a destructiveChanges.xml and run deploy as above.
  6. **Download and Logs:**
    - Download logs after each deployment to verify which components were successfully moved and fix any deployment errors.

## **Important Note**

- **The ANT Migration Tool is retired as of Spring '24. It still works for now, but Salesforce recommends switching to Salesforce CLI (SFDX) for modern and supported deployments.**

## **Advantages**

- Automates deployments using scripts.
- Supports components not available with Change Sets.
- Good for continuous integration and large/developer teams.
- Allows deleting metadata, not just deploying.
- Works for unrelated Salesforce orgs, not just sandboxes.

This tool is mainly useful for advanced or team-based Salesforce development, but for most admin-level or single-org work, ANT Migration Tool is not required.

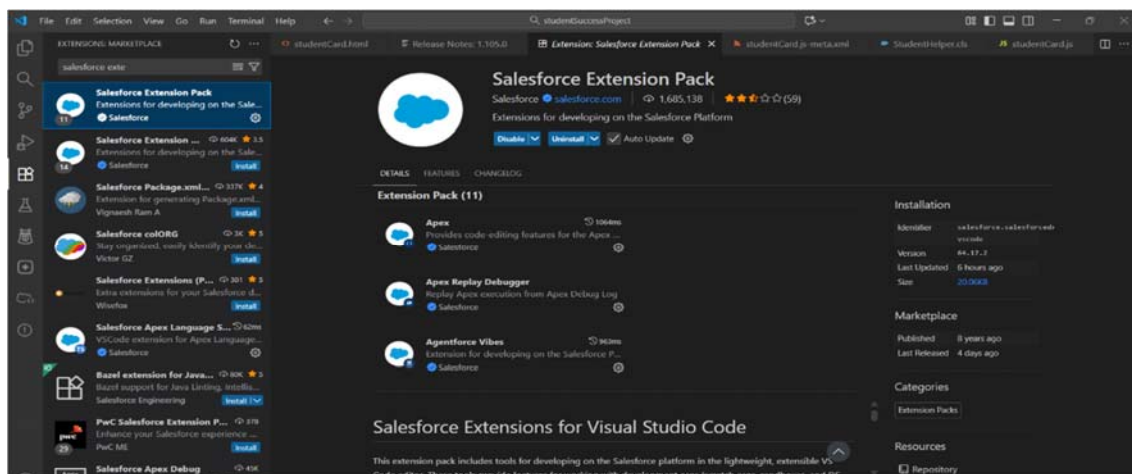
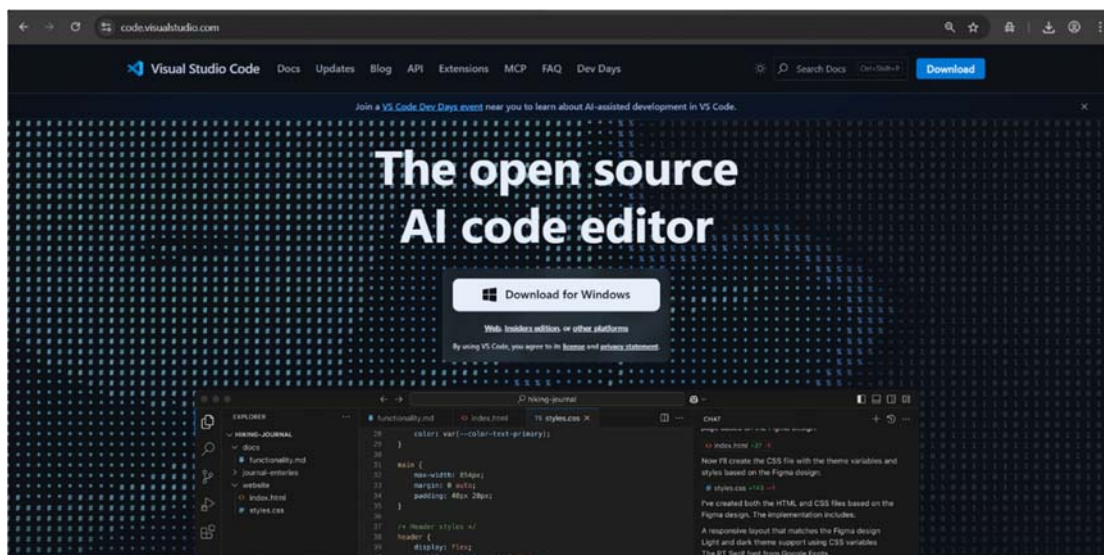
## 8.8 VS Code & SFDX

**Use Case:** Visual Studio Code (VS Code) with Salesforce SFDX (Salesforce Developer Experience/CLI) is used by Salesforce developers to write code, manage metadata, automate deployments, version control, and debug complex logic in a modern, powerful environment. It enables fast coding, easy management of big projects, and integration with source control like Git. It's the main tool for creating Lightning Web Components, Apex classes, triggers, and bulk configuration changes.

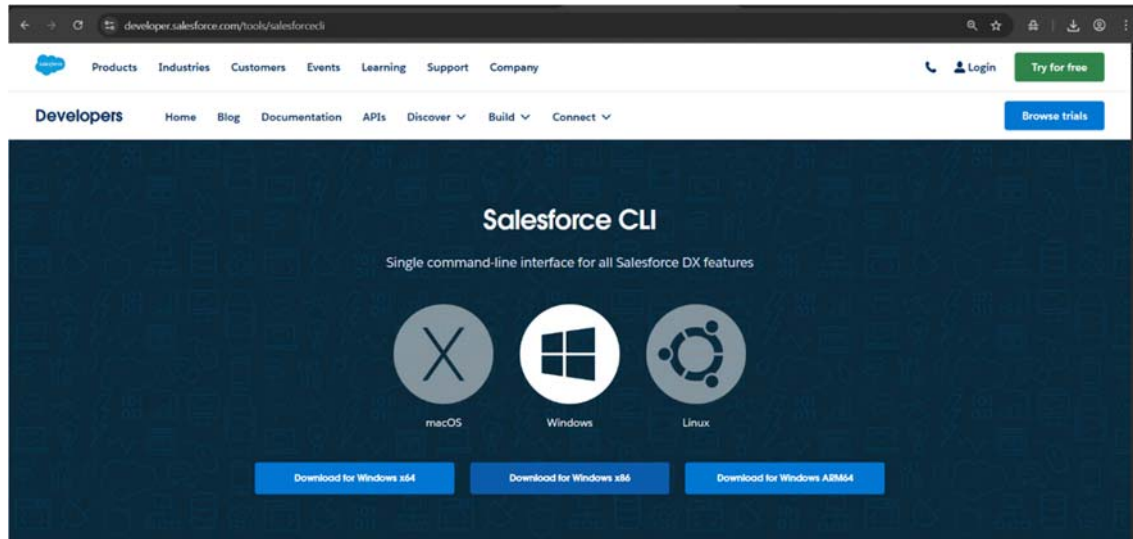
### How to Use:

#### 1. Set Up VS Code and SFDX:

- Download and install VS Code for your operating system.
- Install the Salesforce Extension Pack from the VS Code marketplace (search and click Install).

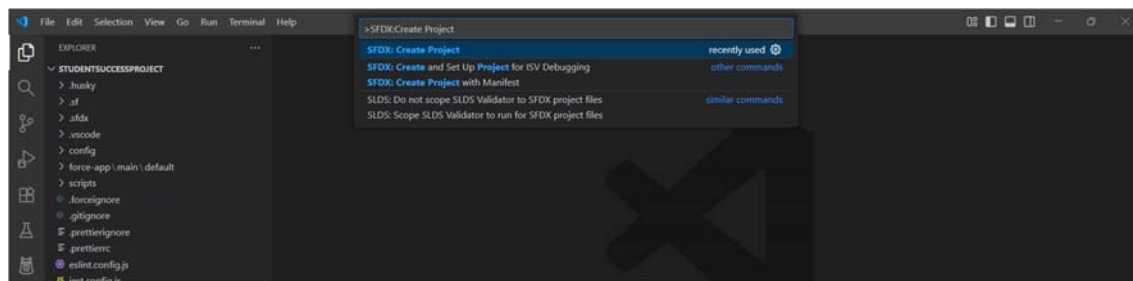


- Download and install Salesforce CLI (SFDX) for interacting with Salesforce from the command line.



## 2. Create a Salesforce DX Project:

- Open VS Code.
- Press Ctrl+Shift+P to open the Command Palette.
- Type and select **SFDX: Create Project with Manifest** or `sf project generate --name MyProject`.
- Enter a project name and location. VS Code will create standard folders for code, config, and manifest files.



## 3. Authorize and Connect to Salesforce Org:

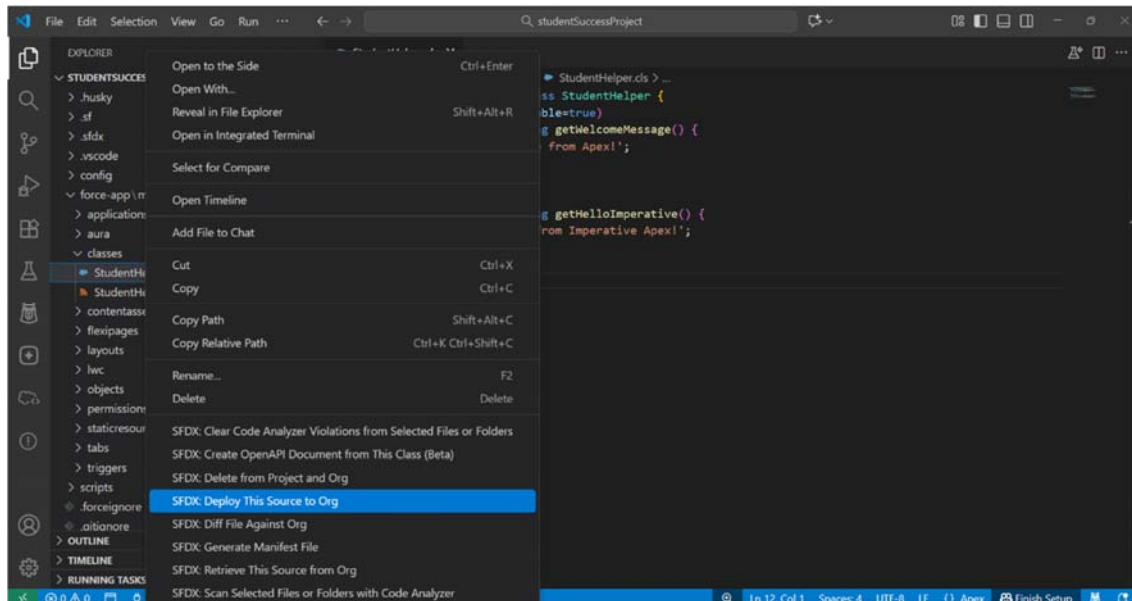
- Press Ctrl+Shift+P, type **SFDX: Authorize an Org** and follow the browser prompts to log in.

## 4. Retrieve Metadata from Org:

- Edit the package.xml file in the manifest folder to specify which components to pull.
- Right-click package.xml → select **SFDX: Retrieve This Source from Org**.

## 5. Develop and Deploy:

- Use VS Code to write code (Apex, LWC, Aura, triggers).
- Right-click files or folders and choose **SFDX: Deploy This Source to Org** to send your code and metadata to Salesforce.



## 6. Run SOQL/SOSL Queries:

- Highlight a query in your code, open the Command Palette, select **SFDX: Execute SOQL Query**, and view results in Output tab.

## 7. Version Control and Automation:

- Initialize a Git repository for your project using the built-in VS Code tools.
- Commit and push changes to keep project versions safe and easy to collaborate.

## Extra Features

- Built-in interactive debugger for Apex code, making error-finding easy.
- Automatic syntax highlighting and suggestions.
- Supports scratch org and sandbox development for testing changes safely.
- Automation: Write deployment scripts and CI/CD workflows using SFDX commands.

VS Code & SFDX are the most modern tools for Salesforce development and admin automation, making the platform easy to customize, scale, and manage for all types of users.

## Phase 9: Reporting, Dashboards & Security Review

### CONNECT Student Success Platform - Salesforce CRM Implementation

#### 9.1 Reports

**Use Case:** Reports in Salesforce help users and admins view, track, and analyze data stored in custom and standard objects. They support smart decision-making by summarizing key information (such as student interventions, feedback, or progress) in clear tables and visualizations. Different report formats (Tabular, Summary, Matrix, Joined) offer flexible ways to organize and understand data for operational, strategic, and compliance needs.

#### Implementation Steps:

##### 1. Navigate to Reports Tab

- Click the **App Launcher (grid icon)** at the top left.
- Search and select **Reports**.

##### 2. Create Tabular Report

- Click **New Report**.
- Type and select **Student Interventions** as the report type.
- Click **Continue**.
- Ensure no groupings; remove any if present.
- Drag relevant fields (e.g., Name, Intervention Date, Status, Student) into the columns area.
- Click **Save** and name the report (e.g., "Student Interventions - Tabular").
- Click **Run** to display results.

##### 3. Create Summary Report

- Start as above with a New Report for Student Interventions.
- In the builder, drag a group field (e.g., Status) to the "Group Rows" section.
- Add columns as needed.
- Add summary calculations if available.
- Save and Run the report as above.

##### 4. Add Pie Chart to Report

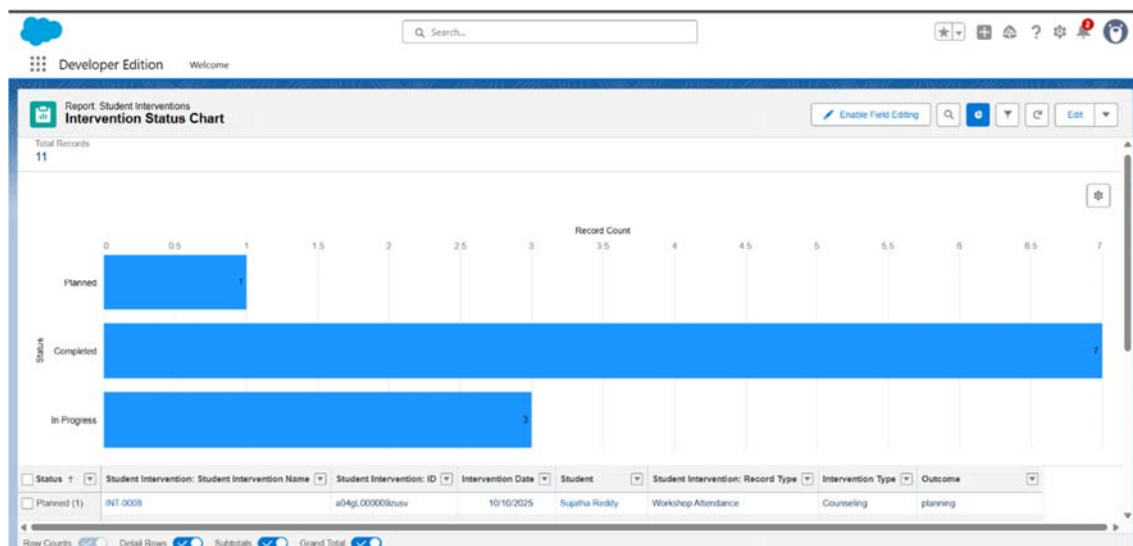
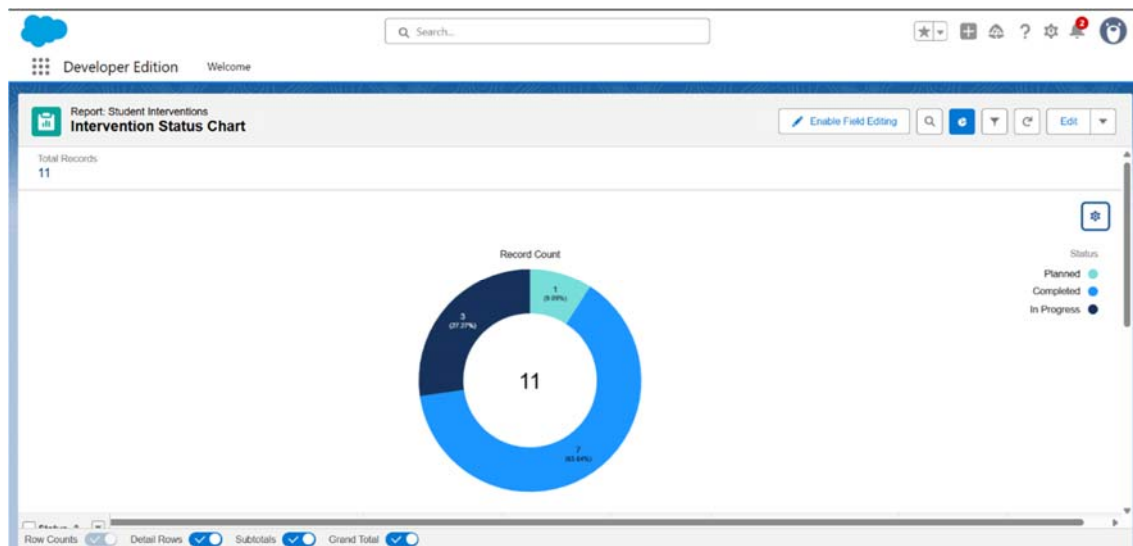
- Open a Summary report.
- Click **Add Chart** (top right, looks like a bar graph).
- Select **Pie Chart** in the chart panel.

- Customize chart title, labels, or percentages as needed.
- Save the report.

5. *(Matrix and Joined Reports can be created following similar steps by adding row and column groups, or multiple report blocks, respectively.)*

### Result and Benefits:

- You now have tabular and summary reports that display your Student Interventions data in clear tables and grouped summaries.
- Adding a Pie Chart gives a quick visual overview of distribution, such as how many interventions are completed versus in progress.
- Reports help spot trends and gaps in student support and make your database instantly useful for managers and staff.



Developer Edition Welcome

Report: Student Interventions  
Intervention Status Chart

Enable Field Editing

Status	Student Intervention: Student Intervention Name	Student Intervention: ID	Intervention Date	Student	Student Intervention: Record Type	Intervention Type	Outcome
Planned (1)	INT-0008	a04gl.000009zuwv	10/10/2025	Sujatha Reddy	Workshop Attendance	Counseling	planning
Subtotal							
Completed (7)	INT-0010	a04gl.000009zual	10/9/2025	Suma Polekha	Counseling Session	Counseling	Improved my knowledge
	INT-0002	a04gl.000009zuWL	9/18/2025	Rama Devi	Counseling Session	Counseling	Very Good Counseling
	INT-0011	a04gl.000009zv4D	10/13/2025	Bala Lamba	Counseling Session	Workshop	Average
	INT-0003	a04gl.000009zuZz	10/2/2025	Atzal Khan	Counseling Session	Counseling	Best Experience
	INT-0005	a04gl.000009zujF	10/5/2025	Vanshi Krishna	Counseling Session	Counseling	Brilliant
	INT-0006	a04gl.000009zumT	9/29/2025	Muskan Muskan	Workshop Attendance	Workshop	Best Experience
	INT-0007	a04gl.000009zue5	10/7/2025	Saleem Uddin	Workshop Attendance	Workshop	Amazing
Subtotal							
In Progress (3)	INT-0001	a04gl.000009zKZ3	9/20/2025	Rohan Sharma	Counseling Session	Counseling	-
	INT-0004	a04gl.000009zueP	10/5/2025	Vanshi Krishna	Counseling Session	Counseling	-
	INT-0009	a04gl.000009zuw9	10/11/2025	Naveen Kumar	Counseling Session	Referral	Good
Subtotal							
Total (11)							

Row Counts: Detail Rows: Subtotals: Grand Total:

## 9.2 Report Types

**Use Case:** Custom Report Types in Salesforce let users create new ways to view and report on data, combining information from one main object (like Student Interventions) and its related objects (like Activities). This is useful when off-the-shelf report types don't show exactly what is needed for tracking school progress, performance, or relationships between objects.

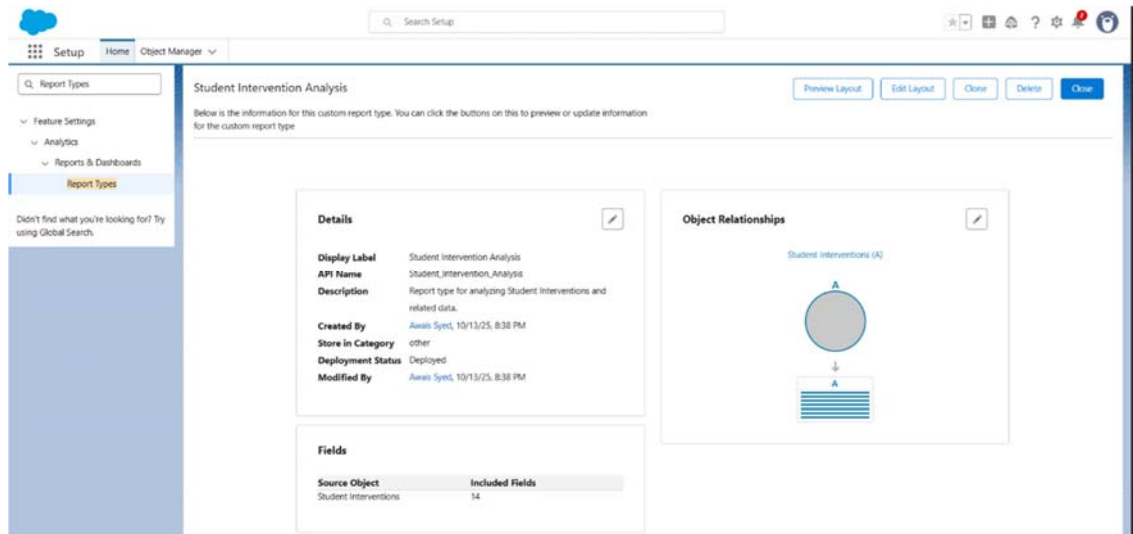
### Implementation Steps:

- Go to Setup**  
→ Click the gear icon (Setup) in the top right.
- Find Report Types**  
→ In the left sidebar, type and select "Report Types".
- Create New Custom Report Type**  
→ Click **New Custom Report Type** at top right.  
→ Select the **Primary Object** (for example, Student Interventions).  
→ Fill in Display Label, API Name, Description, and Category.  
→ Set Status to "Deployed".
- Add Related Objects (Optional)**  
→ Click "Click to relate another object".  
→ Choose a related object (e.g., Activities).  
→ Select the relationship type (Inner/Outer Join).  
→ Add more if needed.
- Save the Report Type**  
→ Click "Save".
- View/Edit the New Report Type**  
→ Review the Report Type's details page.

### Result and Benefits:



- A custom report type lets the organization create advanced reports tailored for specific needs, combining objects and fields not available in standard report types.
- This supports more flexible reporting, deeper insights, and improved data-driven decisions for teachers, admins, or managers.



### 9.3 Dashboards

**Use Case:** Dashboards in Salesforce are used to visually track and monitor key metrics, trends, and detailed data from multiple reports in a single view. The "Student Progress Dashboard" helps users (like teachers or admins) quickly see how student interventions are progressing, what types are most common, and any students needing the most support, all in one place.

#### Implementation Steps:

##### 1. Go to Dashboards

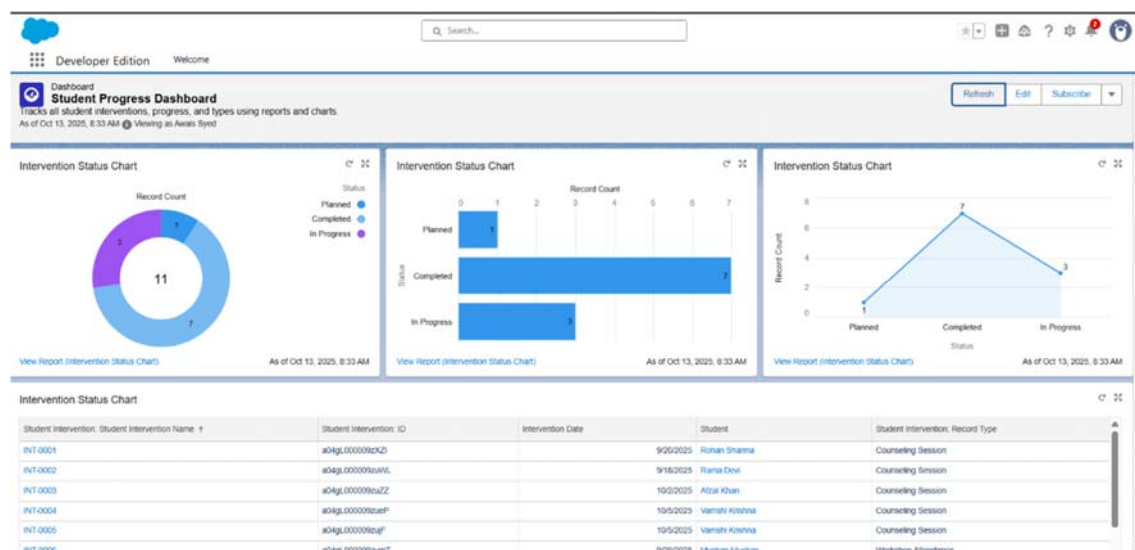
- Click the App Launcher (grid icon) → search and select **Dashboards**.

##### 2. Create New Dashboard

- Click **New Dashboard** button
- Enter the Dashboard Name: "Student Progress Dashboard", add a Description (e.g., "Tracks all student interventions, progress, and types using reports and charts.")
- Choose a folder (e.g., "Private Dashboards" for practice; select a public folder to share)
- Choose "Me" for "View Dashboard As" if only viewing yourself, or "The dashboard viewer" to personalize for each user.
- Click **Save**.

##### 3. Add Components





## 9.4 Dynamic Dashboards

**Use Case:** Dynamic Dashboards in Salesforce let each user see dashboard data using their own access and security permissions. This keeps information safe and private, while still giving everyone a real-time view of reports that matter to their work. Schools, businesses, or any team can ensure team members only see what they need, avoiding unwanted access to sensitive records.

### Implementation Steps:

#### 1. Go to Dashboards

- Use App Launcher → type and select **Dashboards** in search box.

#### 2. Edit Dashboard

- Open your dashboard (e.g., "Student Progress Dashboard").
- Click **Edit** at the top.

#### 3. Change Dashboard to Dynamic

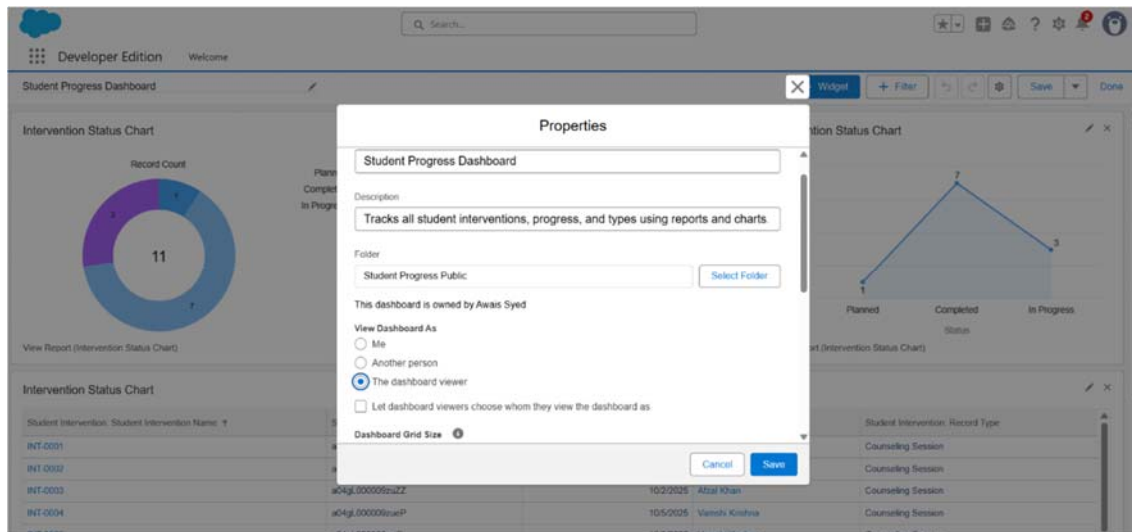
- Click on **Properties** (gear icon or click dashboard name).
- For "View Dashboard As", select "**The dashboard viewer**".

#### 4. Save and Done

- Click **Save** and **Done** in the editor.
- Move dashboard into a public/shared folder for others to see (optional).

### Result and Benefits:

- **Privacy & Custom Data:** Each person only sees data they're allowed to view, keeping records private and secure.
- **Security:** Stops people from seeing sensitive reports if they're not supposed to.
- **Real-Time Personalization:** Data always fits the user's job role and permissions. No more "too much information" on dashboards—everyone knows only what's helpful for them.
- **Easy Management:** Dynamic dashboards can be placed in home, app, or record pages, giving everyone personalized access everywhere they work.



## 9.5 Sharing Settings

**Use Case:** The Sharing Settings for Student Intervention objects help restrict and control which users can view or update sensitive student records. For a student success platform, this guarantees that only record owners (such as staff or teachers) and top-level administrators can access or modify student intervention information. This keeps private data secure, supports student privacy, and meets best practice for school/college security needs.

### Implementation Steps:

#### 1. Go to Sharing Settings

- Click the gear icon (Setup) → In Quick Find type "**Sharing Settings**", click Sharing Settings.

#### 2. Set Organization-Wide Defaults

- For the **Student Intervention** object, set Internal and External Access to **Private**.

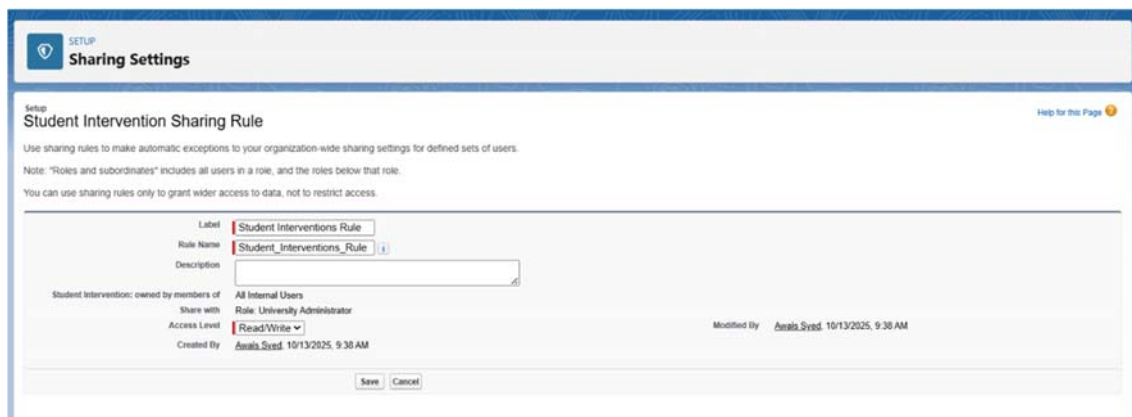
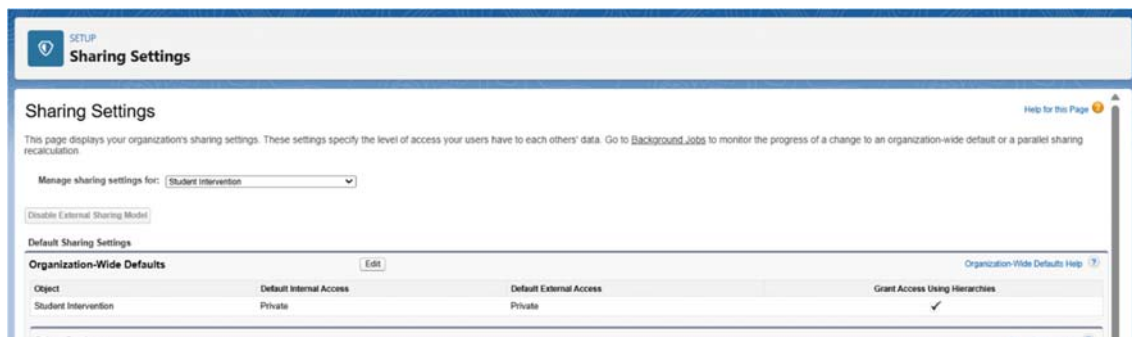
#### 3. Create a New Sharing Rule for Student Interventions

- Scroll to Student Intervention Sharing Rules section.
- Click **New Sharing Rule**.
- For rule details:
  - Label: Student Interventions Rule
  - Rule Name: Student\_Interventions\_Rule
  - Rule Type: **Based on record owner**
  - Records to Share: Public Groups → All Internal Users

- Share With: Roles → University Administrator
- Access Level: **Read/Write**
- Click **Save**.

### Result and Benefits:

1. Only student intervention record owners and their university administrators can see or change records, keeping all other users restricted, which protects sensitive information in the database.
2. This sharing configuration gives organization leaders oversight and control, supporting strong security and privacy for all student intervention data.
3. Audit and compliance are easier, as only the right people can access and update critical records, preventing unauthorized or accidental changes.



## 9.6 Field Level Security

**Use Case:** Field Level Security (FLS) is important to keep sensitive student data safe in Salesforce. With FLS, only certain users can see or change specific fields, which means student information like grades or health details stays private and is only visible to people who need it.

### Implementation Steps:

1. Click the "Setup" gear icon.
2. Go to "Object Manager" → Find the object you want (for example: Student).
3. Click the object name → Click "Fields & Relationships."
4. Select the field you want to protect.
5. Click "Set Field-Level Security."
6. For each profile (like Standard User, System Administrator, etc.):
  - Tick "Visible" if the user can see the field.
  - Tick "Read-Only" if the user can only see but not edit the field.
7. Click "Save" to keep changes.

### Result and Benefits:

- Student information is only shown to users with permission.
- Teachers can see grades, but other users cannot, unless allowed.
- This keeps private data safe and reduces mistakes or information leaks.
- Students and staff feel more secure because their information is only shared with the right people.

The screenshots show the Salesforce 'Set Field-Level Security' interface for the 'Outcome' field. The top screenshot shows the 'Elmskin Agent User' profile selected, with both 'Visible' and 'Read-Only' permissions unchecked. The bottom screenshot shows the 'Partner Community Login User' profile selected, with both 'Visible' and 'Read-Only' permissions unchecked. The 'Support Staff User' and 'System Administrator' profiles have both 'Visible' and 'Read-Only' permissions checked.

Field-Level Security for Profile	Visible	Read-Only
Analytics Cloud Integration User	<input type="checkbox"/>	<input type="checkbox"/>
Analytics Cloud Security User	<input type="checkbox"/>	<input type="checkbox"/>
Anypoint Integration	<input type="checkbox"/>	<input type="checkbox"/>
Contract Manager	<input type="checkbox"/>	<input type="checkbox"/>
Cross Org Data Proxy User	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Marketing Profile	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Sales Profile	<input type="checkbox"/>	<input type="checkbox"/>
Custom: Support Profile	<input type="checkbox"/>	<input type="checkbox"/>
Elmskin Agent User	<input type="checkbox"/>	<input type="checkbox"/>
Force.com - App Subscription User	<input type="checkbox"/>	<input type="checkbox"/>
Force.com - Free User	<input type="checkbox"/>	<input type="checkbox"/>
Gold Partner User	<input type="checkbox"/>	<input type="checkbox"/>
Identity User	<input type="checkbox"/>	<input type="checkbox"/>
Marketing User	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Access - API Only Integrations	<input type="checkbox"/>	<input type="checkbox"/>
Minimum Access - Salesforce	<input type="checkbox"/>	<input type="checkbox"/>
Partner App Subscription User	<input type="checkbox"/>	<input type="checkbox"/>
Partner Community Login User	<input type="checkbox"/>	<input type="checkbox"/>
Partner Community User	<input type="checkbox"/>	<input type="checkbox"/>
Read Only	<input type="checkbox"/>	<input type="checkbox"/>
Salesforce API Only System Integrations	<input type="checkbox"/>	<input type="checkbox"/>
Silver Partner User	<input type="checkbox"/>	<input type="checkbox"/>
Solution Manager	<input type="checkbox"/>	<input type="checkbox"/>
Standard Platform User	<input type="checkbox"/>	<input type="checkbox"/>
Standard User	<input type="checkbox"/>	<input type="checkbox"/>
Support Staff User	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
System Administrator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Work.com Only User	<input type="checkbox"/>	<input type="checkbox"/>

## 9.7 Session Settings

**Use Case:** Session Settings help keep the Salesforce account safe. These rules decide when users are logged out, what kind of logins are allowed, and how much security is needed. For students, teachers, and school staff, these settings make sure only the right people can use Salesforce and keep private information safe.

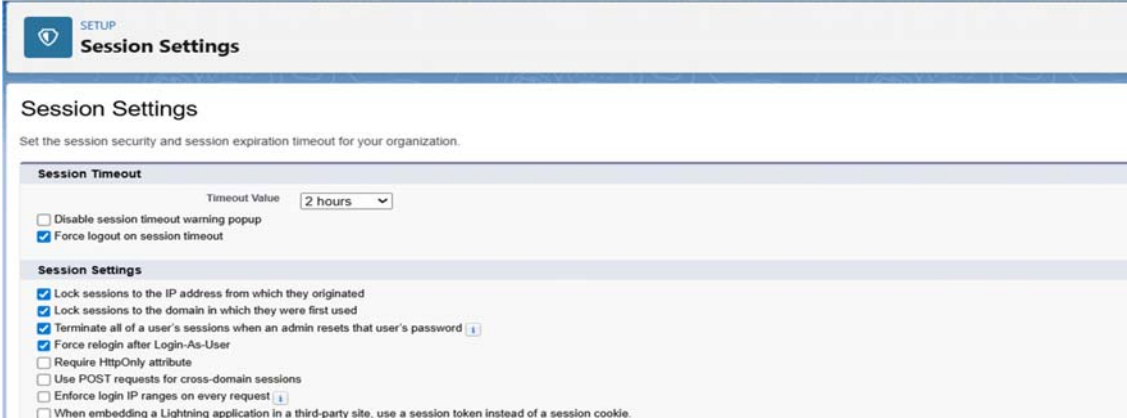
### Implementation Steps:

Click on "Session Settings":

- Set "Session Timeout" to **"2 hours"** to automatically log out users after some time.
- Tick **"Force logout on session timeout"** so accounts log off after timeout.
- Tick **"Lock sessions to the IP address from which they originated"** and **"Lock sessions to the domain in which they were first used"** for extra safety.
- Tick **"Terminate all of a user's sessions when an admin resets that user's password"** to protect accounts after password change.
- Tick **"Enable caching and autocomplete on login page"** and **"Enable secure and persistent browser caching to improve performance"** for fast logins.
- Set "Session Security Levels" with **"Username Password"** and **"Multi-Factor Authentication"** in the High Assurance box for the strongest protection.
- Click "Save" at the bottom of the page to keep your changes.

### Result and Benefits:

- Users get logged out after 2 hours, making accounts safer.
- Session security reduces the chances of hackers or unauthorized users getting into Salesforce.
- Performance is better with caching, so pages load fast for everyone.
- Multi-Factor Authentication (MFA) stops most attacks by asking for more than just a password.



The screenshot shows the Salesforce 'Session Settings' page. At the top, there's a 'SETUP' icon and the title 'Session Settings'. Below this, a subtitle reads 'Set the session security and session expiration timeout for your organization.' The main content area is divided into two sections: 'Session Timeout' and 'Session Settings'. In the 'Session Timeout' section, the 'Timeout Value' is set to '2 hours' in a dropdown menu. Below this, there are two checkboxes: 'Disable session timeout warning popup' (unchecked) and 'Force logout on session timeout' (checked). The 'Session Settings' section contains several checkboxes: 'Lock sessions to the IP address from which they originated' (checked), 'Lock sessions to the domain in which they were first used' (checked), 'Terminate all of a user's sessions when an admin resets that user's password' (checked), 'Force relogin after Login-As-User' (checked), 'Require HttpOnly attribute' (unchecked), 'Use POST requests for cross-domain sessions' (unchecked), 'Enforce login IP ranges on every request' (unchecked), and 'When embedding a Lightning application in a third-party site, use a session token instead of a session cookie' (unchecked).

**Caching**

- ☒ Enable caching and autocomplete on login page
- ☒ Enable secure and persistent browser caching to improve performance
- ☒ Enable user switching
- ☐ Remember me until logout
- ☒ Enable Content Delivery Network (CDN) for Lightning Component framework

**Session Security Levels**

**Standard**

- Delegated Authentication
- Activation
- Lightning Login
- Passwordless Login

**High Assurance**

- Multi-Factor Authentication
- Username Password

Add  
Remove

## 9.8 Login IP Ranges

**Use Case:** Login IP Ranges add a layer of safety so only trusted computers on specific networks (like school or office) can log in as System Admins. This helps protect sensitive information and keeps strangers out of Salesforce.

### Implementation Steps:

Login IP Ranges for the System Admin profile, this is what was done:

1. Clicked the Setup gear icon (top right in Salesforce).
2. Typed "Profiles" into the left search box and clicked "Profiles".
3. Chose "**System Administrator**" profile from the list.
4. Scrolled down and found "**Login IP Ranges**" section.
5. Clicked "New" to add a new range.
6. Entered Start IP Address: **49.43.1.1** and End IP Address: **49.43.217.178**.
7. Added Description: "Office Secure Range".
8. Clicked "Save" to finish.

### Result and Benefits

- Only computers with addresses between 49.43.1.1 and 49.43.217.178 (school/office range) can login as System Admin.
- Keeps Salesforce more secure and stops unauthorized people from logging in.
- Makes it easier for admins to know their login comes from a safe location.

SETUP
**Profiles**

**Login Hours**
Edit
Login Hours Help

No login hours specified

**Login IP Ranges**
New
Login IP Ranges Help

Action	IP Start Address	IP End Address	Description
<a href="#">Edit</a>   <a href="#">Del</a>	49.43.1.1	49.43.217.178	Office Secure Range

## 9.9 Audit Trail


**Use Case:** Audit Trail helps Salesforce admins keep track of changes made in setup. It is mostly used to see who changed what, and when, making it easier to check for mistakes, security problems, or reasons for errors in Salesforce settings.

### Implementation Steps:

1. Click the Setup gear icon at the top right.
2. In the search box on the left, type “View Setup Audit Trail”.
3. Click on “**View Setup Audit Trail**” in the search results.
4. See the list with the 20 most recent setup changes (who changed, what changed, when).
5. (Optional) Click “Download” to save a file with audit history for up to 180 days.
6. For longer history, repeat downloads regularly or use the API for automatic tracking and export.

### Result and Benefits:

- Admins see every major change in setup, who did it, and when, so problems can be fixed quickly.
- Helps keep Salesforce safe and ready for compliance checks or security audits.
- Makes it easy to review, find mistakes, and teach others the right way to make changes next time.

 **SETUP**  
**View Setup Audit Trail**

**View Setup Audit Trail** [Help for this Page](#)

The last 20 entries for your organization are listed below. You can [download](#) your organization's setup audit trail for the last six months (Excel .csv file).

Date	User	Source Namespace Prefix	Action	Section	Delegate User
10/13/2025, 10:28:57 AM PDT	awaisyed1212222@agentforce.com		Added Login Ip Range to System Administrator from 49.43.1.1 to 49.43.217.178	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Work.com Only User: field-level security for Student Intervention: Outcome was changed from 2 to 0	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile System Administrator: field-level security for Student Intervention: Outcome was changed from Read/Write to Read Only	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Support Staff User: field-level security for Student Intervention: Outcome was changed from Read/Write to Read Only	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Standard User: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Standard Platform User: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Solution Manager: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Salesforce API Only System Integrations: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Read Only: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Partner App Subscription User: field-level security for Student Intervention: Outcome was changed from 2 to 0	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Minimum Access - Salesforce: field-level security for Student Intervention: Outcome was changed from 2 to 0	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Custom: Support Profile: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Custom: Sales Profile: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	
10/13/2025, 9:54:13 AM PDT	awaisyed1212222@agentforce.com		Changed profile Custom: Marketing Profile: field-level security for Student Intervention: Outcome was changed from Read/Write to No Access	Manage Users	

[Download setup audit trail for last six months \(.Excel .csv file\)](#)



## **Phase 10: Final Presentation & Demo Day**

### **CONNECT Student Success Platform - Salesforce CRM Implementation**

#### **Pitch Presentation**

##### Project Name & Introduction

CONNECT Student Success Platform - Salesforce CRM Implementation

Industry: Higher Education Technology

Project Type: B2B Salesforce CRM Implementation for Universities

Target Users: Students, Academic Advisors, Student Support Staff, University

Administrators, Faculty Members

Developed in Salesforce Lightning Experience

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#### **Purpose:**

Deliver a secure, cloud-based platform to integrate academic, social, behavioral, and engagement data for student success, retention, and holistic growth at scale in universities.

#### **Problem Statement:**

- A mid-sized university (15,000+ students) faces alarming dropout rates and diminished student success due to fragmented support systems.
- 39% of first-time, full-time students do not return for year two, costing the institution over \$9 billion annually in wasted funds.
- Academic monitoring lacks insight into social networks; risk identification is reactive rather than predictive; peer/social programs operate separately and data is fragmented across many systems.
- Social isolation detection remains manual, leaving many at-risk students without timely support.
- Manual case management leads to inconsistent follow-up and poor tracking of outcomes.
- No existing platform integrates academic performance analytics with social network data for proactive, automated interventions.

#### **The Core Challenge**

No technology yet exists that brings together academic, behavioral, and social data to:

- Automatically identify at-risk students using daily risk scores.
- Match students into academically beneficial peer groups.

- Notify advisors and support staff with automated workflow triggers.
  - Monitor and measure intervention effectiveness in real time.
  - Provide comprehensive dashboards for retention, resources, and ROI.
- 

### **Project Objectives**

- Integrate data from LMS, SIS, and engagement platforms into unified student profiles.
  - Apply predictive analytics for daily risk scoring and early warnings.
  - Automate peer matching and study partnerships.
  - Implement proactive workflows for advisor notifications and student follow-up.
  - Deliver real-time dashboards for students, advisors, and admins for continuous improvement.
- 

### **Key Features**

- Record-Triggered Flows: Auto-update academic and engagement status, alerts, and reminders.
  - Scheduled Flows: Run daily/weekly risk scoring, advisor notification, and proactive outreach.
  - Automated Workflows: Peer matching, support scheduling, and intervention tracking.
  - Social Integration Tracking: Monitor isolation and recommend community-building activities.
  - Dynamic Reports & Dashboards: Real-time campus insights.
  - Security Infrastructure: Field security, session controls, login IP ranges for all roles.
- 

### **Use Cases**

- **Proactive At-Risk Student Identification:** Daily risk scoring, prioritized advisor alerting, automated scheduling of support.

- **Academic Peer Partnership Formation:** Algorithmic matching into collaboration groups, backed by campus analytics.
  - **Social Integration Monitoring & Intervention:** Automated tracking of participation and interactions, targeted recommendations.
  - **Predictive Intervention Timing:** Machine learning suggests optimal support delivery based on academic trajectories.
  - **Holistic Success Dashboard Reporting:** Real-time reporting of retention metrics, student health scores, and program effectiveness.
- 

### **Expected Outcomes**

- Student Retention Improvement of 15–20%
  - Cost Savings Averaging \$180,000+ per Cohort
  - Risk Prediction Accuracy of  $\geq 85\%$
  - Platform User Adoption Rate of  $\geq 90\%$  within 6 Months
  - Intervention Effectiveness:  $\geq 70\%$  in Improving At-Risk Outcomes
- 

### **Impact / Benefits**

- Higher student retention and satisfaction.
  - Timely, automated outreach prevents dropouts.
  - Robust analytics drive strategic planning and continuous improvement.
  - Improved teamwork between advisors, staff, and students.
- 

### **Technology Used**

- Salesforce Lightning Platform
- Flows & Process Automation (Record-Triggered, Scheduled)
- Apex Classes (automation for notification, matching, reporting)
- Email Alerts & Alert Engine
- Custom Reports & Dashboards
- Data Import Wizard/Data Loader for bulk SIS/LMS integration

## **Conclusion**

CONNECT has proven that a well-designed, Salesforce-powered student success platform can transform how universities identify risk, coordinate support, and improve outcomes at scale. By unifying data from LMS, SIS, and engagement systems into a single profile, applying predictive analytics for daily risk scoring, and orchestrating proactive workflows for advisors, CONNECT shifts institutions from reactive crisis management to timely, targeted care. The result is a reliable operating model for student success that measurably lifts retention, improves student well-being, and optimizes the use of institutional resources.

Across the project phases, the team delivered an enterprise-ready foundation: robust data architecture, automated flows for alerts and interventions, secure access controls, and dynamic reports and dashboards that surface real-time insight for students, advisors, and leadership. The peer-matching and social integration capabilities close the gap between academic performance and belonging—addressing one of the strongest predictors of persistence—while auditability, session controls, and IP governance ensure trust and compliance.

The expected impacts are compelling: 15–20% improvement in retention,  $\geq 85\%$  risk prediction accuracy,  $\geq 70\%$  intervention effectiveness, and six-month adoption rates above 90%. These gains translate into substantial financial savings and, more importantly, a more equitable and supportive student experience. CONNECT is not just a system of record; it is a system of action—continuously learning from outcomes, refining strategies, and scaling what works.

With the core platform live, the path forward is clear: deepen integrations, expand predictive models, broaden peer and community programs, and embed continuous improvement cycles powered by analytics. CONNECT positions the university to make data-informed decisions every day, ensuring that each student is seen, supported, and set up to succeed.