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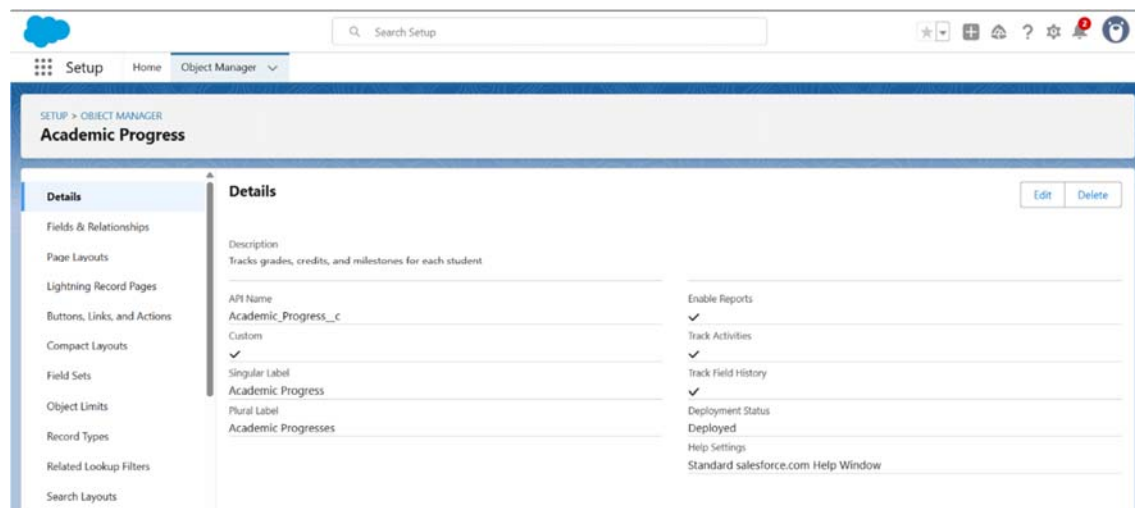
COMMENT: Please attach Screenshot showing Peer Partnership Object details - Navigate to Setup > Object Manager > Academic Progress
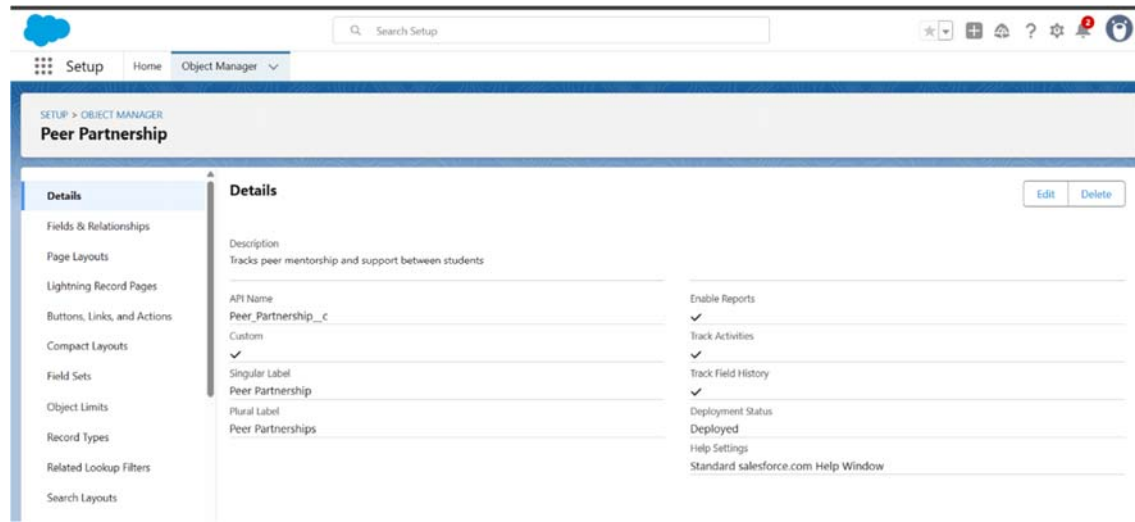
Peer Partnership Object

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
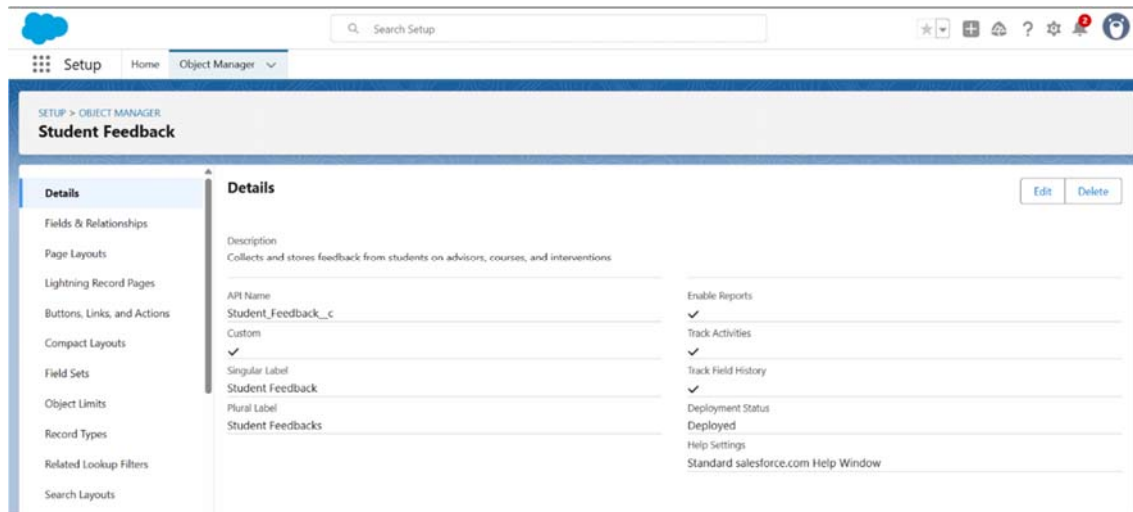
- Start Date

- 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

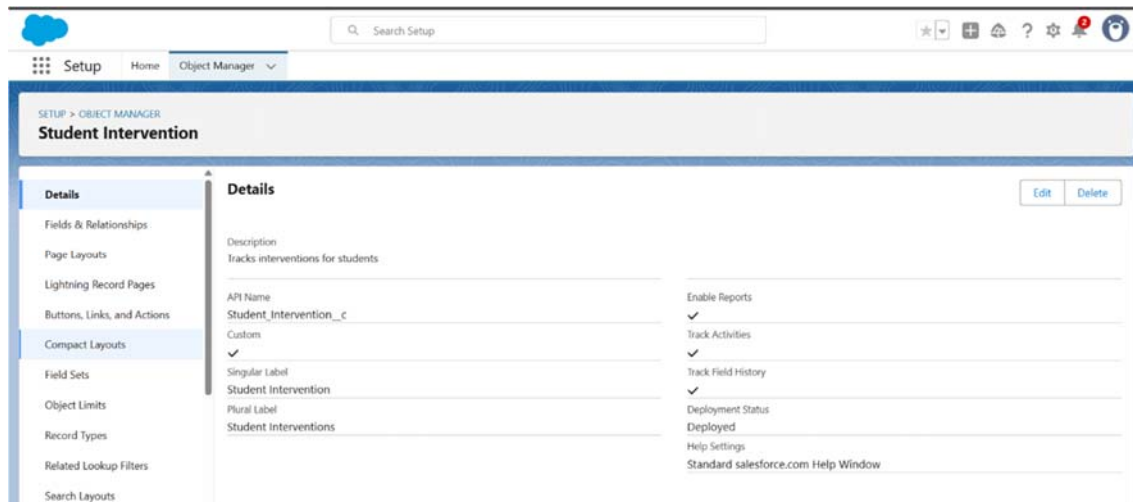- Rating

- 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.
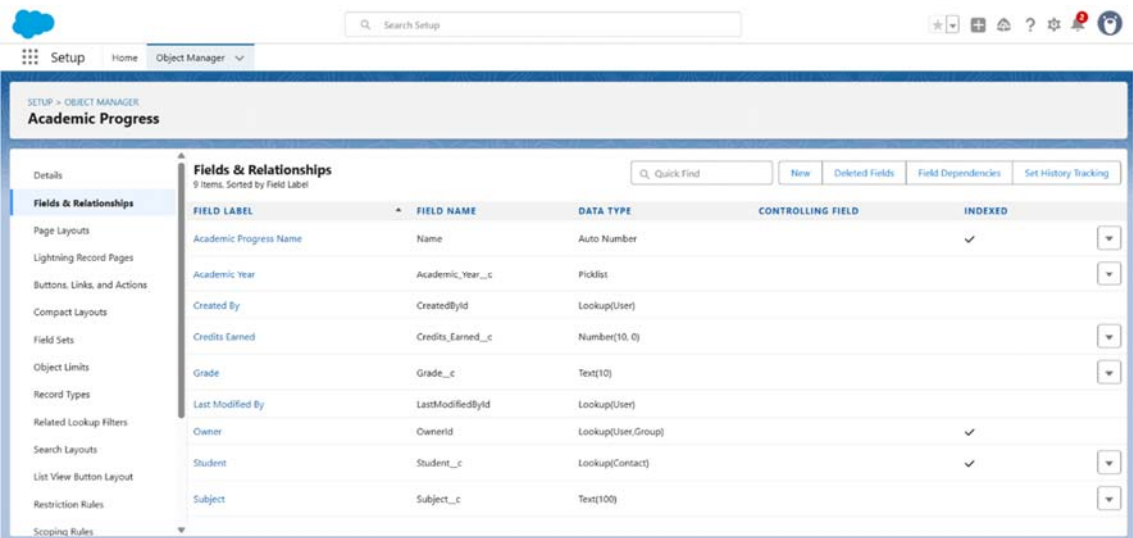
Field Types Implemented

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.
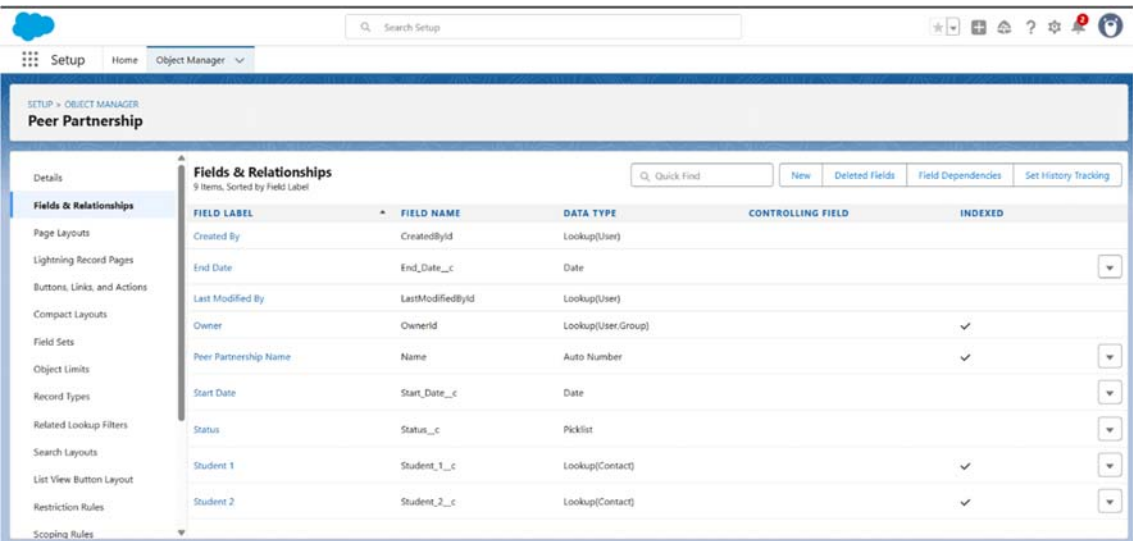

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Academic Progress > Fields & Relationships
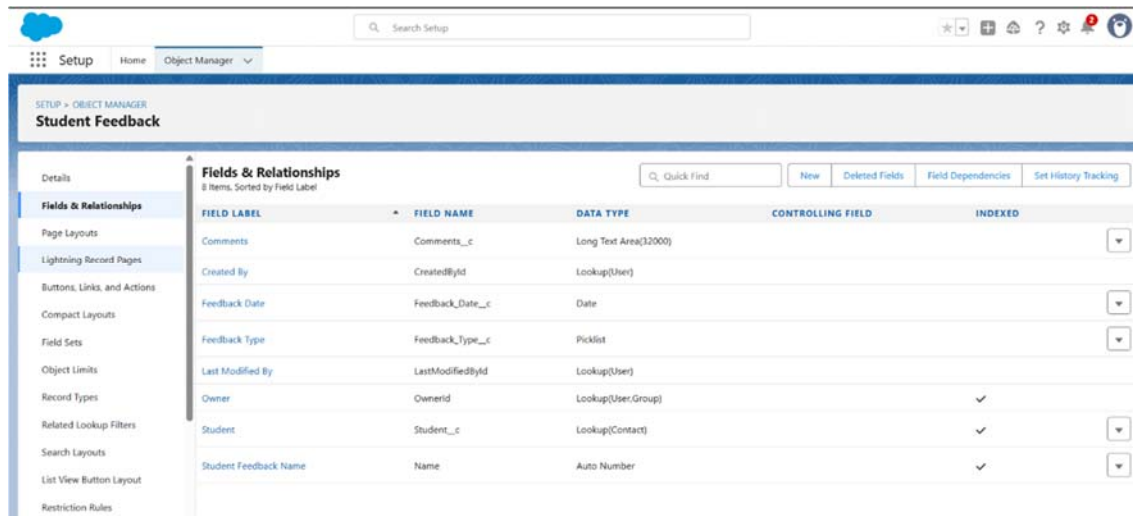

COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Peer Partnership > Fields & Relationships
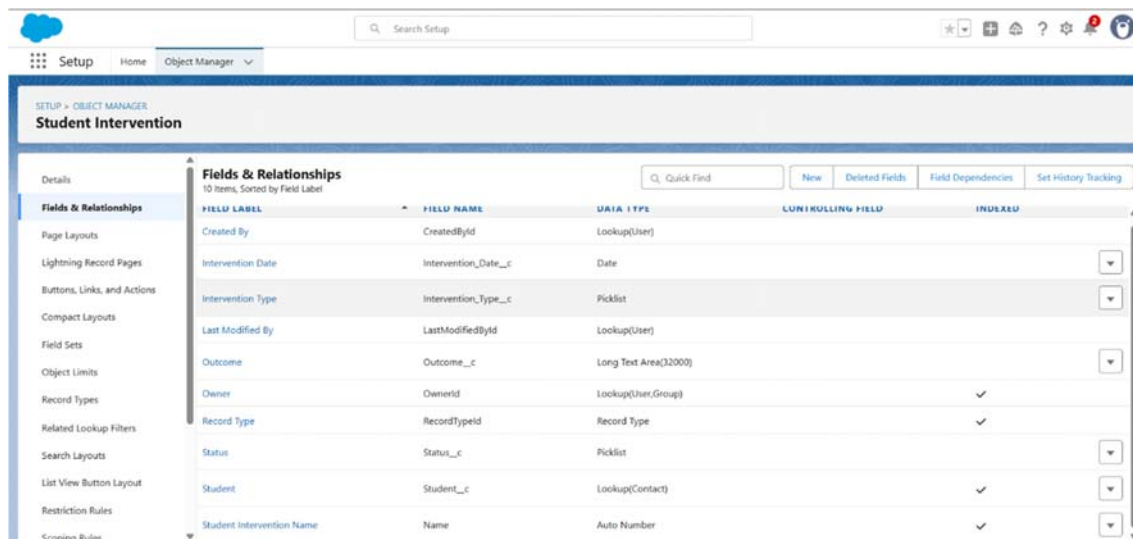
COMMENT: Please attach Screenshot showing Field Details for any custom object - Navigate to Setup > Object Manager > Student Feedback > Fields & Relationships

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.
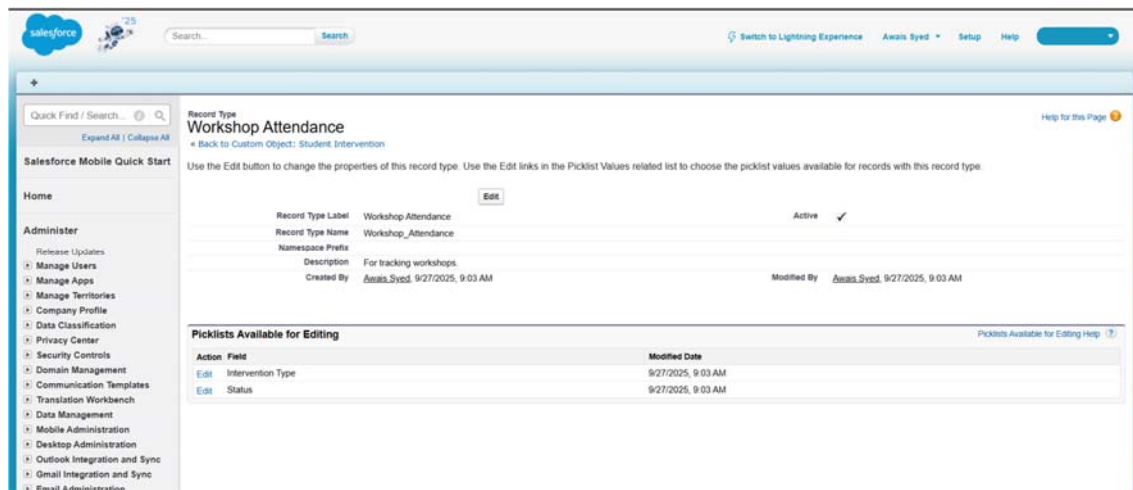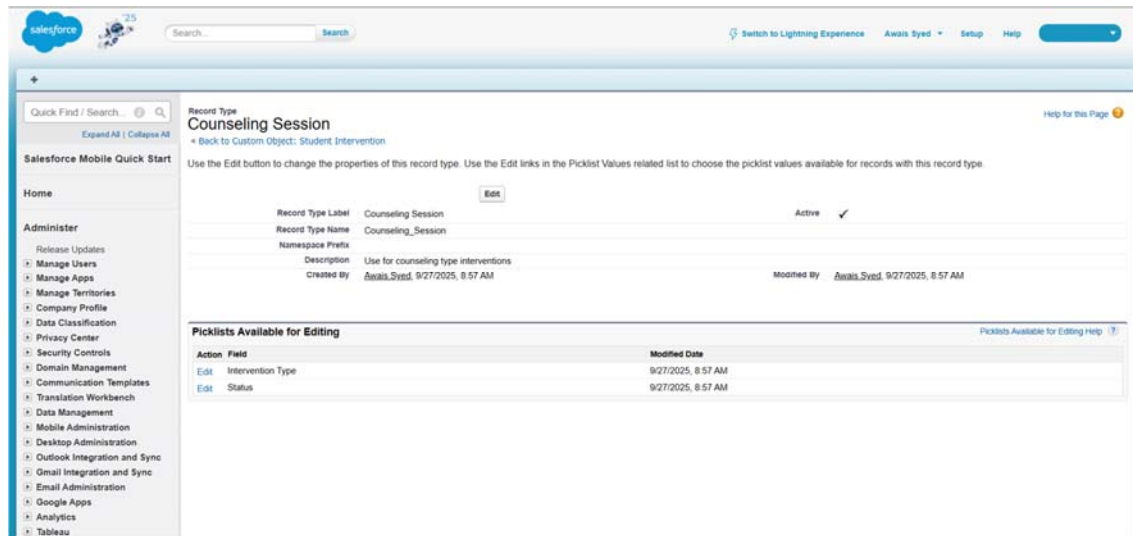
Key Features:

- Exchange program specific fields

- Temporary enrollment tracking

- International student services integration

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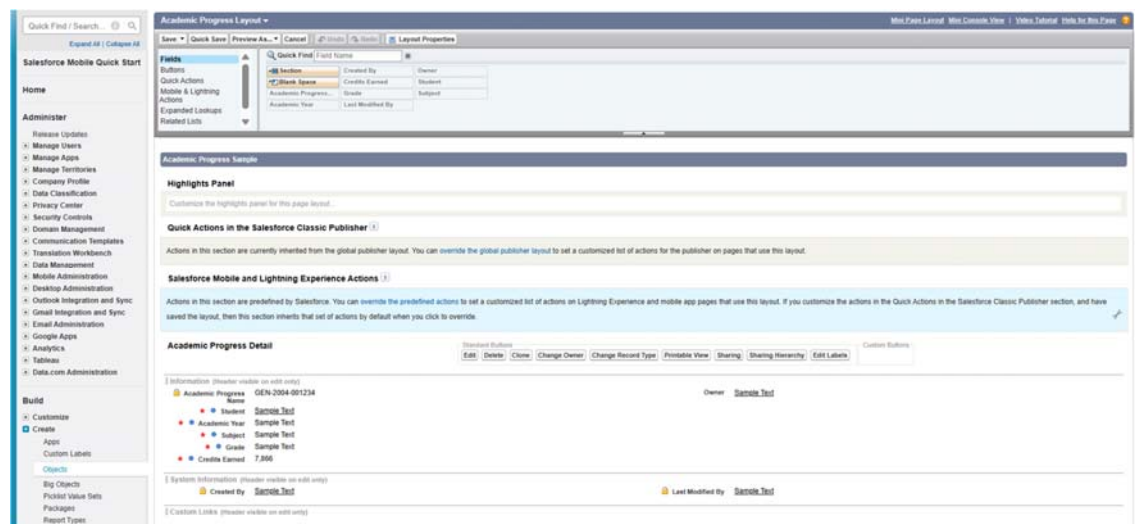
COMMENT: Screenshot showing Academic Progress Page Layout - Setup > Object Manager > Academic Progress > Page Layouts

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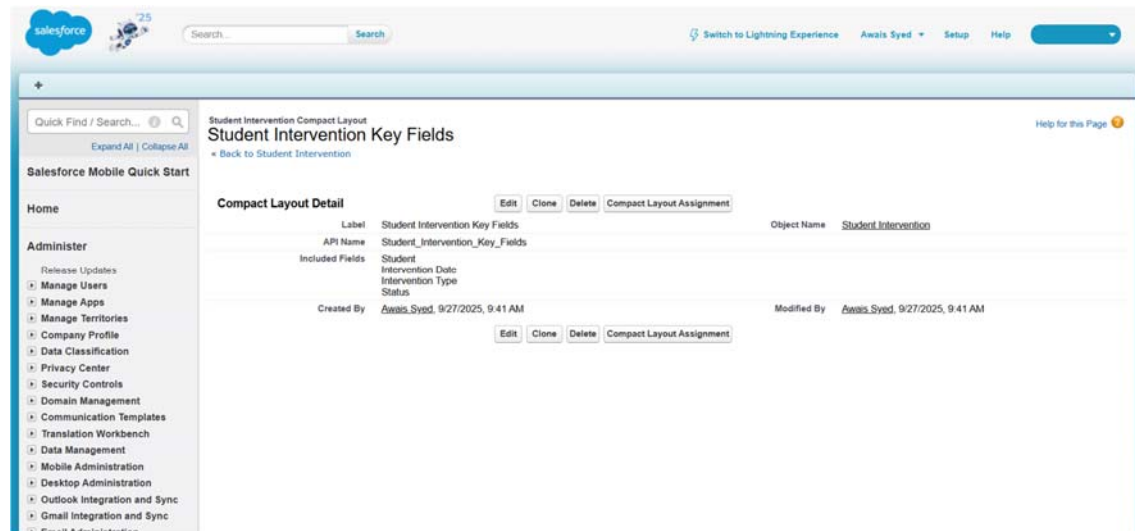
COMMENT: Screenshot showing Student Intervention Compact Layout configuration - Setup > Object Manager > Student Intervention > Compact Layouts

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

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

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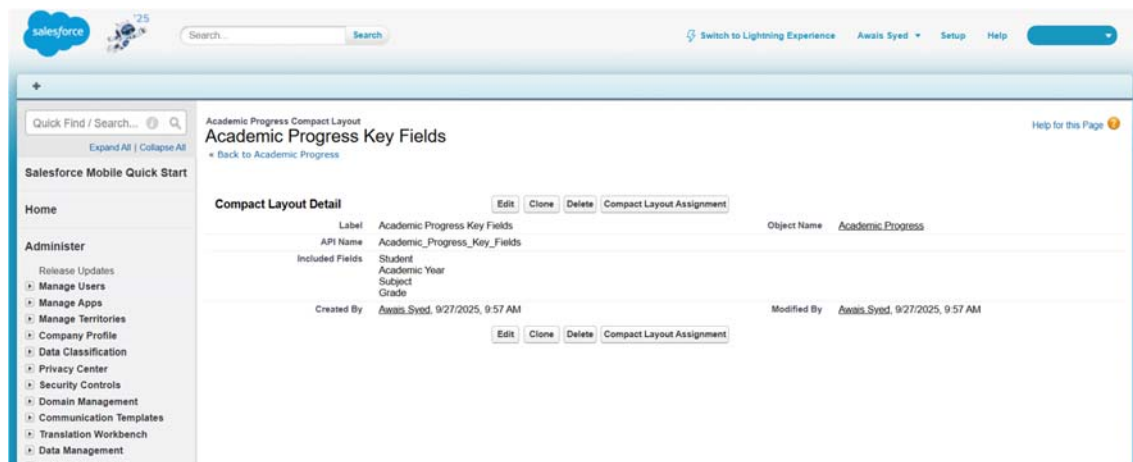
COMMENT: Screenshot showing Academic Progress Compact Layout - Setup > Object Manager > Academic Progress > Compact Layouts

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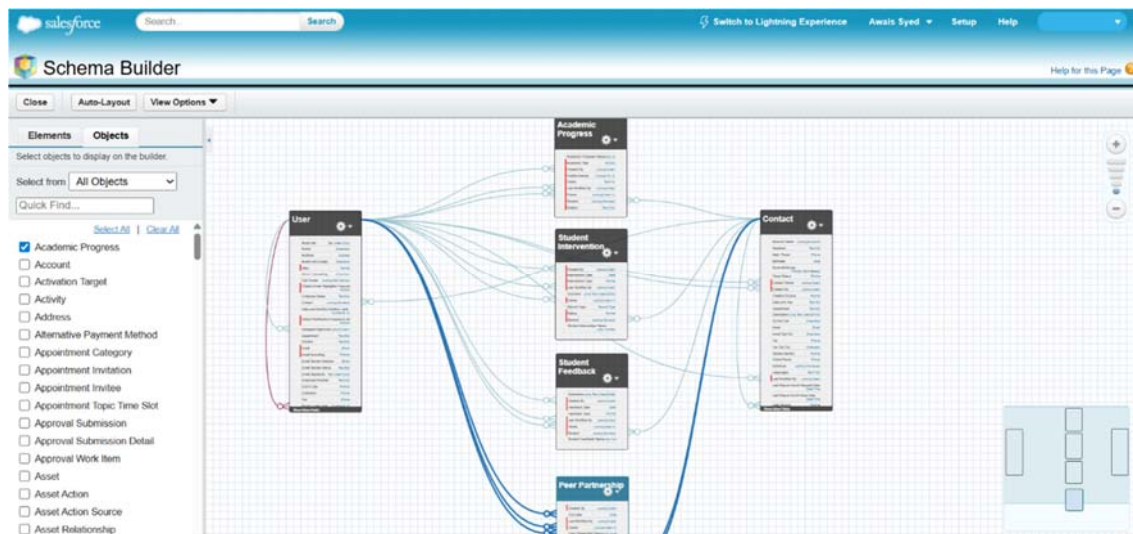
COMMENT: Screenshot showing Schema Builder with all custom objects - Setup > Schema Builder and select relevant objects to display

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.