

# Project: EduLink Student & Course Management System

## Phase 3: Data Modeling & Relationships

### Standard & Custom Objects

The data model for EduLink utilizes a combination of standard and custom objects to create a robust system for managing student and course information.

#### **Standard Objects:**

- **Contact:** Represents individual students.
- **Account:** Represents educational institutions or schools students may be associated with.
- **Lead:** Used to manage prospective student applications before they are converted to Contacts.
- **User:** Represents internal users, including instructors.

#### **Custom Objects:**

- **Course\_c:** Tracks all academic courses offered.
- **Enrollment\_c:** A central object linking students to the courses they are taking.
- **Assignment\_c:** Stores details for all assignments related to a course.
- **Progress\_c:** Records student grades and performance on individual assignments.

**Data Flow:** Contact (Student) → Enrollment\_c → Progress\_c ← Assignment\_c ← Course\_c

### Fields & Relationships

Custom fields were added to each object to store detailed information. Key relationships were established to link the objects into a logical data model.

#### Course\_c Fields

- **Path:** Setup → Object Manager → Course → Fields & Relationships → New
- **Fields Added:**
  - Course Code: Text (10), Required, Unique
  - Credits: Number (2, 0)
  - Department: Picklist
  - Instructor: Lookup Relationship to User
  - Start Date: Date, Required
  - End Date: Date
  - Status: Picklist

## [Enrollment\\_\\_c Fields](#)

- **Path:** Setup → Object Manager → Enrollment → Fields & Relationships → New
- **Fields Added:**
  - Student: **Master-Detail Relationship** to Contact
  - Course: **Lookup Relationship** to Course
  - Enrollment Date: Date
  - Status: Picklist
  - Final Grade: Picklist

## [Assignment\\_\\_c Fields](#)

- **Path:** Setup → Object Manager → Assignment → Fields & Relationships → New
- **Fields Added:**
  - Course: Lookup Relationship to Course
  - Assignment Type: Picklist
  - Due Date: Date/Time
  - Max Points: Number
  - Description: Long Text Area

## [Progress\\_\\_c Fields](#)

- **Path:** Setup → Object Manager → Progress → Fields & Relationships → New
- **Fields Added:**
  - Enrollment: **Master-Detail Relationship** to Enrollment
  - Assignment: Lookup Relationship to Assignment
  - Points Earned: Number
  - Submission Date: Date/Time
  - Grade Letter: **Formula (Text)**, which auto-calculates a grade based on points earned.
  - Comments: Long Text Area

## **Validation Rule**

To ensure data integrity, a validation rule was added to the Course\_\_c object.

- **Path:** Setup → Object Manager → Course → Validation Rules → New
- **Rule:** EndDate\_After\_StartDate
- **Purpose:** Prevents users from saving a course record where the End Date is earlier than or the same as the Start Date, ensuring logical timelines.

**Course Validation Rule**

Define a validation rule by specifying an error condition and a corresponding error message. The error condition is written as a Boolean formula expression that returns true or false. When the formula expression returns true, the save will be aborted and the error message will be displayed. The user can correct the error and try again.

**Validation Rule Edit**

Save Save & New Cancel

Rule Name: EndDate\_After\_StartDate

Active:

Description: Ensures that the course End Date is always after the Start Date.

**Error Condition Formula**

Example: Discount\_Percent\_c > 0.30 [More Examples...](#)

Display an error if Discount is more than 30%  
If this formula expression is true, display the text defined in the Error Message area

Insert Field Insert Operator

Check Syntax No errors found

Functions: ABS, ACOS, ADDMONTHS, AND, ASCII, ASIN

Quick Tips: Operators & Functions

\* = Required Information

## Record Types & Page Layouts

To provide tailored user experiences, Record Types and custom Page Layouts were configured for the Course\_\_c object.

- **Path (Record Types):** Setup → Object Manager → Course → Record Types → New
- **Path (Page Layouts):** Setup → Object Manager → Course → Page Layouts → New
- **Implementation:**
  - Two record types were created: **Undergraduate** and **Graduate**.
  - A new page layout, **Graduate Course Layout**, was created and assigned to the Graduate record type. This layout includes a unique "Thesis Supervisor" field, demonstrating how layouts can differ based on record type.

Record Type Graduate

Help for this F

« Back to Custom Object: Course

Use the Edit button to change the properties of this record type. Use the Edit links in the Picklist Values related list to choose the picklist values available for records with this record type.

Edit

Record Type Label	Graduate	Active	<input checked="" type="checkbox"/>		
Record Type Name	Graduate				
Namespace Prefix					
Description					
Created By	Sanya Agrawal	9/22/2025, 6:26 AM	Modified By	Sanya Agrawal	9/22/2025, 6:26 AM

Picklists Available for Editing

Action	Field	Modified Date
Edit	Department	9/22/2025, 6:26 AM
Edit	Status	9/22/2025, 6:26 AM

Record Type  
**Undergraduate**  
« Back to Custom Object: Course

Help for th

Use the Edit button to change the properties of this record type. Use the Edit links in the Picklist Values related list to choose the picklist values available for records with this record type.

Edit	
Record Type Label	Undergraduate
Record Type Name	Undergraduate
Namespace Prefix	
Description	
Created By	Sanya Agrawal, 9/22/2025, 6:24 AM
Modified By	Sanya Agrawal, 9/22/2025, 6:24 AM
Active	✓

Picklists Available for Editing

Action	Field	Modified Date	Picklists Available for Editing
Edit	Department	9/22/2025, 6:24 AM	
Edit	Status	9/22/2025, 6:24 AM	

## compact layouts

To improve usability, a custom compact layout was created to display key information in the record highlights panel.

- **Path:** Setup → Object Manager → Course → Compact Layouts → New
- **Implementation:** A layout named **Course Highlights** was created for the Course\_\_c object. It displays the Course Code, Status, Instructor, and Credits at the top of the record page for quick visibility.

Compact Layout Edit Save Cancel

Enter Compact Layout Information

Label  Name  i

Select Compact Layout Fields

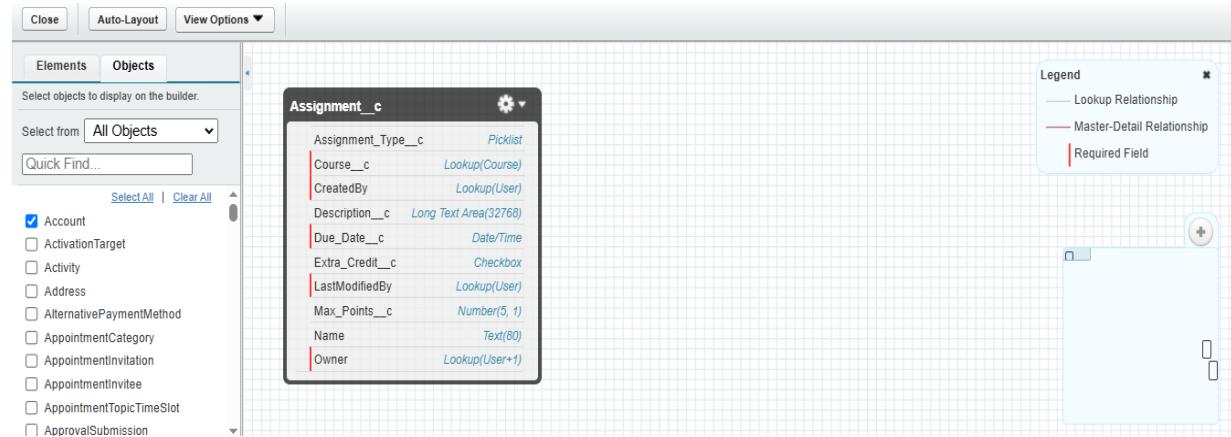
Available Fields	Selected Fields
Course Name Created By Department End Date Last Modified By Owner Record Type Start Date Thesis Supervisor	Course Code Status Instructor Credits
Add <span>▶</span> Remove <span>◀</span>	Top <span>◀</span> Up <span>▲</span> Down <span>▼</span> Bottom

Use SHIFT + click to select adjacent fields. Use CTRL + click to select an assortment of fields.

## schema builder

The Schema Builder was used as a visual tool to review the data model and perform modifications.

- **Path:** Setup → Schema Builder
- **Usage:**
  - **Verification:** It was used to visually confirm that all custom objects were correctly linked through their respective relationships.
  - **Creation:** An "Extra Credit" checkbox field was added directly to the Assignment\_\_c object from the Schema Builder canvas.



## 🔗 Other Data Modeling Concepts

- Junction Objects:** The **Enrollment\_\_c** object was successfully implemented as a junction object, creating the required many-to-many relationship between Contacts (Students) and Courses.
- Hierarchical & External Objects:** These relationship types were discussed but were not required for the current phase of the EduLink project.