Salesforce Project Phase-9

Smart Education & E-Learning Management System

Phase 9 – Advanced Functionality & UI Enhancements

1. Custom Buttons / Actions

- Created a “Mark Complete” action on the Assignment object.
- Action type: Update a Record.
- Field update: Status__c → “Completed”.
- Added to Assignment Page Layout for quick access.
- Benefit: Teachers and Students can instantly update completion status without editing the entire record.
- Tested on different profiles to ensure visibility.

2. Quick Actions

- Added “Add Assignment” Quick Action on Course object.
- Configured in Salesforce Mobile and Lightning Experience Actions section.
- Fields displayed in Quick Action layout: Assignment Title, Due_Date__c, Max_Marks__c, Student__c.
- Ensured teachers can directly add assignments without leaving the Course record page.
- Verified functionality on Salesforce Mobile App as well as desktop.

3. Lightning Pages & Components

- Customized Lightning Record Pages using App Builder.
- Student Page: Related List (Assignments) displayed, Conditional visibility (show only if student has active enrollment).
- Teacher Page: Added Course Details, Progress Bar (custom formula field showing % completion), Embedded charts summarizing student assignment status.
- Used Standard Components (Tabs, Charts, Related List, Rich Text).
- Added a Rich Text Component with guidelines on submitting assignments.
- Enhanced layout with two-column design for better usability.

4. Validation Rules & Workflow Enhancements

- Validation Rules:
- 1. Prevent Due_Date__c < TODAY().
- 2. Ensure Progress__c <= 100.
- 3. Assignment title must not be left blank.
- Workflow Rules: Trigger email alerts when new Assignment is created, Send notifications to Assignment Owner/Teacher.

- Process Automation: Considered Process Builder for future scalability.

5. Reports & Dashboards

- Built Custom Report Types: Student with Assignments, Course with Assignments, Student Enrollment Progress.
- Created Reports:
- 1. Student Progress by Course (bar chart).
- 2. Pending vs Completed Assignments (donut chart).
- 3. Top Performing Students (tabular report with sorting on Grades).
- Dashboard: “Education Dashboard” with Course completion rate (bar), Assignment distribution (pie), Teacher workload (stacked bar).
- Set dashboard refresh to weekly for auto-updates.

6. Testing & Quality Assurance

- Performed functional testing: Quick Actions create records correctly, Validation rules trigger proper error messages, Buttons visible only to allowed profiles.
- Conducted user testing with sample Student & Teacher logins.
- Verified Email Deliverability for workflow notifications.
- Created test records to ensure dashboard reflects real-time updates.

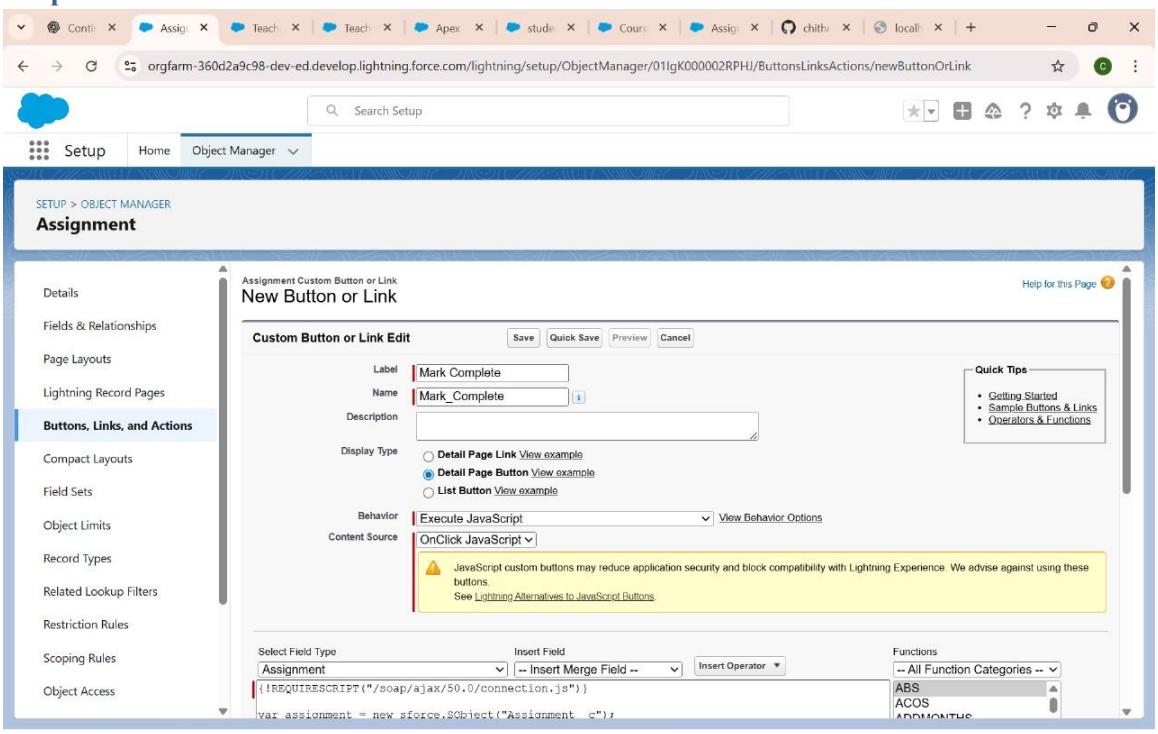
7. Security Review

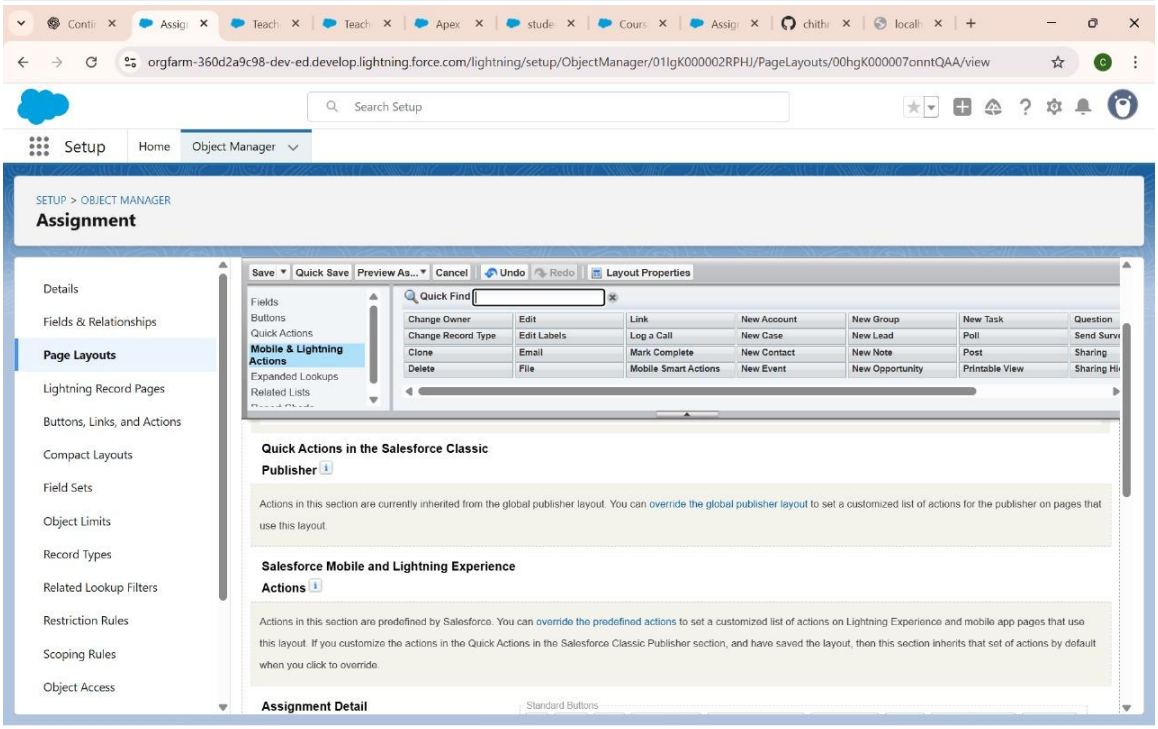
- Profile-level Access: Students: Read-only on Assignments and Courses, Teachers: Edit access on Assignments & Courses.
- Field-level Security: Grades hidden from Students, Progress fields read-only for Students.
- Permission Sets documented: “Teacher Access Set” with full Assignment control, “Student Access Set” with limited access.
- Sharing Rules: Students can only see their own assignments, Teachers can see all assignments under their course.

8. Additional Enhancements

- Added Compact Layouts for mobile optimization.
- Used Path Component to show Assignment stages (Assigned → In Progress → Completed).
- Enabled Inline Editing for Teachers to quickly adjust marks.
- Added Help Texts to key fields (Due Date, Max Marks).
- Considered Lightning Flow for automated Assignment re-check reminders.

Snapshots:


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/01IgK000002RPHJ/ButtonsLinksActions/newButtonOrLink
Search Setup
Setup
Home
Object Manager
SETUP > OBJECT MANAGER
Assignment
Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Restriction Rules
Scoping Rules
Object Access
Assignment Custom Button or Link
New Button or Link
Help for this Page
Custom Button or Link Edit
Save
Quick Save
Preview
Cancel
Label
Mark Complete
Name
Mark_Complete
Description
Display Type
Detail Page Link View example
Detail Page Button View example
List Button View example
Quick Tips
Getting Started
Sample Buttons & Links
Operators & Functions
Behavior
Execute JavaScript
View Behavior Options
Content Source
OnClick JavaScript
JavaScript custom buttons may reduce application security and block compatibility with Lightning Experience. We advise against using these buttons.
See Lightning Alternatives to JavaScript Buttons.
Select Field Type
Assignment
Insert Field
-- Insert Merge Field --
Insert Operator
Functions
-- All Function Categories --
{!REQUIRESCRIPT("/soap/ajax/50.0/connection.js")}
var assignment = new sforce.SObject("Assignment__c");
ABS
ACOS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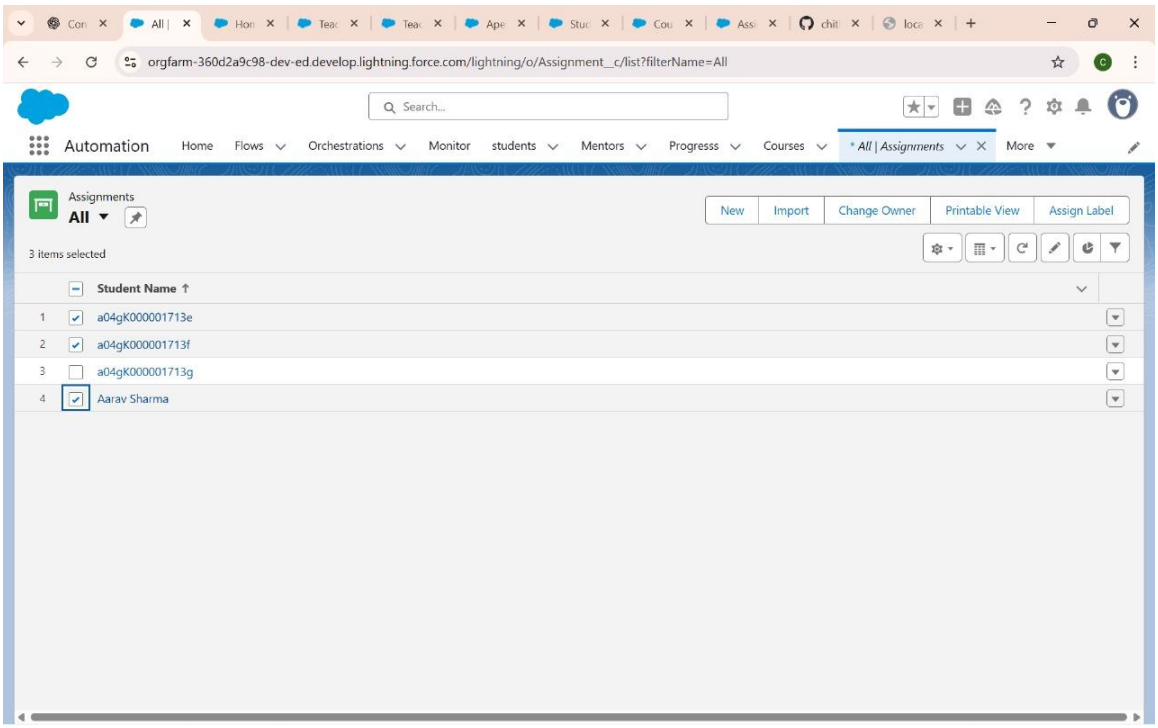
Search Setup
Setup
Home
Object Manager
SETUP > OBJECT MANAGER
Assignment
Details
Fields & Relationships
Page Layouts
Lightning Record Pages
Buttons, Links, and Actions
Compact Layouts
Field Sets
Object Limits
Record Types
Related Lookup Filters
Restriction Rules
Scoping Rules
Object Access
Save
Quick Save
Preview As...
Cancel
Undo
Redo
Layout Properties
Fields
Buttons
Quick Actions
Mobile & Lightning Actions
Expanded Lookups
Related Lists
Quick Find
Change Owner
Edit
Link
New Account
New Group
New Task
Question
Change Record Type
Edit Labels
Log a Call
New Case
New Lead
Poll
Send Surv
Clone
Email
Mark Complete
New Contact
New Note
Post
Sharing
Delete
File
Mobile Smart Actions
New Event
New Opportunity
Printable View
Quick Actions in the Salesforce Classic
Publisher
Actions in this section are currently inherited from the global publisher layout. You can override the global publisher layout to set a customized list of actions for the publisher on pages that use this layout.
Salesforce Mobile and Lightning Experience
Actions
Actions in this section are predefined by Salesforce. You can override the predefined actions to set a customized list of actions on Lightning Experience and mobile app pages that use this layout. If you customize the actions in the Quick Actions in the Salesforce Classic Publisher section, and have saved the layout, then this section inherits that set of actions by default when you click to override.
Assignment Detail
Standard Buttons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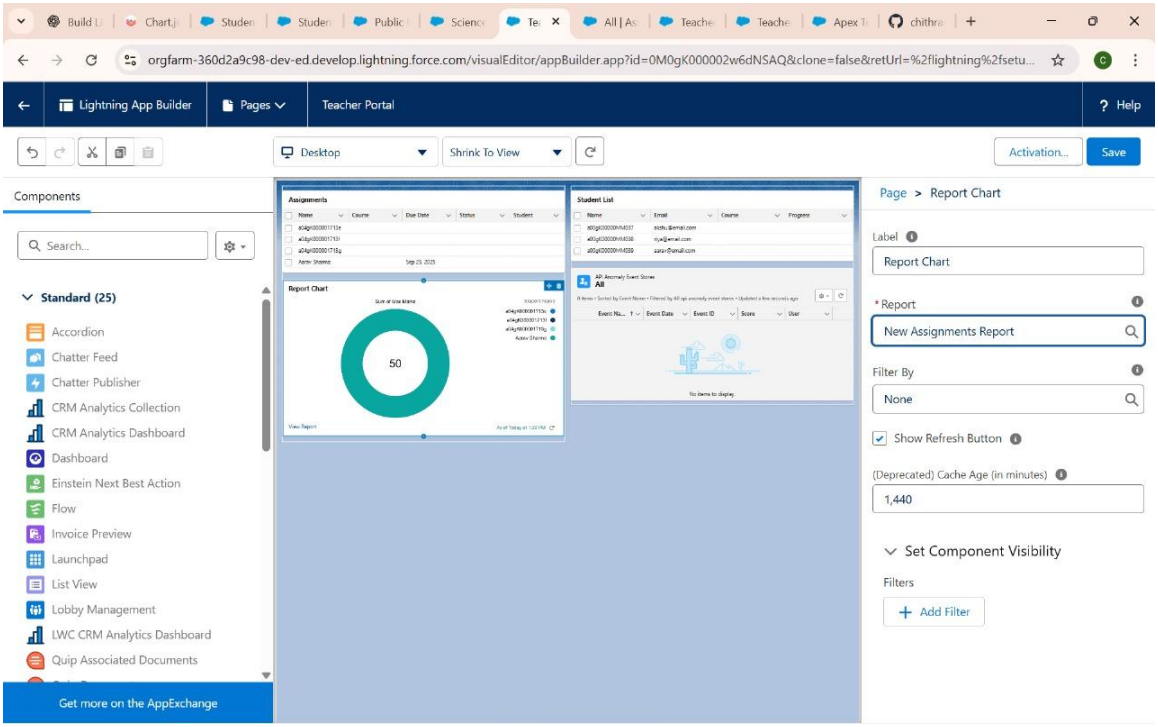
Search...
Automation
Home
Flows
Orchestrations
Monitor
students
Mentors
Progresss
Courses
* All | Assignments
More
Assignments
All
New
Import
Change Owner
Printable View
Assign Label
3 items selected
Student Name
1 a04gK000001713e
2 a04gK000001713f
3 a04gK000001713g
4 Aarav Sharma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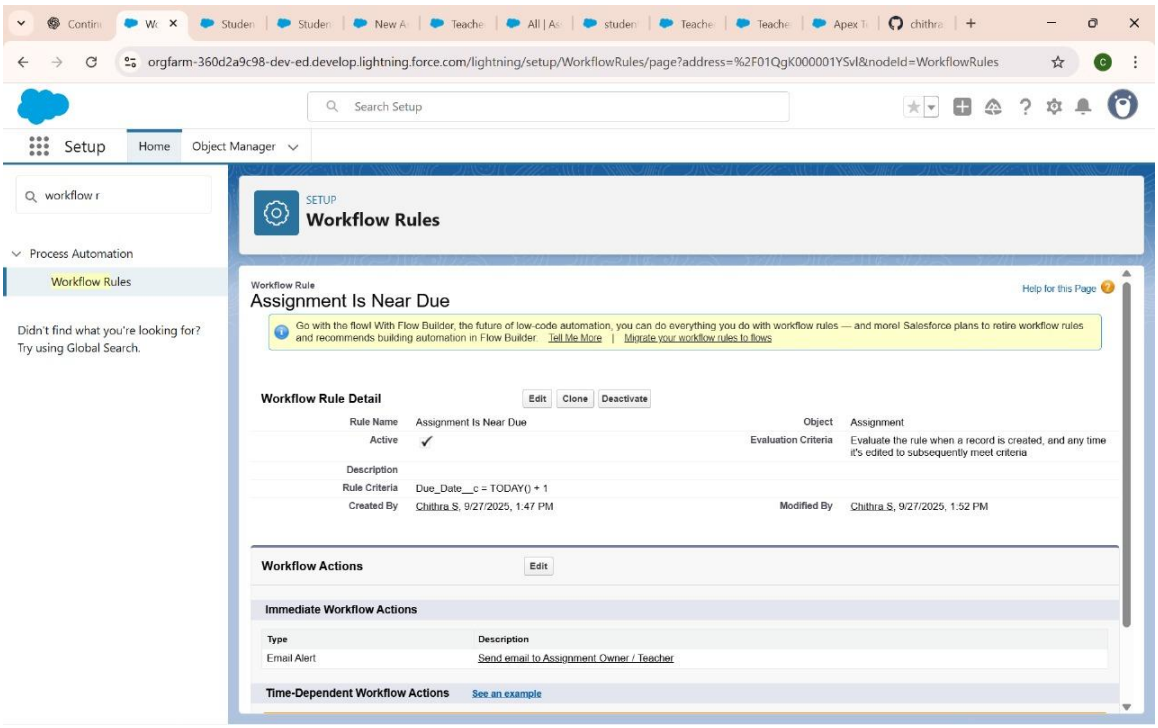
Lightning App Builder
Pages
Teacher Portal
Help
Desktop
Shrink To View
Activation...
Save
Components
Search...
Standard (25)
Accordion
Chatter Feed
Chatter Publisher
CRM Analytics Collection
CRM Analytics Dashboard
Dashboard
Einstein Next Best Action
Flow
Invoice Preview
Launchpad
List View
Lobby Management
LWC CRM Analytics Dashboard
Quip Associated Documents
Get more on the AppExchange
Report Chart
50
Page > Report Chart
Label
Report Chart
* Report
New Assignments Report
Filter By
None
Show Refresh Button
(Deprecated) Cache Age (in minutes)
1,440
Set Component Visibility
Filters
Add Filter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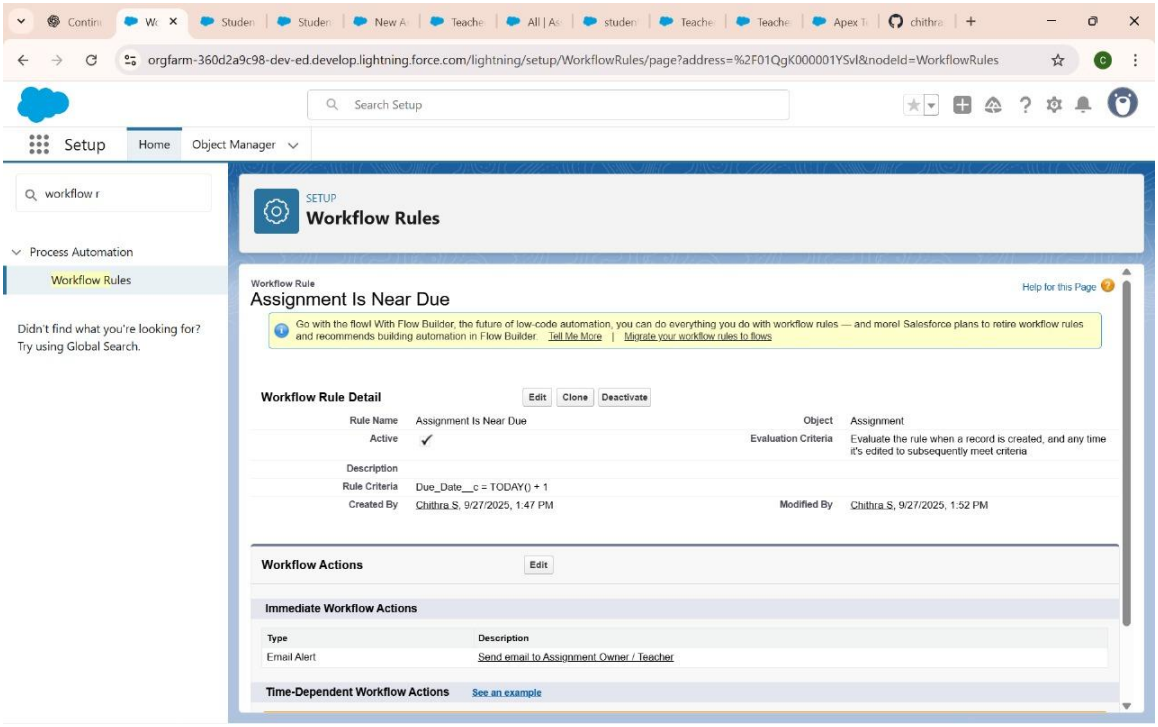
Search Setup
Setup
Home
Object Manager
workflow r
Process Automation
Workflow Rules
Didn't find what you're looking for?
Try using Global Search.
SETUP
Workflow Rules
Workflow Rule
Assignment Is Near Due
Help for this Page
Go with the flow! With Flow Builder, the future of low-code automation, you can do everything you do with workflow rules — and more! Salesforce plans to retire workflow rules and recommends building automation in Flow Builder. Tell Me More | Migrate your workflow rules to flows
Workflow Rule Detail
Edit
Clone
Deactivate
Rule Name
Assignment Is Near Due
Object
Assignment
Active
Evaluation Criteria
Evaluate the rule when a record is created, and any time it's edited to subsequently meet criteria
Description
Rule Criteria
Due_Date__c = TODAY() + 1
Created By
Chithra S, 9/27/2025, 1:47 PM
Modified By
Chithra S, 9/27/2025, 1:52 PM
Workflow Actions
Edit
Immediate Workflow Actions
Type
Description
Email Alert
Send email to Assignment Owner / Teacher
Time-Dependent Workflow Actions
See an example


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/setup/WorkflowRules/page?address=%2F01QgK000001YSvl&nodeId=WorkflowRules
Search Setup
Setup
Home
Object Manager
workflow r
Process Automation
Workflow Rules
Didn't find what you're looking for?
Try using Global Search.
SETUP
Workflow Rules
Workflow Rule
Assignment Is Near Due
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Workflow Rule Detail
Edit
Clone
Deactivate
Rule Name
Assignment Is Near Due
Object
Assignment
Active
Evaluation Criteria
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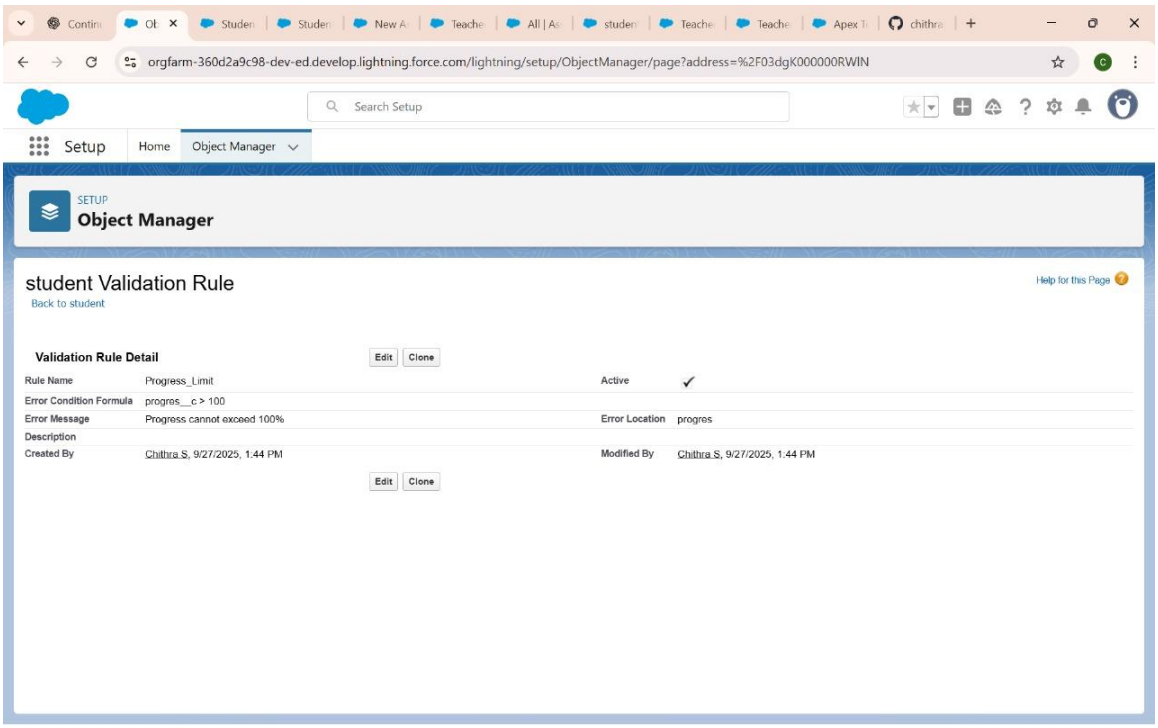
Description
Rule Criteria
Due_Date__c = TODAY() + 1
Created By
Chithra S, 9/27/2025, 1:47 PM
Modified By
Chithra S, 9/27/2025, 1:52 PM
Workflow Actions
Edit
Immediate Workflow Actions
Type
Description
Email Alert
Send email to Assignment Owner / Teacher
Time-Dependent Workflow Actions
See an example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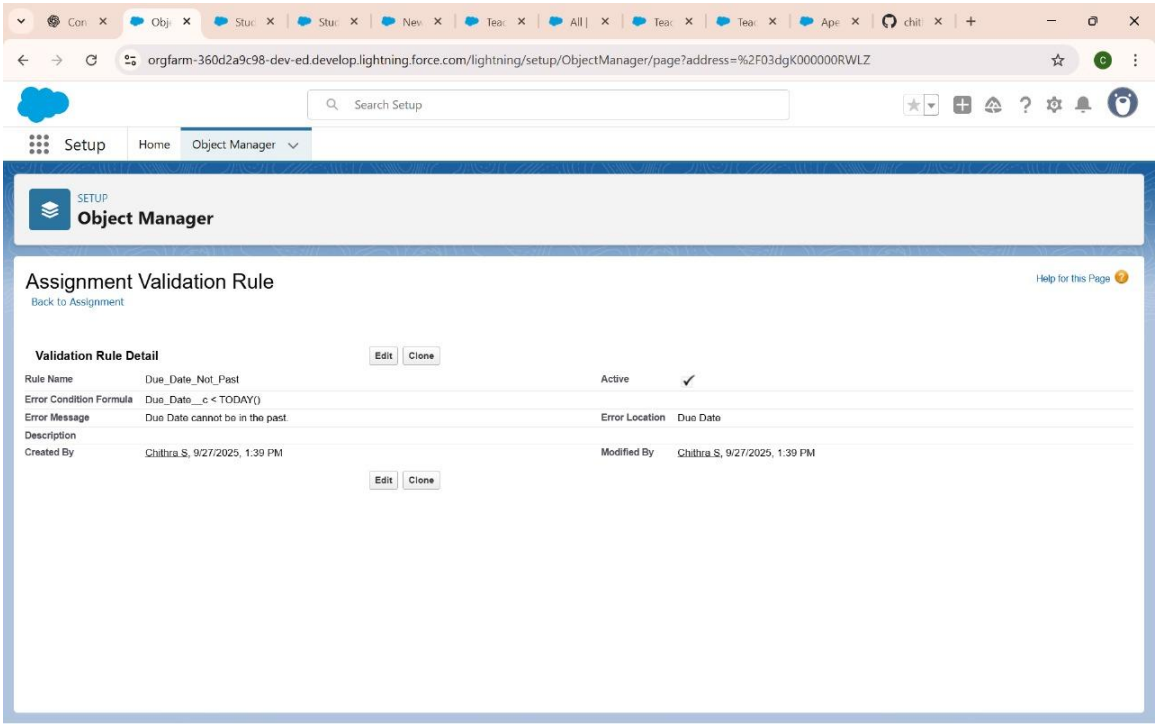
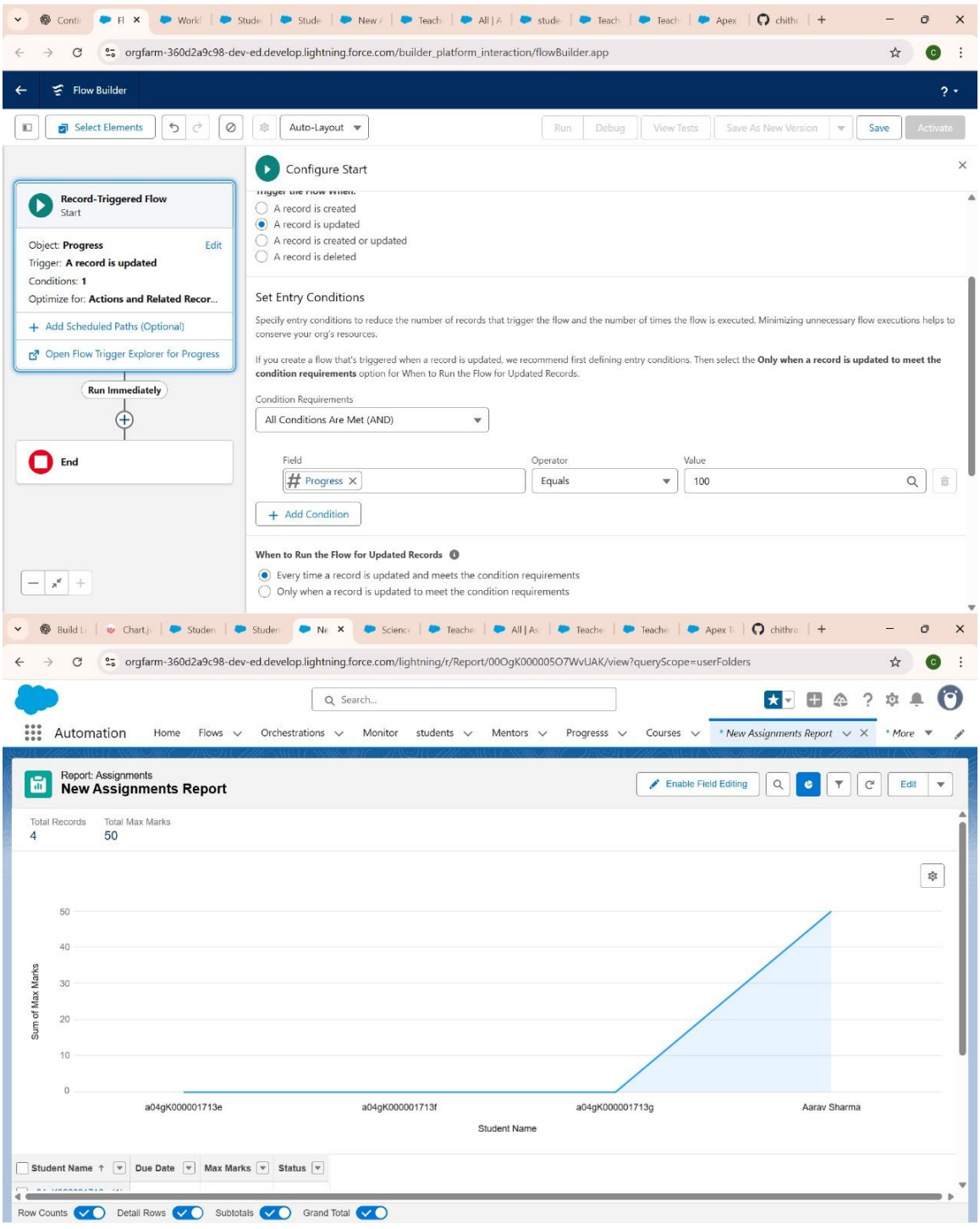
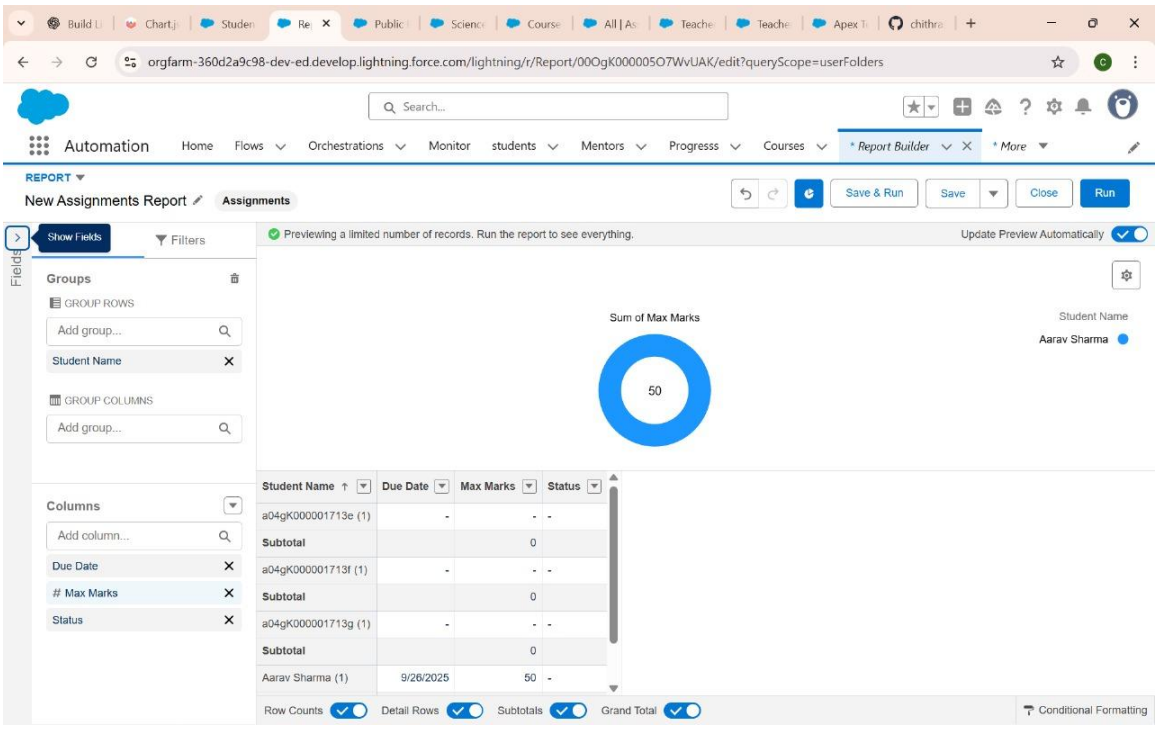
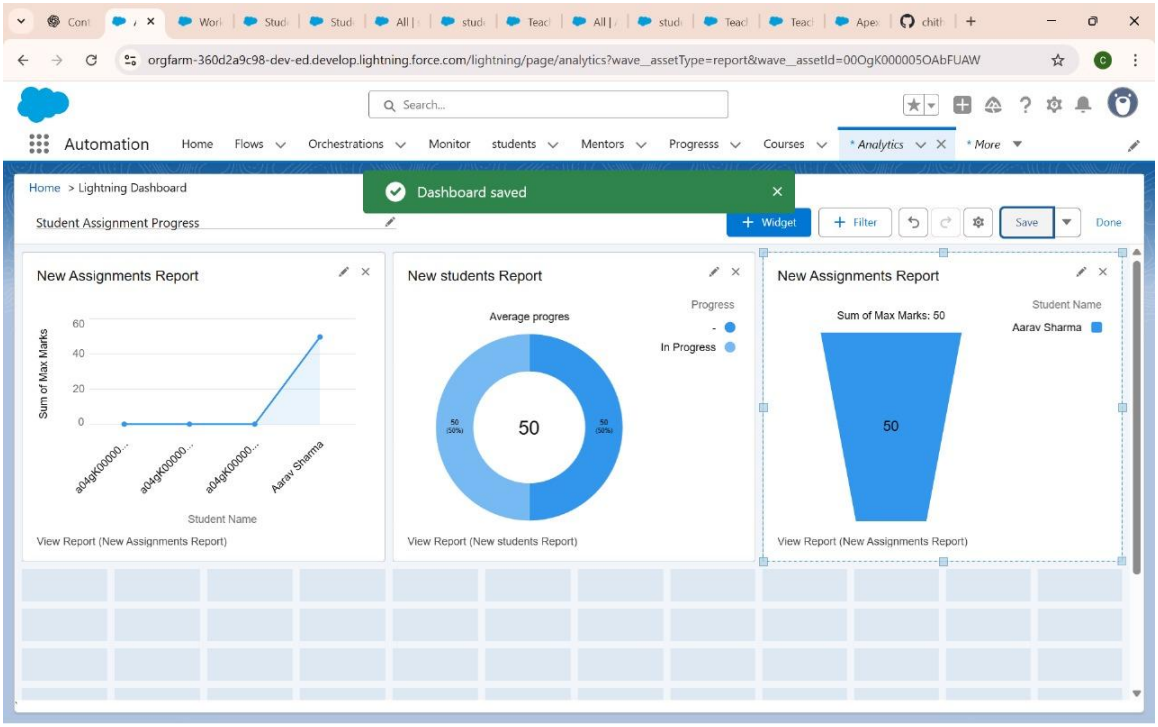
Search Setup
Setup
Home
Object Manager
SETUP
Object Manager
student Validation Rule
Back to student
Help for this Page
Validation Rule Detail
Edit
Clone
Rule Name
Progress_Limit
Active
Error Condition Formula
progres__c > 100
Error Message
Progress cannot exceed 100%
Error Location
progres
Description
Created By
Chithra S, 9/27/2025, 1:44 PM
Modified By
Chithra S, 9/27/2025, 1:44 PM
Edit
Clone


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/setup/ObjectManager/page?address=%2F03dgK000000RWLZ
Search Setup
Setup
Home
Object Manager
SETUP
Object Manager
Assignment Validation Rule
Back to Assignment
Help for this Page
Validation Rule Detail
Edit
Clone
Rule Name
Due_Date_Not_Past
Active
Error Condition Formula
Due_Date__c < TODAY()
Error Message
Due Date cannot be in the past.
Error Location
Due Date
Description
Created By
Chithra S, 9/27/2025, 1:39 PM
Modified By
Chithra S, 9/27/2025, 1:39 PM
Edit
Clone


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/builder_platform_interaction/flowBuilder.app
Flow Builder
Select Elements
Auto-Layout
Run
Debug
View Tests
Save As New Version
Save
Activate
Record-Triggered Flow
Start
Object: Progress
Edit
Trigger: A record is updated
Conditions: 1
Optimize for: Actions and Related Recor...
Add Scheduled Paths (Optional)
Open Flow Trigger Explorer for Progress
Run Immediately
End
Configure Start
A record is created
A record is updated
A record is created or updated
A record is deleted
Set Entry Conditions
Specify entry conditions to reduce the number of records that trigger the flow and the number of times the flow is executed. Minimizing unnecessary flow executions helps to conserve your org's resources.
If you create a flow that's triggered when a record is updated, we recommend first defining entry conditions. Then select the Only when a record is updated to meet the condition requirements option for When to Run the Flow for Updated Records.
Condition Requirements
All Conditions Are Met (AND)
Field
Operator
Value
Progress
Equals
100
Add Condition
When to Run the Flow for Updated Records
Every time a record is updated and meets the condition requirements
Only when a record is updated to meet the condition requirements
orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/r/Report/00OgK000005O7WvUAK/view?queryScope=userFolders
Search...
Automation
Home
Flows
Orchestrations
Monitor
students
Mentors
Progresss
Courses
New Assignments Report
More
Report: Assignments
New Assignments Report
Enable Field Editing
Edit
Total Records
4
Total Max Marks
50
Sum of Max Marks
50
40
30
20
10
0
a04gK000001713e
a04gK000001713f
a04gK000001713g
Aarav Sharma
Student Name
Student Name
Due Date
Max Marks
Status
Row Counts
Detail Rows
Subtotals
Grand Total


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/r/Report/00OgK000005O7WvUAK/edit?queryScope=userFolders
Automation
Home
Flows
Orchestrations
Monitor
students
Mentors
Progresss
Courses
* Report Builder
* More
REPORT
New Assignments Report
Assignments
Save & Run
Save
Close
Run
Show Fields
Filters
Previewing a limited number of records. Run the report to see everything.
Update Preview Automatically
Groups
GROUP ROWS
Add group...
Student Name
GROUP COLUMNS
Add group...
Columns
Add column...
Due Date
Max Marks
Status
Sum of Max Marks
50
Student Name
Aarav Sharma
Student Name
Due Date
Max Marks
Status
a04gK000001713e (1)
Subtotal
a04gK000001713f (1)
Subtotal
a04gK000001713g (1)
Subtotal
Aarav Sharma (1)
9/26/2025
50
Row Counts
Detail Rows
Subtotals
Grand Total
Conditional Formatting


orgfarm-360d2a9c98-dev-ed.develop.lightning.force.com/lightning/page/analytics?wave__assetType=report&wave__assetId=00OgK000005OAbFUAW
Automation
Home
Flows
Orchestrations
Monitor
students
Mentors
Progresss
Courses
* Analytics
* More
Home > Lightning Dashboard
Dashboard saved
Student Assignment Progress
Widget
Filter
Save
Done
New Assignments Report
Sum of Max Marks
60
40
20
0
Student Name
View Report (New Assignments Report)
New students Report
Average progres
50
Progress
-
In Progress
View Report (New students Report)
New Assignments Report
Sum of Max Marks: 50
50
Student Name
Aarav Sharma
View Report (New Assignments Report)