Project Title: CareerBridge CRM – Connecting Youth Skills to Jobs

Project Overview:

CareerBridge CRM is a Salesforce-based solution designed to bridge the gap between youth talent, NGOs, and employers. The system allows youth to register their skills, employers to post jobs, and automatically matches candidates to jobs based on their skills. It manages the entire interview lifecycle, sends email notifications, and provides dashboards and reports for NGOs to track outcomes. The solution ensures efficiency, transparency, and scalability in youth employment initiatives.

Objectives

- Enable youth to register with essential details and skills.
- Allow employers to post jobs with skill requirements.
- Automate skill-based job matching and interview scheduling.
- Provide real-time email notifications to youth.
- Generate reports and dashboards for NGO monitoring.
- Ensure secure, scalable, and maintainable Salesforce CRM.

Phase 1: Problem Understanding & Industry Analysis

Requirement Gathering

- Conducted sessions with NGOs, Youth Coordinators, and Employers.
- Core requirements:
    1. Youth registration with basic details and skills.
    2. Employer job postings.
    3. Auto-matching of youth ↔ jobs based on skills.
    4. Automatic interview creation and tracking.

5. Email notifications at each step.
6. Reports and dashboards for monitoring.

Scope: Digital bridge between youth, NGOs, and employers.

Stakeholder Analysis

- **Primary:** Youth, Employers, NGOs/Placement Coordinators.
- **Secondary:** System Administrators, Salesforce Platform.

Business Process Mapping

Current Process (Manual): Manual resume submission → NGOs connect youth → Communication gaps → No centralized reporting.
Proposed Process (Automated via Salesforce): Youth registration → Employer job postings → Auto-matching → Interviews scheduled → Emails sent → Dashboards for NGOs.

Industry-Specific Use Case Analysis

- Existing job portals are generic and not NGO-specific.
- CareerBridge centralizes youth/job data, provides skill-based matching, and automated interview lifecycle.

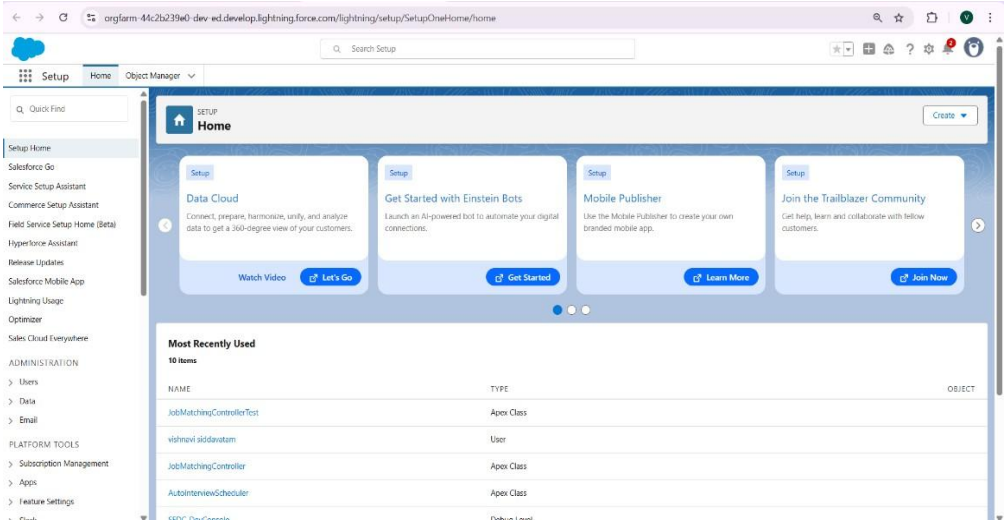
AppExchange Exploration

- Explored recruitment apps; none provide NGO-focused youth employability features.
- Decision: Build custom solution using Salesforce objects (Youth, Job, Skill, Interview), flows, and custom emails.

Phase 2: Org Setup & Configuration

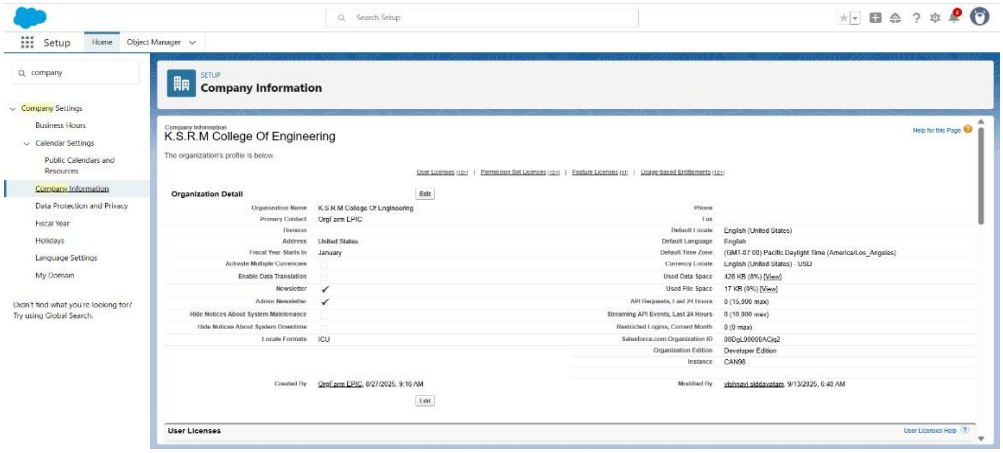
Step 1: Open Setup

1. Login to **Salesforce Lightning**.
2. Click the **Gear (☼O◦) icon** in the top-right → select **Setup**.



Step 2: Update Company Information

1. In Setup, use **Quick Find** → type **Company Information** → open it.
2. Click **Edit**.
3. Update:
   - **Organization Name:** KSRM College of Engineering
   - **Default Time Zone:** (09:00 – 18:00)
4. Click **Save**



Step 3: Set Business Hours

1. Quick Find → **Business Hours** → click **New**.
2. Fill in:
   - **Name:** Default Hours
   - **Hours:** 09:00 – 18:00 (or your actual business hours)
3. Click **Save**.

Why: Defines working hours for workflows, notifications, and approval processes.

Step 4: Add Holidays

1. Quick Find → **Holidays** → click **New**.
2. Add important dates, for example:
   - Independence Day
   - Republic Day
3. Click **Save**.

Why: Salesforce respects holidays for time-dependent automation (tasks, emails).

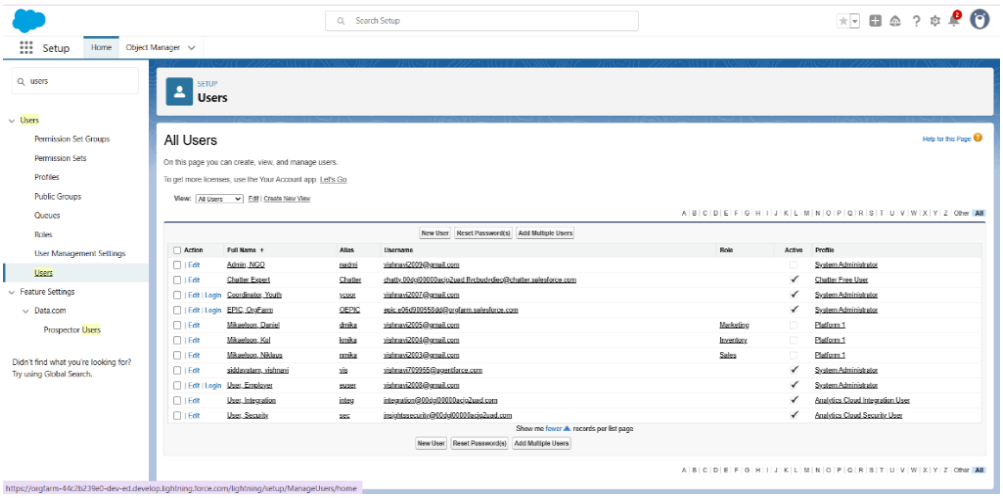
Step 5: Create Test Users

You need at least **3 users**: Youth Coordinator, Employer, NGO Admin.

1. Quick Find → **Users** → click **New User**.
2. Fill example details

Name	Username	Profile	Role
Youth Coordinator	your.email+yc@sandbox.my.salesforce.com	System Administrator	Youth Coordinator
Employer	employer@sandbox.my.salesforce.com	Standard User	Employer
NGO Admin	ngo@sandbox.my.salesforce.com	Standard User	NGO Manager

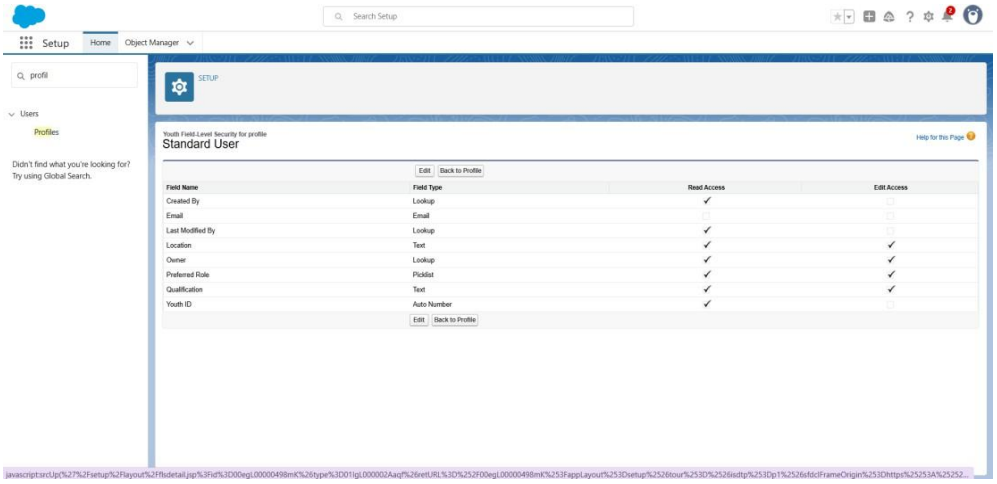
3. Click **Save** after each user.



Step 6: Configure Profiles (Object Permissions)

1. Quick Find → **Profiles** → open a profile (e.g., *Standard User*).
2. Scroll to **Object Settings** → select object Youth__c → click **Edit**.
3. Grant permissions:
   - **Read, Create, Edit** (as required)

4. Click **Save**



Step 7: Create Role Hierarchy

1. Quick Find → **Roles** → click **Set Up Roles** → **Add Role**.

2. Example hierarchy:

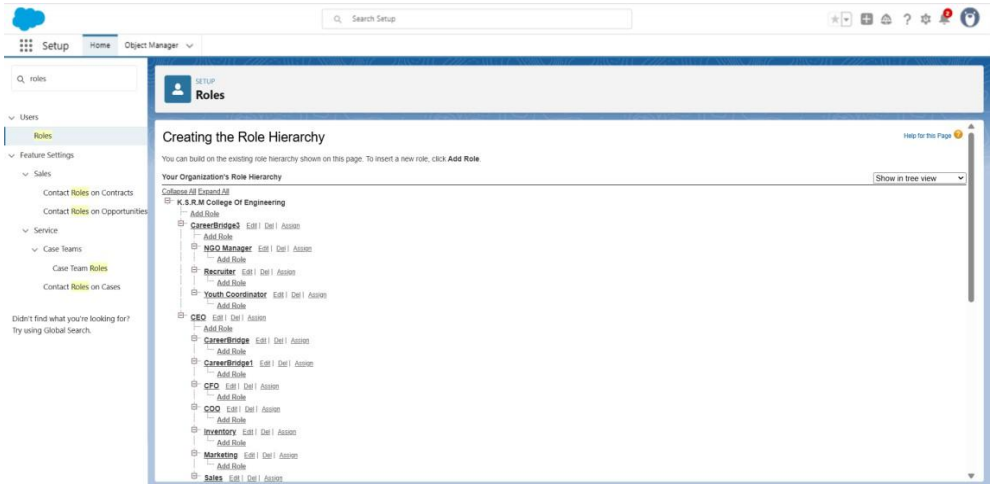
CareerBridge

├── NGO Manager

├── Youth Coordinator

└── Recruiter

3. Click **Save**.



Step 8: Permission Sets

1. Quick Find → **Permission Sets** → click **New**.
2. Label: Interview Scheduler PS → **Save**.
3. Click **Manage Assignments** → assign to users who need extra permissions.

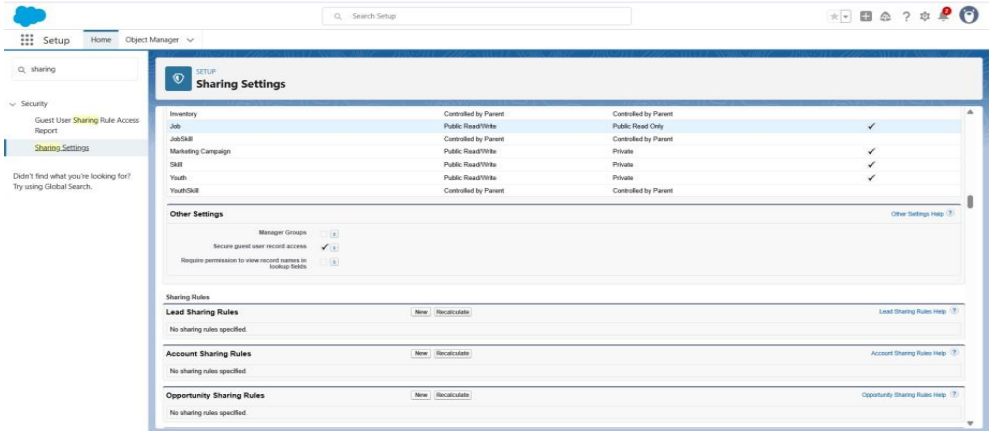
Why: Grants additional permissions without changing profiles.

Step 9: Set Org-Wide Defaults (OWD) & Sharing

1. Quick Find → **Sharing Settings** → click **Edit**.
2. Set defaults:

Object	Default Access
Youth__c	Private
Job__c	Public Read Only
Interview__c	Private

1. Create a **Sharing Rule**:
   - Scroll to **Youth__c** → click **New**.
   - Name: Share Youth to Recruiters
   - Rule Type: Owner-based
   - Shared To: Role → Recruiter
   - Click **Save.**



Step 10: Enable Admin Login Access

1. Quick Find → **Users** → select a user → click the down-arrow → **Login.**
2. If option missing: Setup → **Login Access Policies** → enable.

Why: Admins can log in as other users for testing.

Phase 3: Data Modeling & Relationships

This phase covers creating custom objects, fields, relationships, layouts, and adding sample data.

Step 1: Create Custom Objects

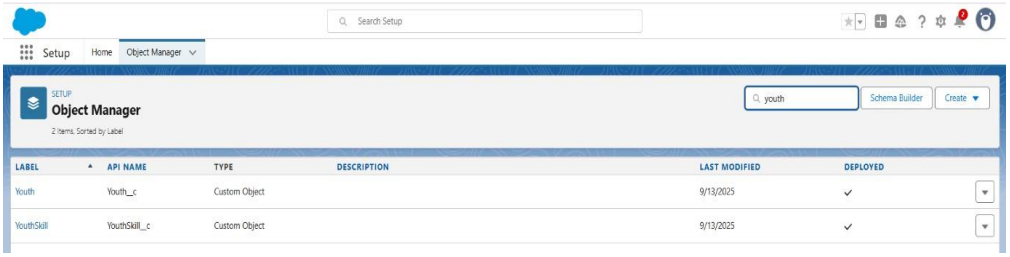
Navigation:

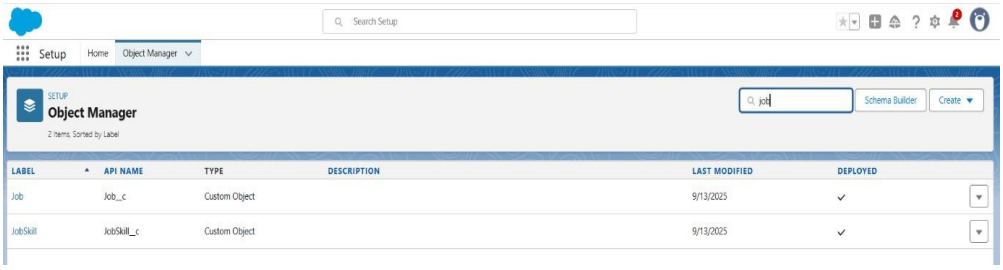
Setup → Object Manager → Create → Custom Object

Objects to create:

Object Name	API Name	Purpose
Youth	Youth__c	Tracks youth registration info
Job	Job__c	Tracks job postings

Skill	Skill_c	Stores skill names like Java, Python
Interview	Interview_c	Stores interview details
YouthSkill	YouthSkill_c	Links Youth → Skill (Master-Detail on Youth, Lookup to Skill)
JobSkill	JobSkill_c	Links Job → Skill (Master-Detail on Job, Lookup to Skill)





Step 2: Create Fields

Each object needs fields to capture record details.

Youth__c Fields

Field Name	Type	Notes
Email__c	Email	Email address of youth
Location__c	Text(255)	City/region
Qualification__c	Text	Education level

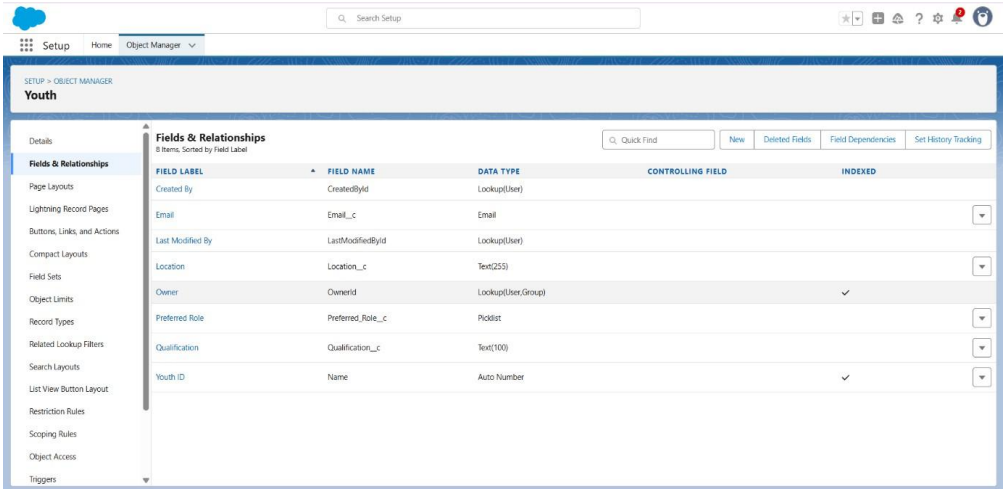
Preferred_Role__c Picklist Options: Developer, Designer, Sales

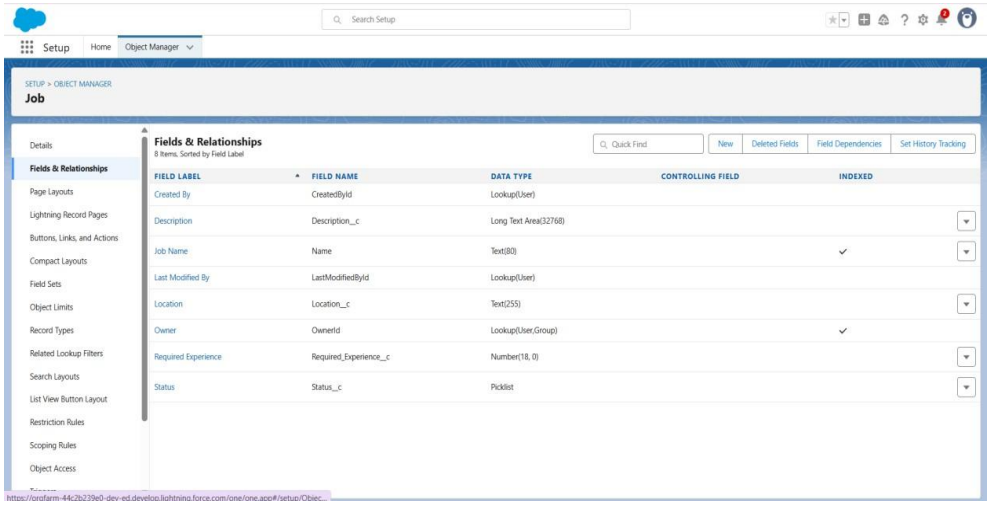
Job__c Fields

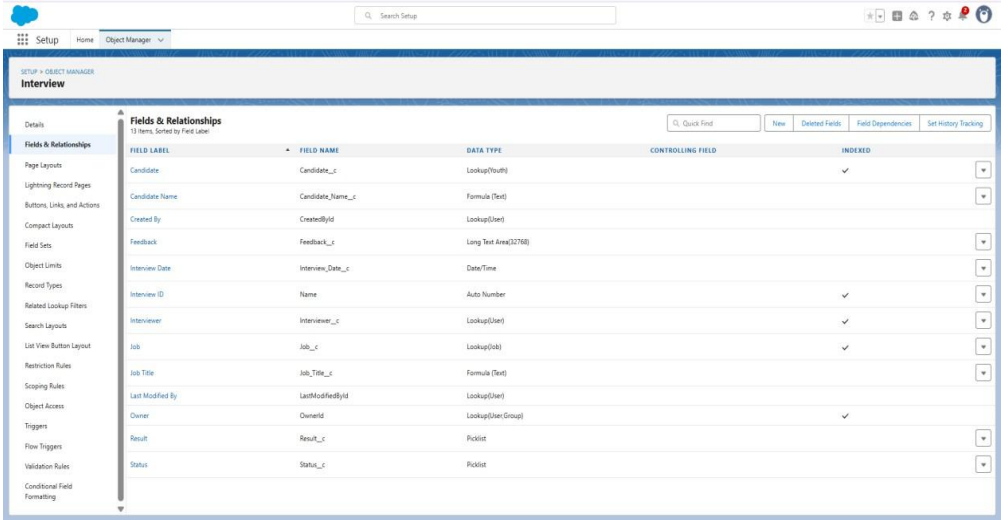
Field Name	Type	Notes
Location__c	Text(255)	City/region of job
Description__c	Long Text	Job description
Required_Experience__c	Number/Text	Experience in years
Status__c	Picklist	Options: Open, Closed

Interview__c Fields

Field Name	Type	Notes
Interview_Date__c	DateTime	Scheduled date/time
Status__c	Picklist	Scheduled, Completed, Cancelled, Feedback_Given
Candidate__c	Lookup → Youth__c	Links to the youth being interviewed
Job__c	Lookup → Job__c	Links to the job
Interviewer__c	Lookup → User	Recruiter/interviewer
Feedback__c	Long Text Area	Interview feedback







Step 3:Create Relationships

YouthSkill_c

- Master-Detail → Youth__c
- Lookup → Skill__c

JobSkill__c

- Master-Detail → Job__c

- Lookup → Skill__c

Step 4 : Configure Page

Layouts Youth_c Layout

- Fields: Email, Location, Qualification, Preferred Role
- Related Lists: YouthSkill__c, Interview__c

Job__c Layout

- Fields: Location, Description, Required Experience, Status
- Related Lists: JobSkill__c, Interview__c

Interview__c Layout

- Fields: Candidate, Job, Interview Date, Interviewer, Status, Feedback

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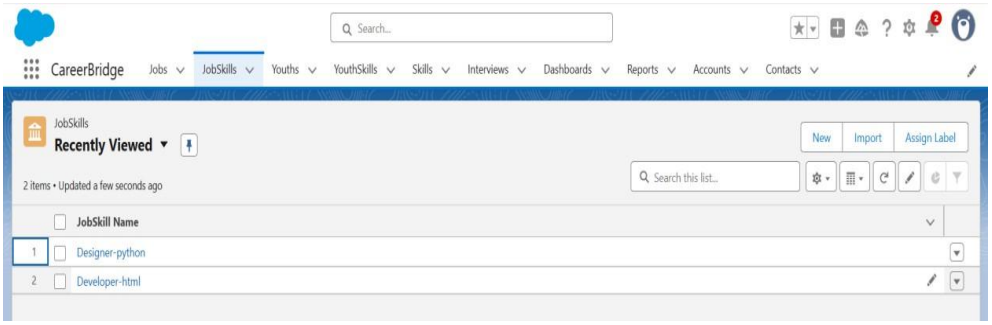
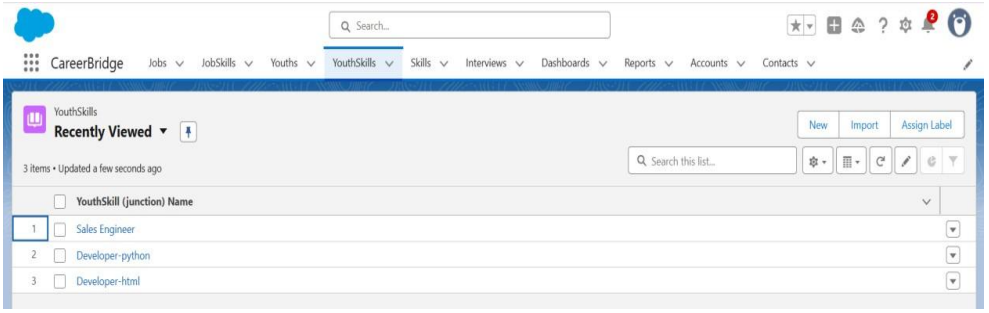
Step 5 : Add Sample Records

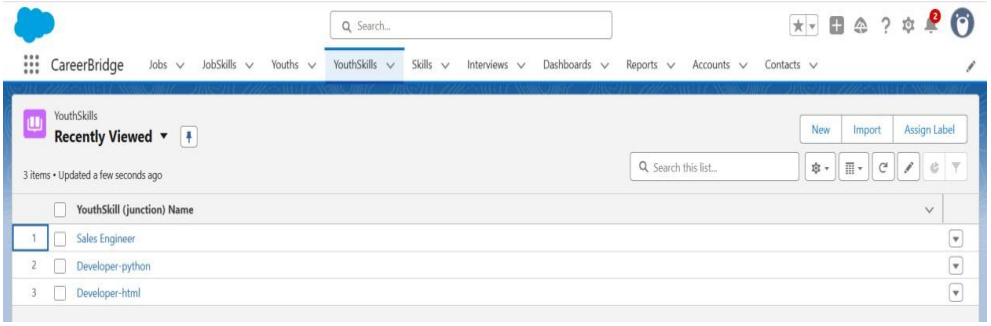
- **Skills:** Java, Python, HTML
- **Youth:** Test Youth → Email: test@y.com, Location: Hyderabad
- **Job:** Java Developer → Location: Hyderabad, Status: Open

Link YouthSkill & JobSkill

- Test Youth → Java (YouthSkill)
- Java Developer Job → Java (JobSkill)







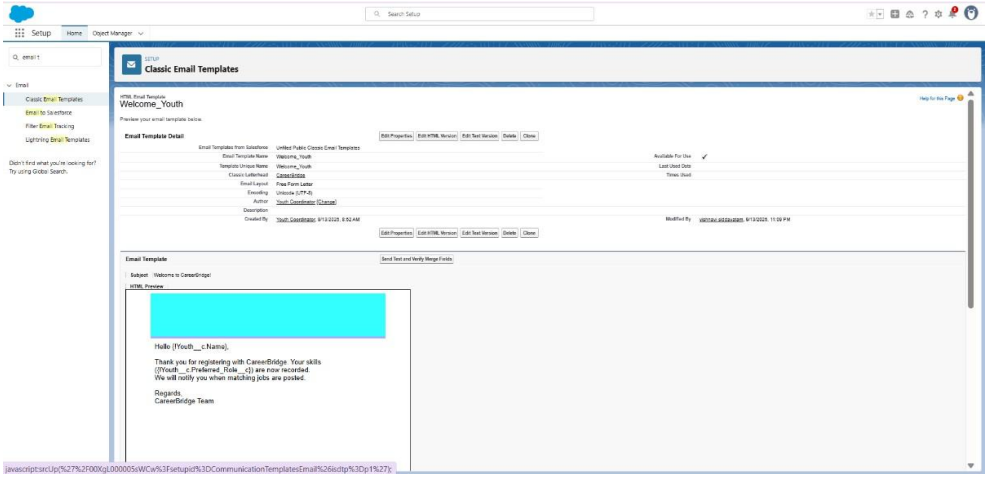
Phase 4: Process Automation (Admin)

Goal: Automate youth–job matching, interview scheduling, and email notifications, while ensuring data integrity.

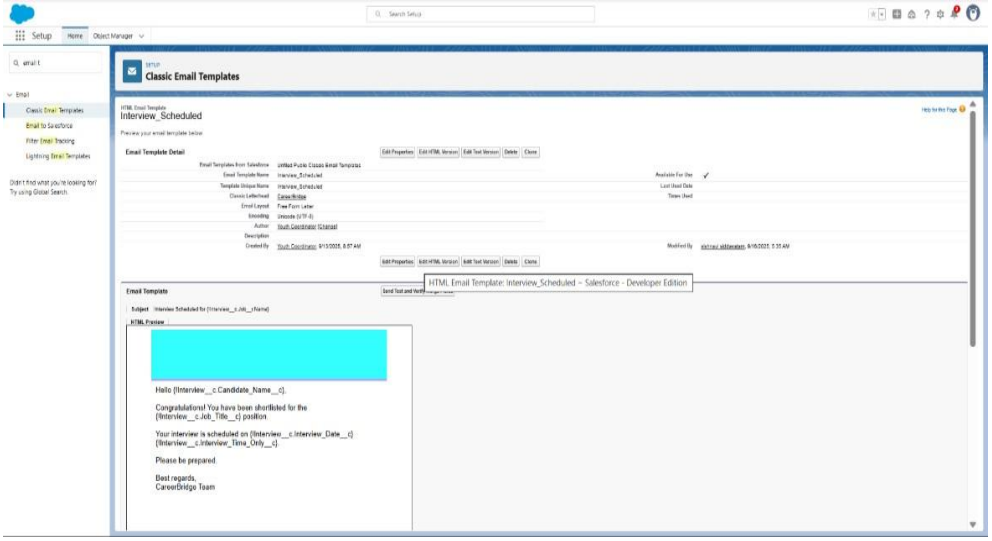
Step 1: Create Email Templates

1. Click **Setup (☼O◦)** → In Quick Find, type **Email Templates** → Select **Email Templates**.
2. Click **New Email Template** → Select **Lightning Email Template**.
3. Fill details like **Name** and **Subject**, then design the email body.
4. Save the template.

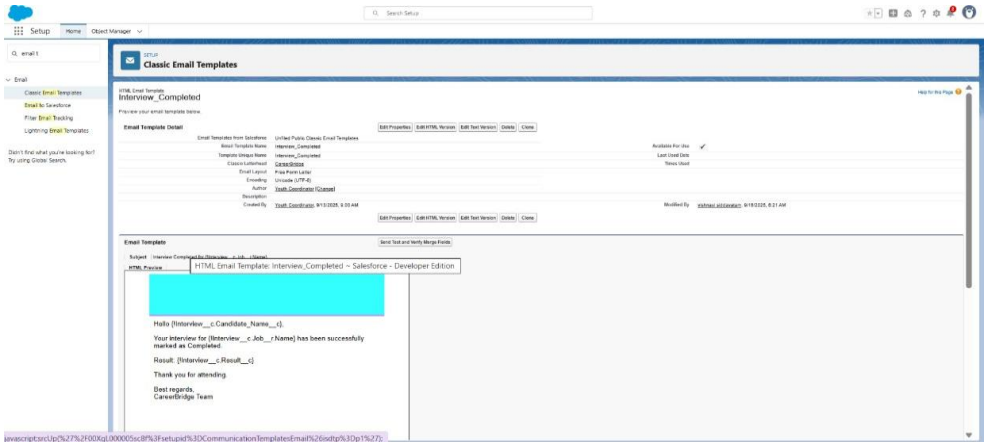
- **Welcome Email** → Sent after youth registration.



- **Interview Scheduled Email** → Sent after youth is matched with a job and interview is created.



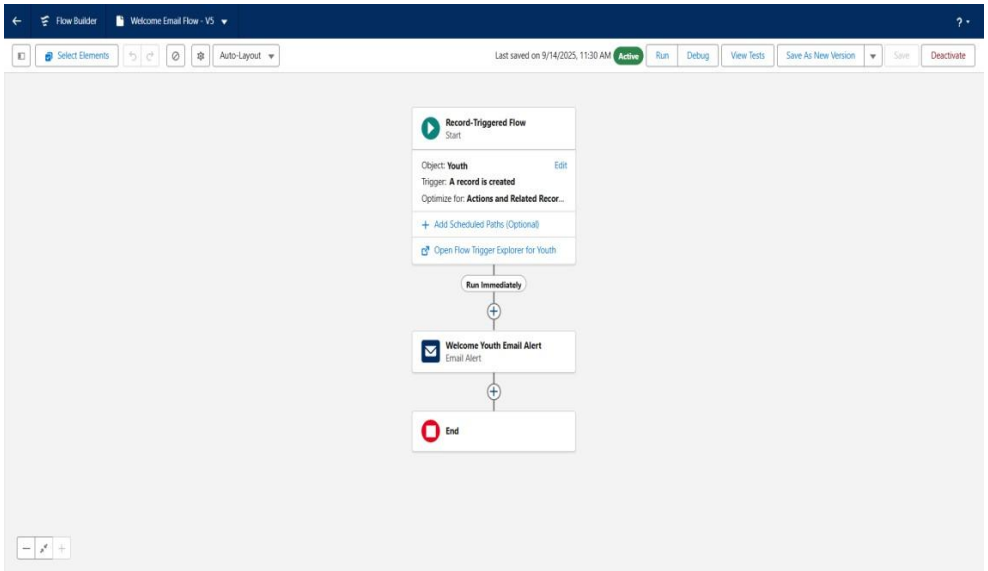
- **Interview Completed Email** → Sent after interview status is marked as Completed.



Step 2: Build Flows

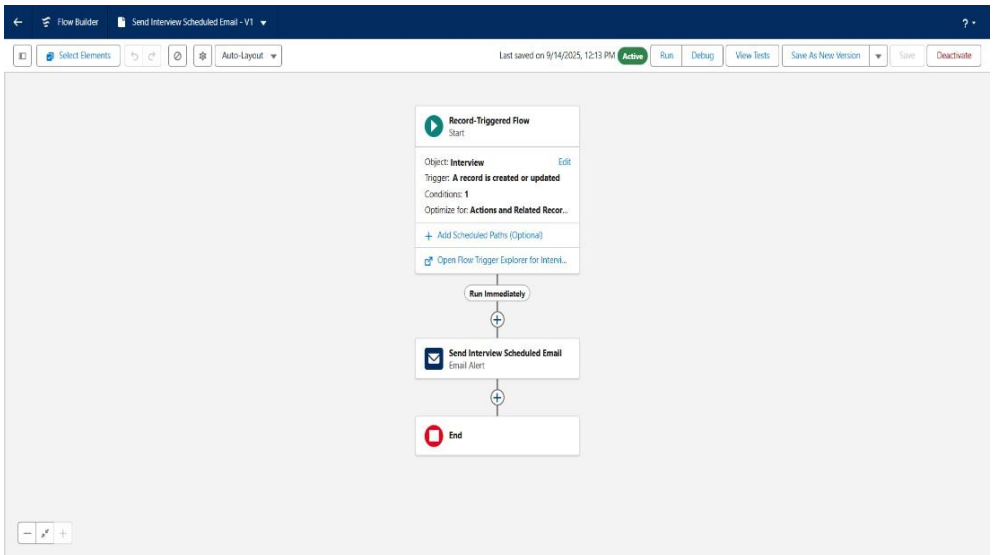
1. Welcome Email Flow (After Registration)

1. Click **Setup** ( ) → Quick Find → **Flows** → **New Flow**.
2. Select **Record-Triggered Flow**.
3. Choose **Object: Youth__c** → Trigger: **When record is created** → **After Save**.
4. Add **Action** → **Send Email** → Select **Welcome Email Template**.
5. Save and Activate.



2.Interview Scheduled Flow (After Match & Scheduling)

1. Click **Setup → Flows → New Flow**.
2. Select **Record-Triggered Flow → Object: Job_c** → Trigger: **Created or Updated → After Save**.
3. Add **Get Records → JobSkill__c** (fetch required skills).
4. Add **Get Records → YouthSkill__c** (find youth with matching skills).
5. Add **Loop** → For each Youth, **Create Interview__c record** (Candidate, Job, Status = Scheduled, Date).
6. Add **Action → Send Email** → Select **Interview Scheduled Template**.
   Save and Activate

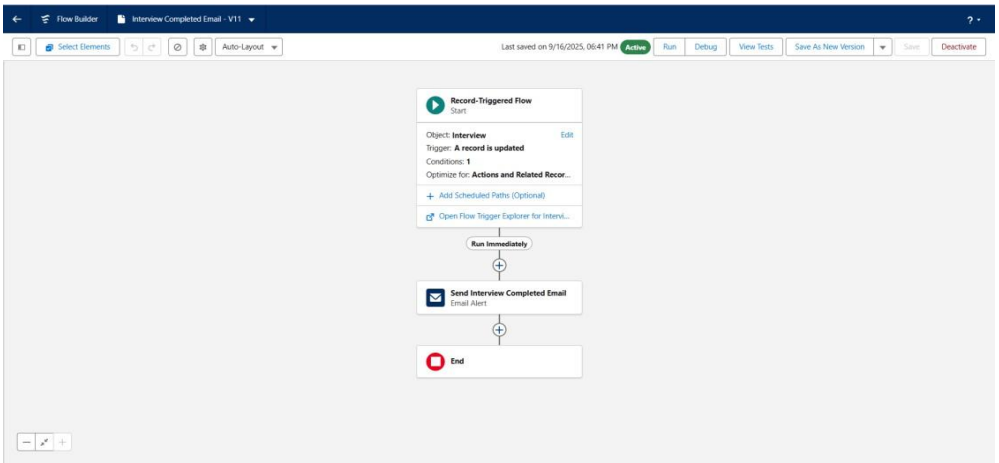


3.Interview Completed Flow (After Interview Completion)

6. Click **Setup → Flows → New Flow**.
7. Select **Record-Triggered Flow → Object: Interview__c**.
8. Trigger: **When record is updated → After Save**.
9. Add **Decision Element** → Condition: Status__c = Completed.

10. Add **Action → Send Email** → Select **Interview Completed Template**.

11. Save and Activate.



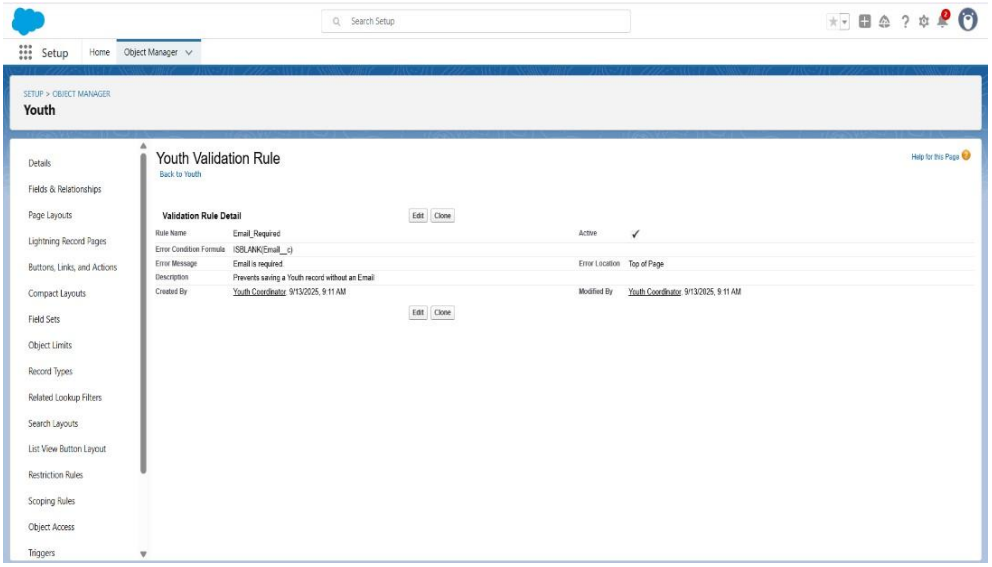
Step 3: Add Validation Rules

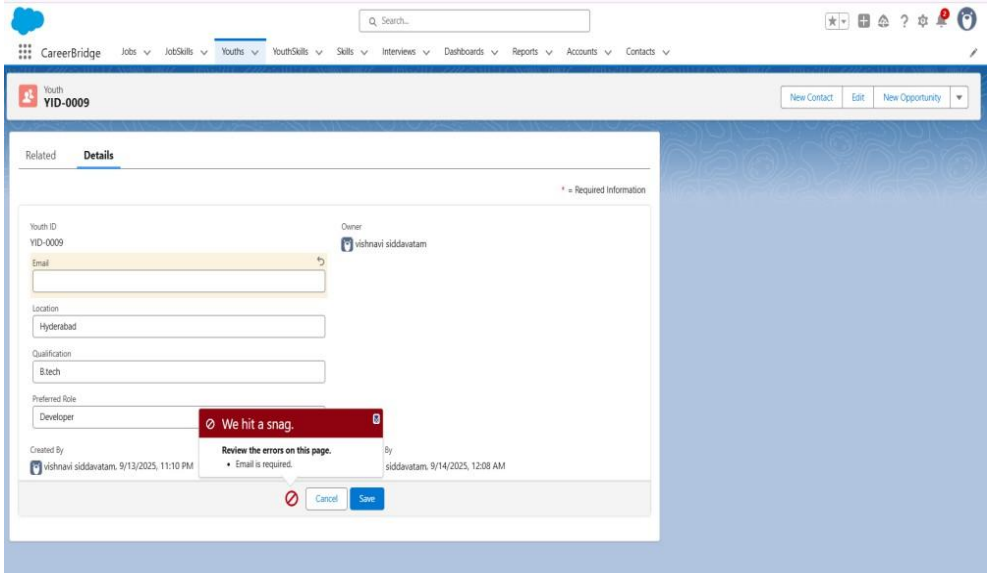
1. Click **Setup → Object Manager → Youth__c → Validation Rules → New**.

2. Create Rule: **Email Required**

   - Formula: ISBLANK(Email__c)

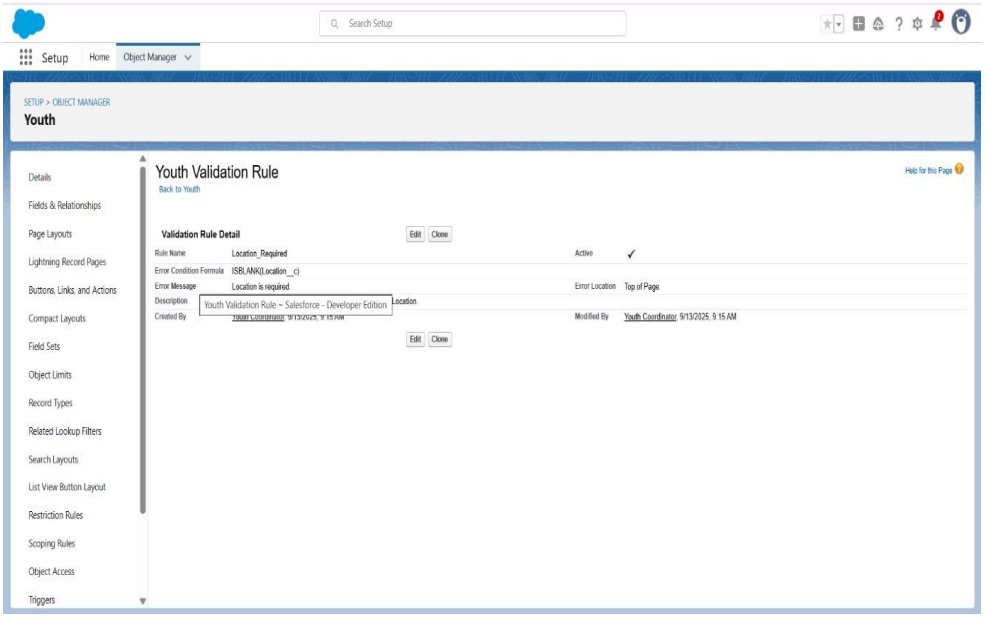
   - Error: “Email is required.”

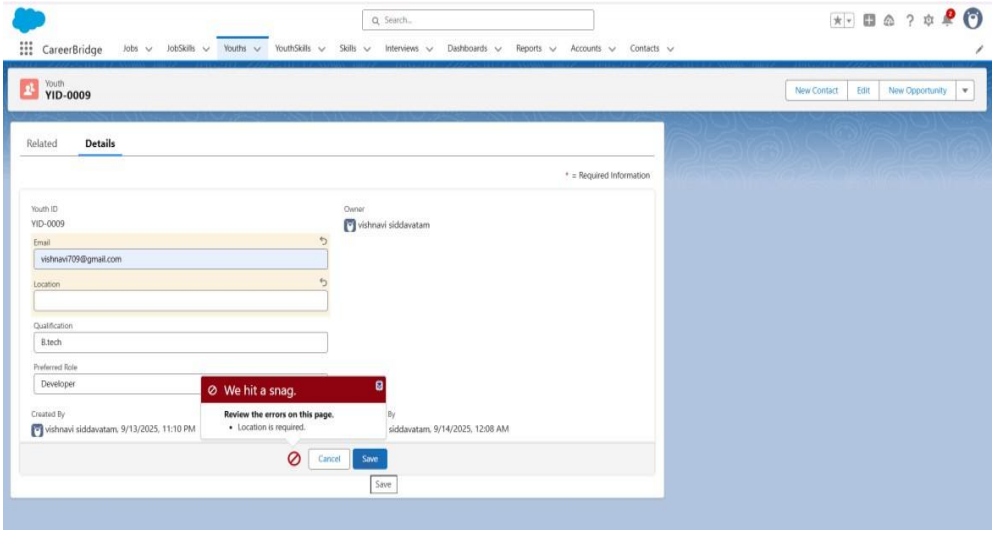




3.Create Rule: **Location Required**

- Formula: ISBLANK(Location__c)
- Error: “Location is required.”





Phase 5: Apex Programming (Developer)

Goal:

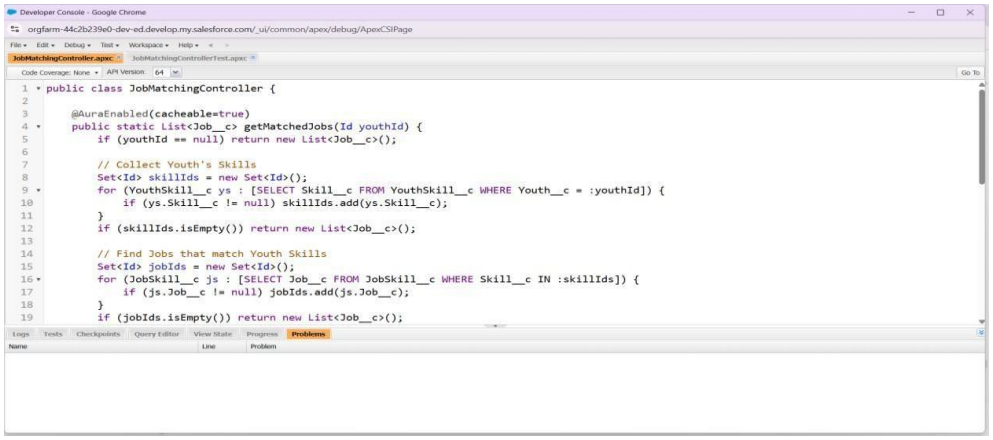
- Match youth to jobs based on skills using Apex.
- Automatically create Interview__c records.
- Handle bulk data safely and meet Salesforce deployment standards.

Step 1: Apex Class — JobMatchingController

Purpose: Perform matching and create interviews programmatically.

Steps to create Apex Class:

1. Click **Setup → Quick Find → Apex Classes → New**.
2. Copy and paste the JobMatchingController code below.
3. Click **Save**



```
public class JobMatchingController {

    @AuraEnabled(cacheable=true)
    public static List<Job__c> getMatchedJobs(Id youthId) {
        if (youthId == null) return new List<Job__c>();

        // Collect Youth's Skills
        Set<Id> skillIds = new Set<Id>();
        for (YouthSkill__c ys : [SELECT Skill__c FROM YouthSkill__c WHERE Youth__c = :youthId]) {
            if (ys.Skill__c != null) skillIds.add(ys.Skill__c);
        }
        if (skillIds.isEmpty()) return new List<Job__c>();

        // Find Jobs that match Youth Skills
        Set<Id> jobIds = new Set<Id>();
        for (JobSkill__c js : [SELECT Job__c FROM JobSkill__c WHERE Skill__c IN :skillIds]) {
            if (js.Job__c != null) jobIds.add(js.Job__c);
        }
        if (jobIds.isEmpty()) return new List<Job__c>();
```

Code Logic Overview:

- **Method 1: getMatchedJobs(youthId)**
    - Fetch youth skills.
    - Find jobs requiring those skills.
    - Return matched jobs (up to 100 records).

Method 2: createInterview(youthId, jobId, interviewDateIso, interviewerId)

- Converts ISO date string → Datetime.
- Creates Interview__c record with Status__c = Scheduled.
- Returns the created interview Id.

code works for these tasks. **Small improvement:** In AutoInterviewScheduler, query COUNT() inside a loop — for very large data, consider bulkifying (collect all youth + jobs, then insert interviews in one DML).

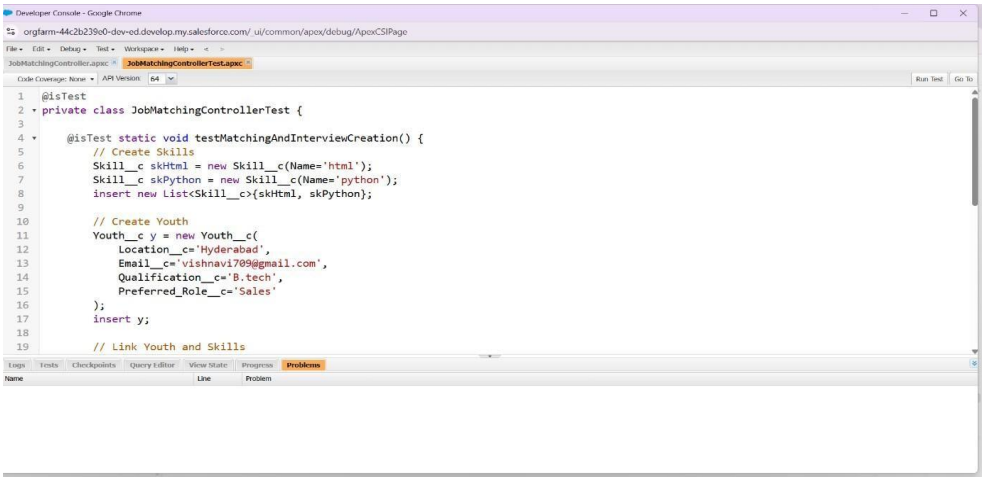
```
        // Test Controller
        Test.startTest();
        List<Job__c> matched = JobMatchingController.getMatchedJobs(y.Id);
        System.assertEquals(2, matched.size(), 'Youth should match 2 jobs');

        String isoDate = Datetime.now().addDays(2).formatGMT('yyyy-MM-dd\'T\'HH:mm:ss\'Z\'');
        Id interviewId = JobMatchingController.createInterview(y.Id, jobDev.Id, isoDate, UserInfo.getUserId());
        System.assertNotEquals(null, interviewId, 'Interview Id should not be null');
        Test.stopTest();
    }
}
```

Step 2: Apex Test Class — JobMatchingControllerTest

Purpose: Ensure at least 75% coverage and test functionality.

Steps to create Test Class:

1. Click **Setup → Apex Classes → New**.
2. Copy and paste the JobMatchingControllerTest code below.
3. Click **Save**.



```
@isTest
private class JobMatchingControllerTest {

    @isTest static void testMatchingAndInterviewCreation() {
        // Create Skills
        Skill__c skHtml = new Skill__c(Name='html');
        Skill__c skPython = new Skill__c(Name='python');
        insert new List<Skill__c>{skHtml, skPython};

        // Create Youth
        Youth__c y = new Youth__c(
            Location__c='Hyderabad',
            Email__c='vishnavi709@gmail.com',
            Qualification__c='B.tech',
            Preferred_Role__c='Sales'
        );
        insert y;

        // Link Youth and Skills
```

Test Logic Overview:

- Creates test Skill__c, Youth__c, YouthSkill__c, Job__c, JobSkill__c.
- Tests getMatchedJobs() → asserts correct number of jobs.

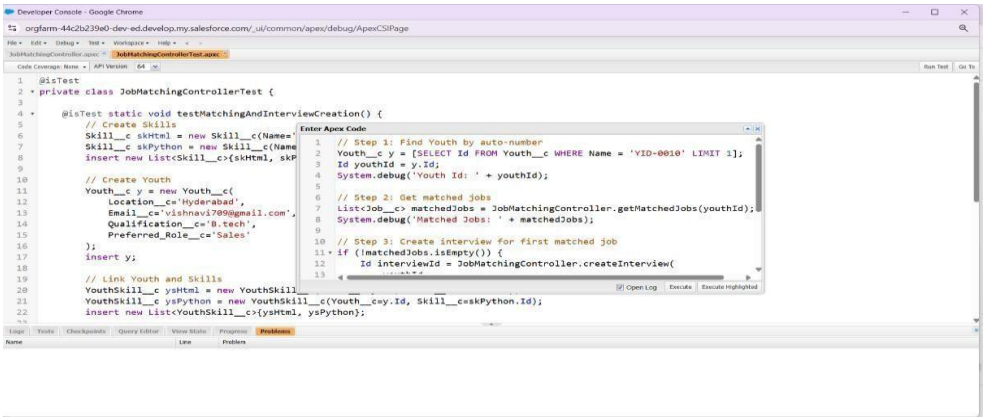
- Tests createInterview() → asserts interview Id is not null.

Step 3: Execute Apex for Individual Youth

Steps:

1. Open **Developer Console → Execute Anonymous Window**.

2. Run this snippet (replace YID-0010 with actual youth auto-number):



This works — it will create an interview for the first matched job

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Step 4: Scheduler — AutoInterviewScheduler

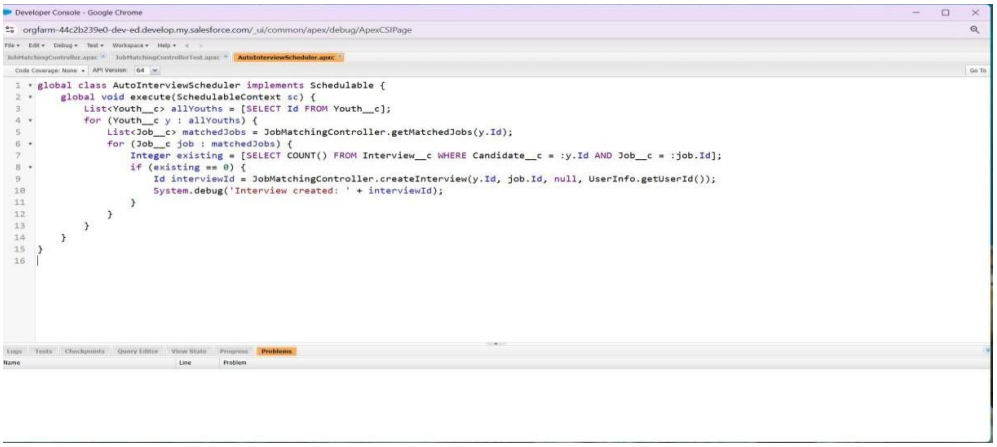
Purpose: Automatically create interviews for all youth. **Steps to schedule:**

1. **Click Setup → Apex Classes → Schedule Apex → New.**

2. Choose **AutoInterviewScheduler** class.

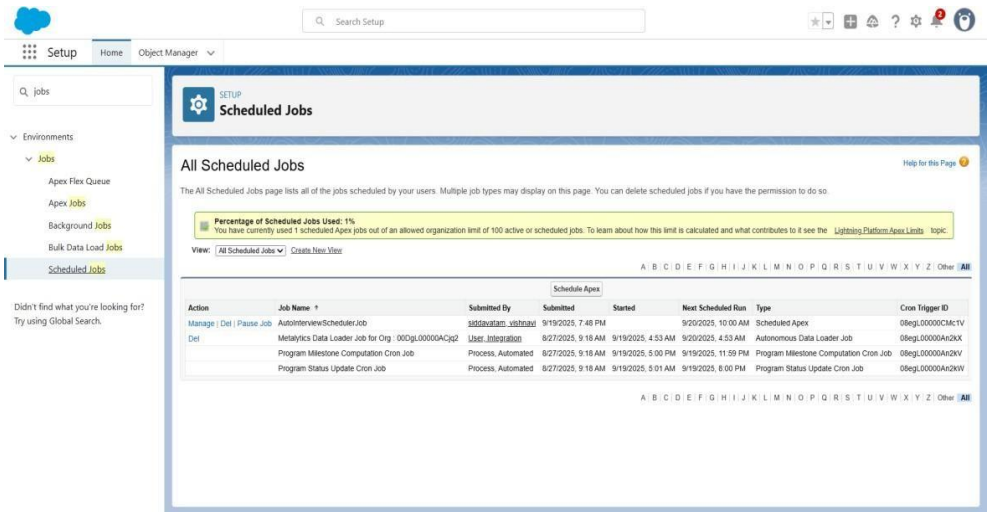
3. Set frequency (daily/hourly) and start/end dates.

4. Click **Save** to activate scheduler.



Logic:

- Loops through all youth → gets matched jobs → creates interview if none exists.
- System.debug() logs each creation.

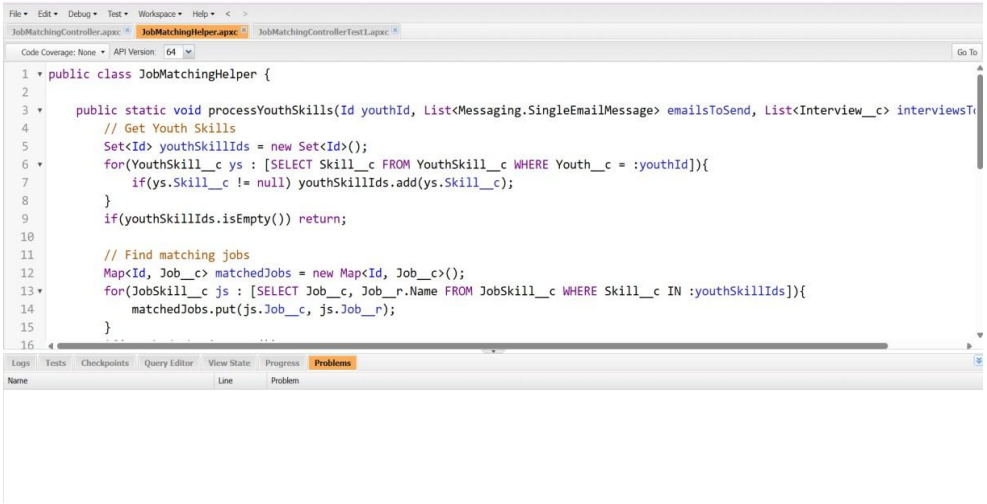


Step 5: Apex Helper Class — JobMatchingHelper

Purpose Handle automatic interview creation and email sending when youth skills match jobs.

Steps to create Helper Class:

1. Click **Setup → Apex Classes → New**.
2. Copy and paste the **JobMatchingHelper** Code below.
3. Click **Save**.

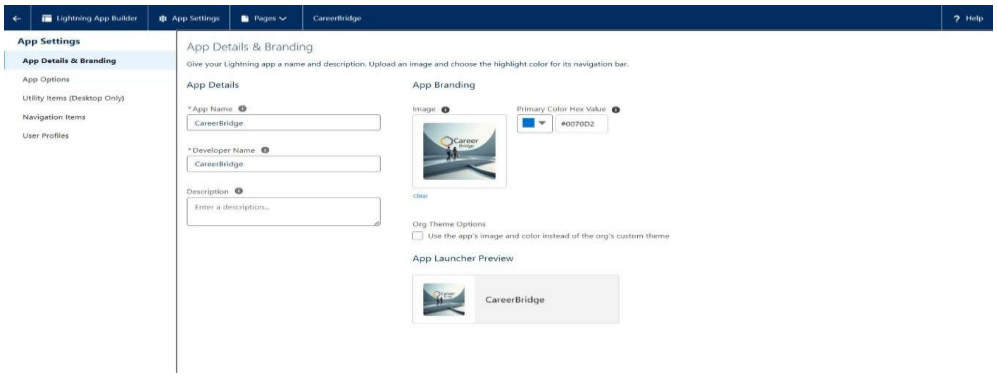


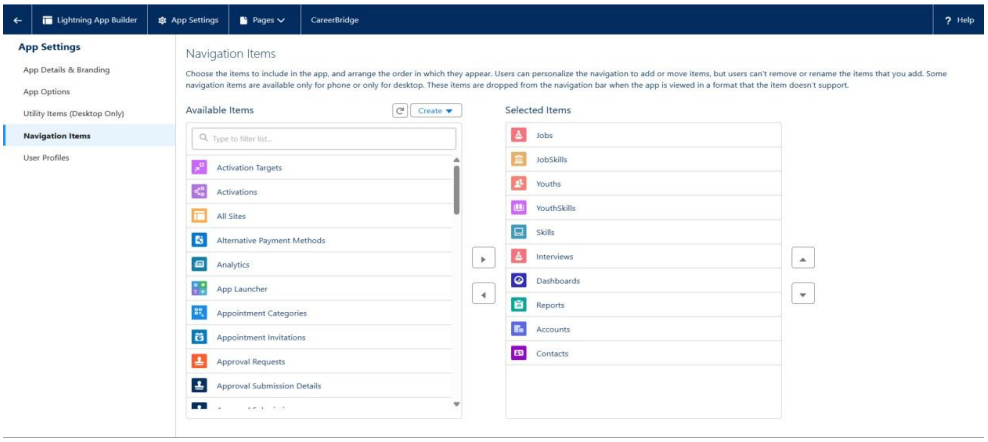
```
public class JobMatchingHelper {

    public static void processYouthSkills(Id youthId, List<Messaging.SingleEmailMessage> emailsToSend, List<Interview__c> interviewsT
        // Get Youth Skills
        Set<Id> youthSkillIds = new Set<Id>();
        for(YouthSkill__c ys : [SELECT Skill__c FROM YouthSkill__c WHERE Youth__c = :youthId]){
            if(ys.Skill__c != null) youthSkillIds.add(ys.Skill__c);
        }
        if(youthSkillIds.isEmpty()) return;

        // Find matching jobs
        Map<Id, Job__c> matchedJobs = new Map<Id, Job__c>();
        for(JobSkill__c js : [SELECT Job__c, Job__r.Name FROM JobSkill__c WHERE Skill__c IN :youthSkillIds]){
            matchedJobs.put(js.Job__c, js.Job__r);
        }
```

Phase 6: User Interface Development

Step1:Lightning App Builder

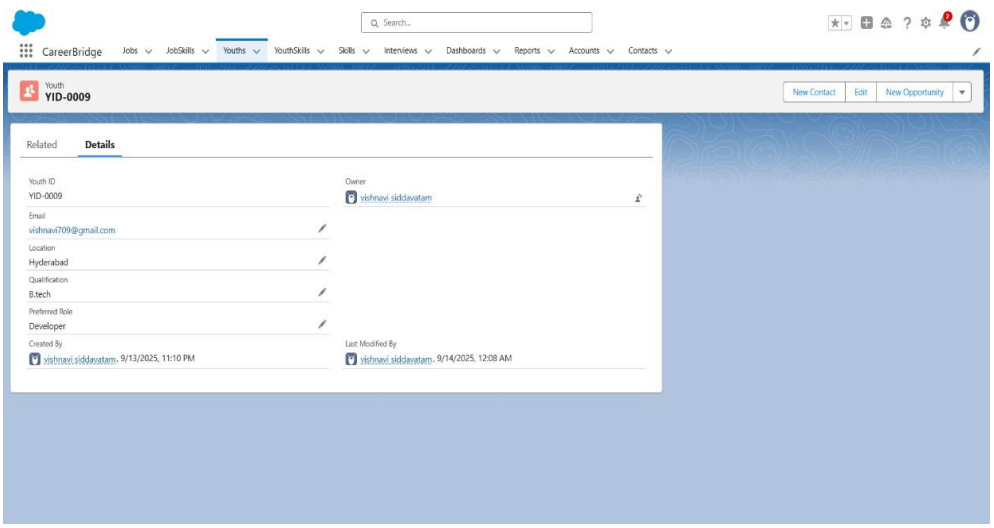
- Go to setup -> App Manager -> New Lighting App.
- Name the app CareerBridge.
- Add navigation items: Home, Youth, Job, Interviews, Reports, Dashboards
- Assign to profiles and Finish.



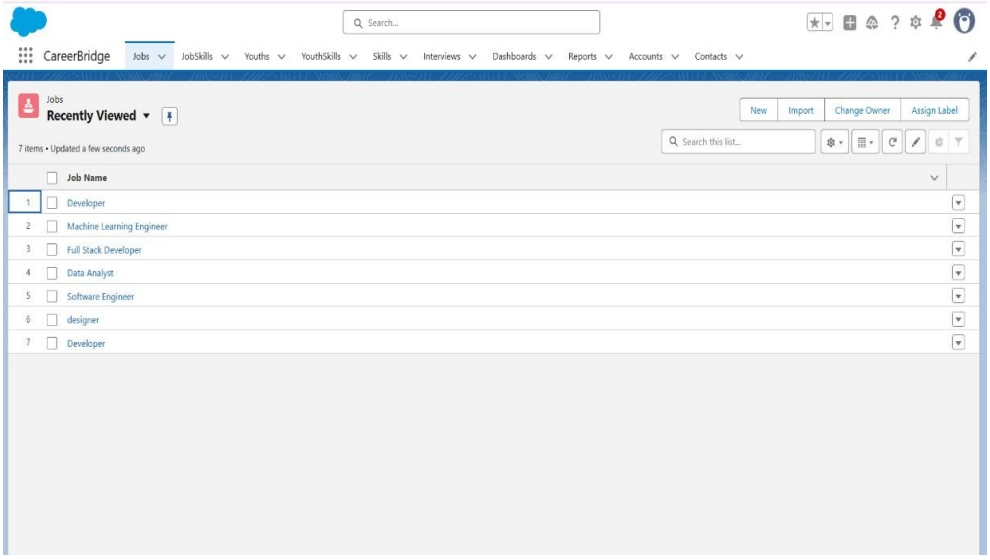


Step 2:Record Pages

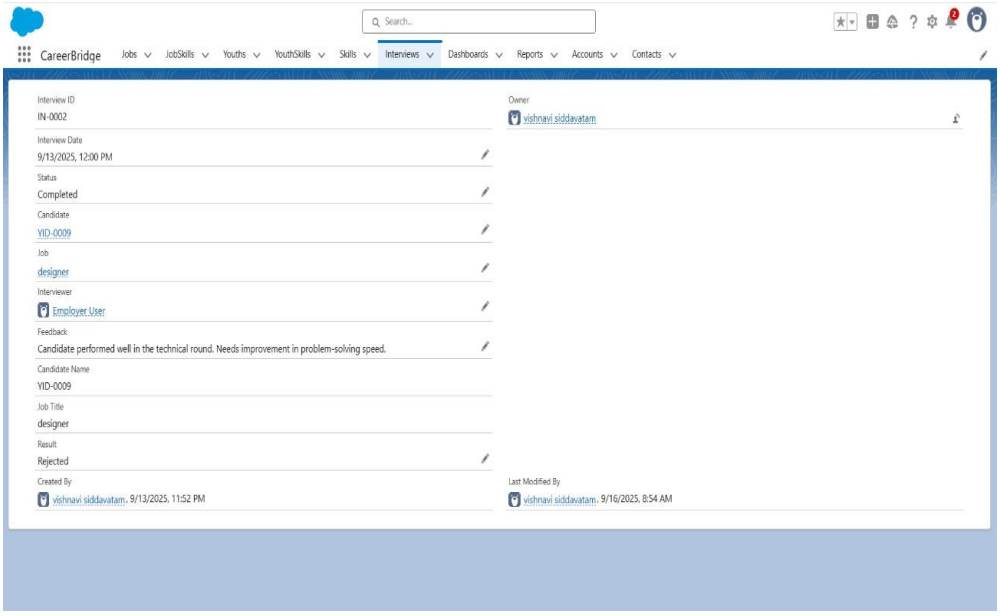
- Custom layouts for specific object records **(Youth, Job, Interview, Skill).**
- You can decide what **fields, related lists, and components appear.**



Youth Record Page: Show youth details, skills, and recommended jobs.



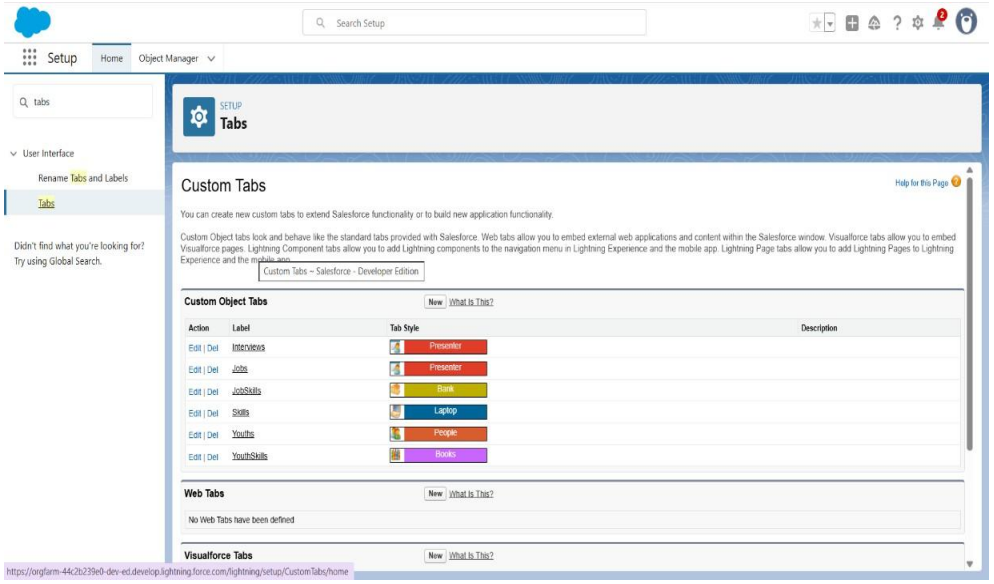
Job Record Page: Show job details, required skills, and linked inter views



- **Interview Record Page:** Show candidate, job, date, and status.

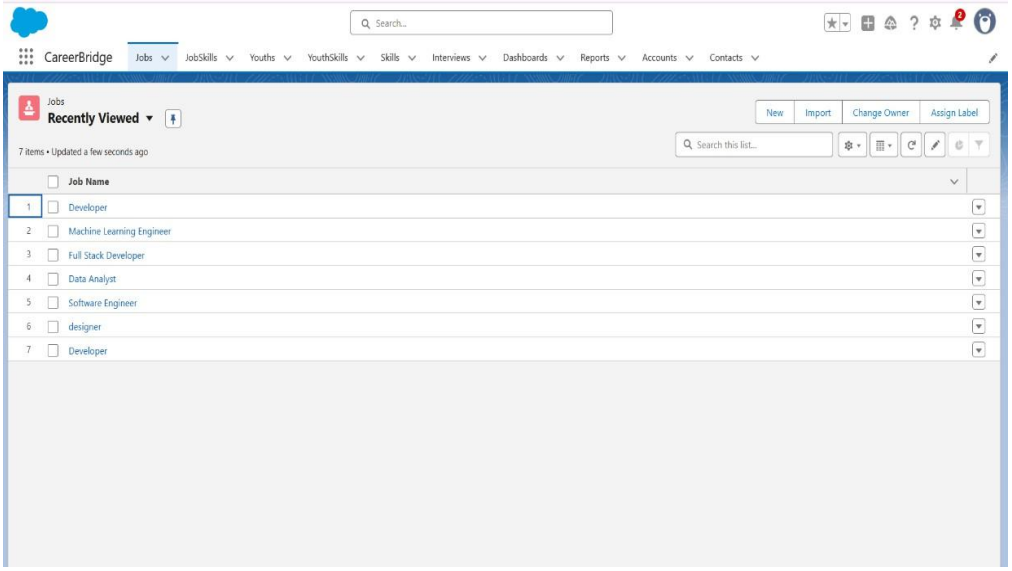
Step 3:Tabs

- Setup → **App Manager → Edit CareerBridge → Navigation Items**.
- Add or reorder tabs (**YouthSkill, Youth, Jobs, Interviews, JobsSkill, Skill**).
- **Save.**



Step 4:Home Page Layouts

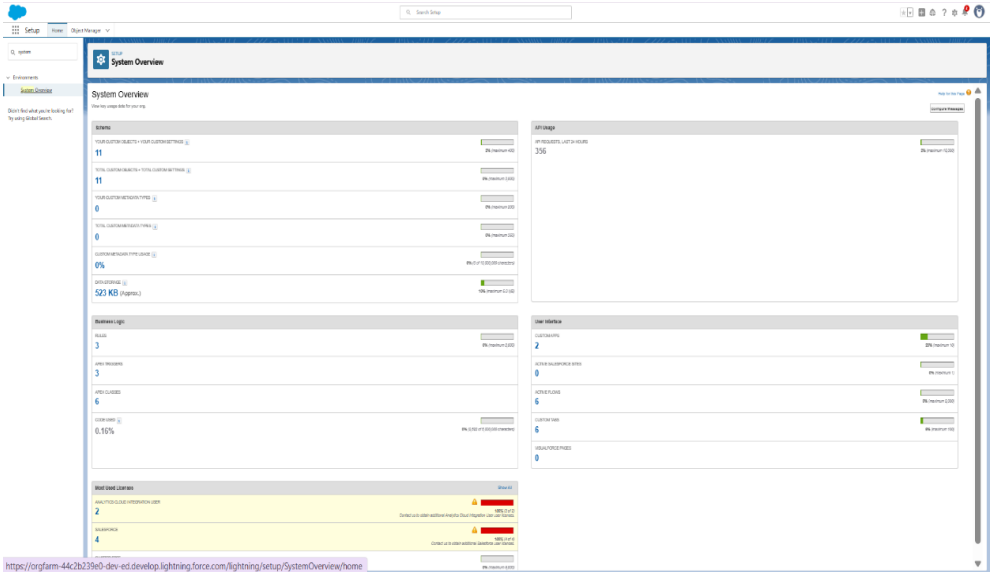
- The home page can be customized for different profiles (e.g., Youth, Admin).
- Provides dashboards, tasks, and quick actions.
    - **CareerBridge Example:**
        - For Youth: Show registered jobs, upcoming interviews, and assigned skills.
        - For Admin: Display KPIs like total youth registered, jobs posted, and interviews scheduled.



Phase 7: Integration & External Access

1. API Limits

- Salesforce tracks API calls made by external apps or integrations.
- In CareerBridge, all actions (Youth registration, Job posting, Flows, Emails) happen **inside Salesforce.**
- **No external API calls are used**, so API Limits **do not affect your project**.
- You can check usage in **Setup → System Overview**, but nothing needs to be configured.



Phase 8: Data Management & Deployment

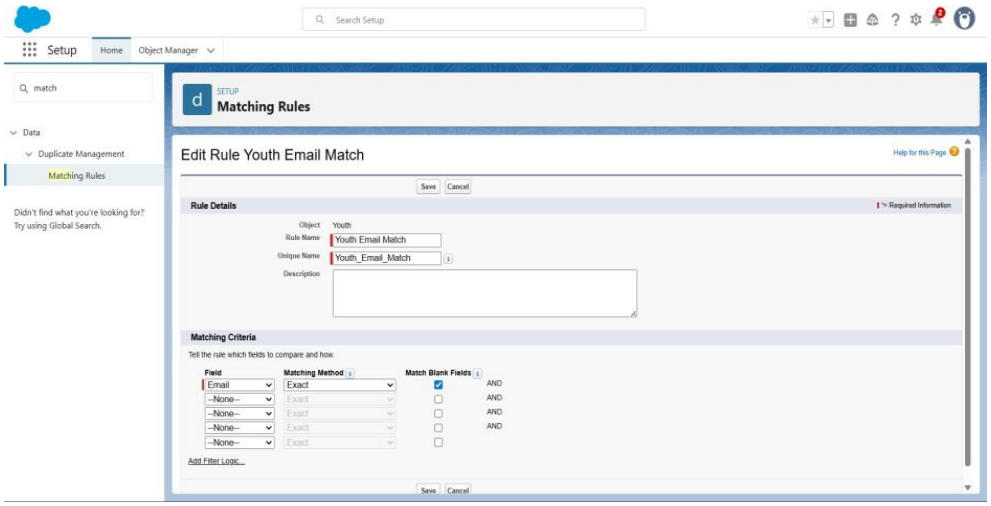
Step 1: Duplicate Management

Preventing duplicate records is critical, especially for **Youth** and **Job** objects.

A. Matching Rules

- Define the criteria to identify duplicates.
- **Steps:**

  1. Go to **Setup** → **Matching Rules** → **New**.
  2. Example: Match Youth_c.Email_c.
  3. Define criteria (e.g., exact match, case-insensitive) → Save → Activate.



B. Duplicate Rules

- Decide what happens when duplicates are detected.

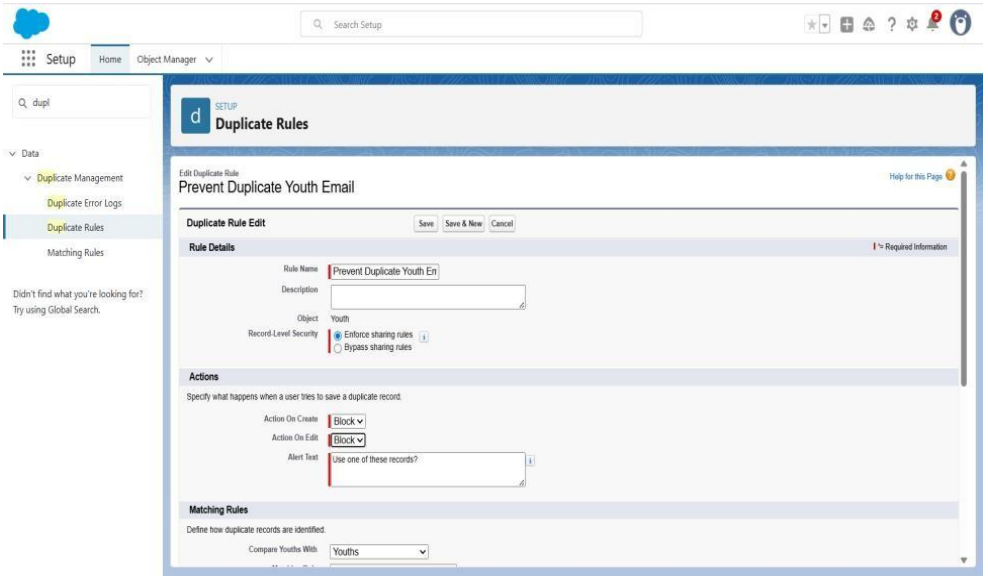
  - **Steps:**

  1. Go to **Setup** → **Duplicate Rules** → **New**.
  2. Apply your **Matching Rule** to the object (e.g., Youth__c).
  3. Choose **Action**:

     - **Block** → Prevents user from creating duplicates.

- **Alert** → Warns the user, but allows creation.

4. Activate the rule.



Step 2: Data Backup

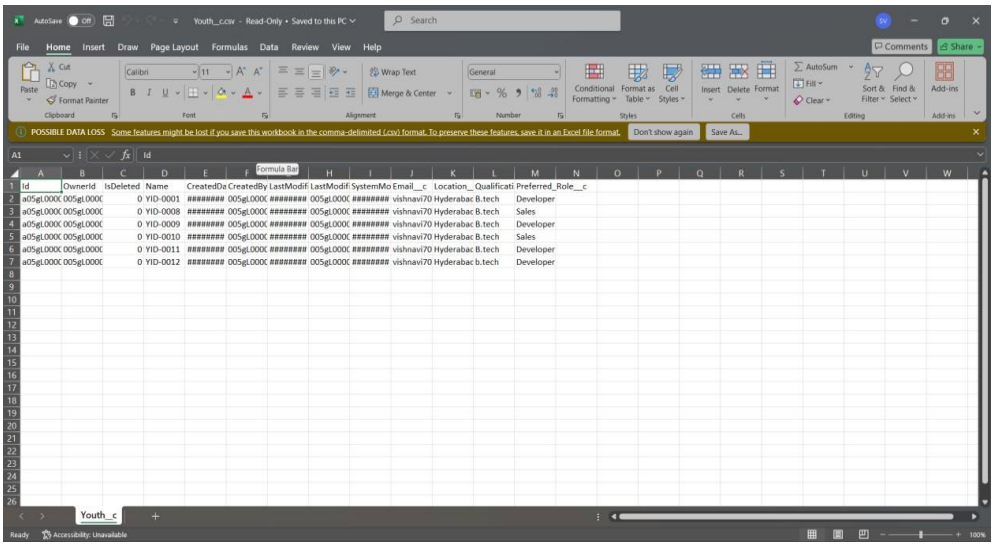
Always back up before importing or deploying, in case something goes wrong.

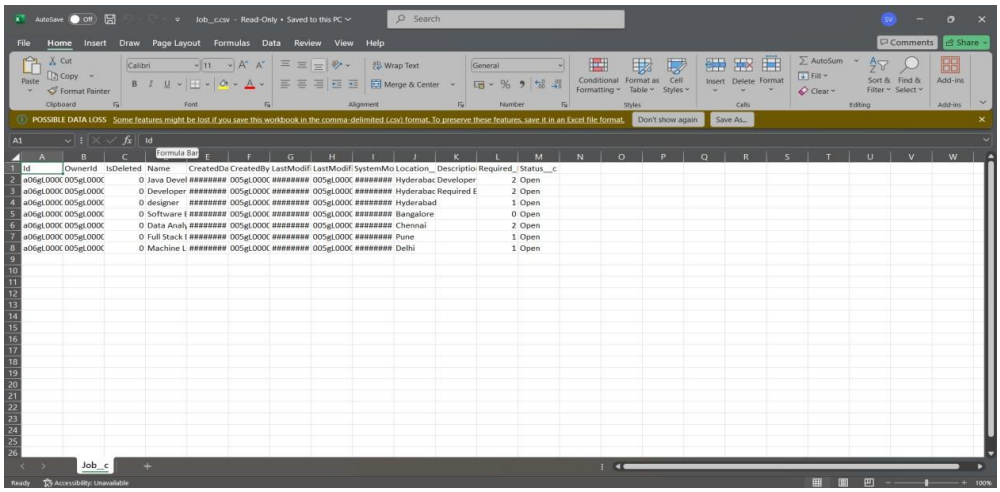
- **Steps:**

1. Go to **Setup → Data Export → Export Now**.

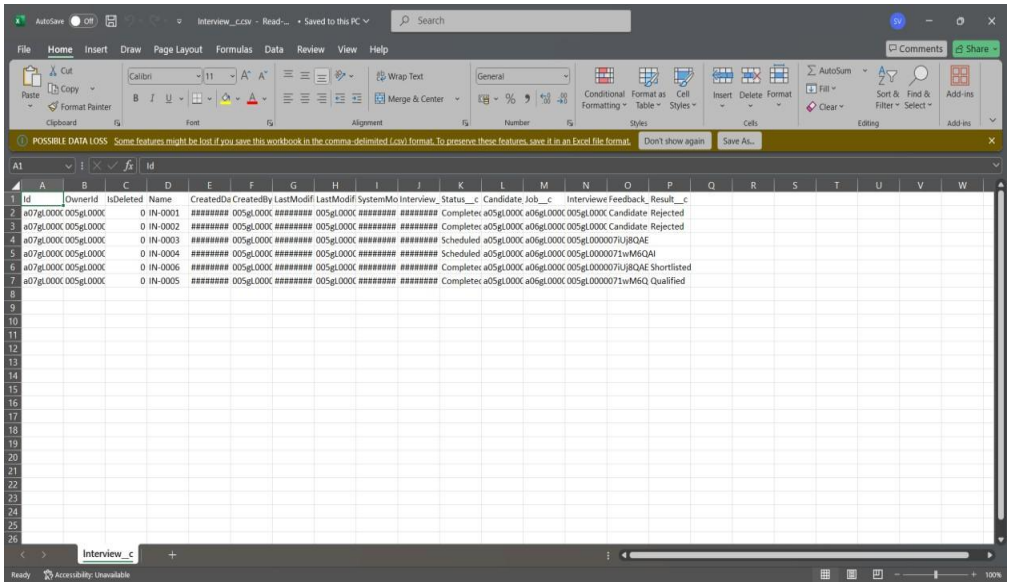
2. Choose objects to backup (e.g., Youth__c, Job__c, Interview__c).

3. Download the zip files.





Id	OwnerId	IsDeleted	Name	CreatedDa	CreatedBy	LastModifi	LastModifi	SystemMo	Location__	Descriptio	Required_	Status__c
a06gL000C	005gL000C	0	Java Devel	########	005gL000C	########	005gL000C	########	Hyderabac	Developer	2	Open
a06gL000C	005gL000C	0	Developer	########	005gL000C	########	005gL000C	########	Hyderabac	Required E	2	Open
a06gL000C	005gL000C	0	designer	########	005gL000C	########	005gL000C	########	Hyderabad		1	Open
a06gL000C	005gL000C	0	Software E	########	005gL000C	########	005gL000C	########	Bangalore		0	Open
a06gL000C	005gL000C	0	Data Analy	########	005gL000C	########	005gL000C	########	Chennai		2	Open
a06gL000C	005gL000C	0	Full Stack I	########	005gL000C	########	005gL000C	########	Pune		1	Open
a06gL000C	005gL000C	0	Machine L	########	005gL000C	########	005gL000C	########	Delhi		1	Open



Id	OwnerId	IsDeleted	Name	CreatedDa	CreatedBy	LastModifi	LastModifi	SystemMo	Interview_	Status__c	Candidate_	Job__c	Interviewe	Feedback_	Result__c
a07gL000C	005gL000C	0	IN-0001	########	005gL000C	########	005gL000C	########	########	Completec	a05gL000C	a06gL000C	005gL000C	Candidate	Rejected
a07gL000C	005gL000C	0	IN-0002	########	005gL000C	########	005gL000C	########	########	Completec	a05gL000C	a06gL000C	005gL000C	Candidate	Rejected
a07gL000C	005gL000C	0	IN-0003	########	005gL000C	########	005gL000C	########	########	Scheduled	a05gL000C	a06gL000C	005gL000007iUj8QAE		
a07gL000C	005gL000C	0	IN-0004	########	005gL000C	########	005gL000C	########	########	Scheduled	a05gL000C	a06gL000C	005gL0000071wM6QAI		
a07gL000C	005gL000C	0	IN-0006	########	005gL000C	########	005gL000C	########	########	Completec	a05gL000C	a06gL000C	005gL000007iUj8QAE	Shortlisted	
a07gL000C	005gL000C	0	IN-0005	########	005gL000C	########	005gL000C	########	########	Completec	a05gL000C	a06gL000C	005gL0000071wM6Q	Qualified	

Phase 9: Reporting, Dashboards & Security Review

Goal:

- Track progress through reports and dashboards
- Protect sensitive data from unauthorized access
- Ensure stakeholders see the right information in real time

Step 1: Reporting

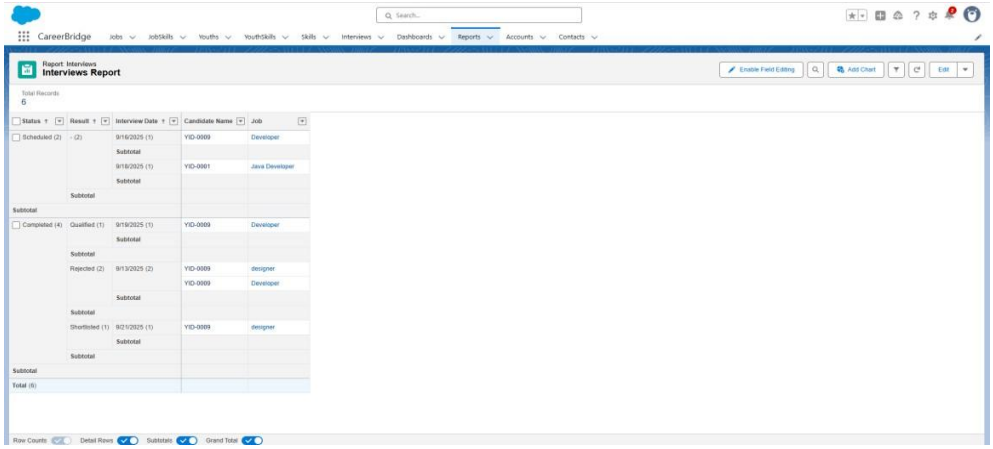
Reports help track Youth, Jobs, and Interviews effectively.

A. Create Reports

1. Go to **App Launcher → Reports → New Report**
2. Select the report type: e.g., **Interview** or **Custom Report**
3. Add fields:
    - Candidate Name (Youth__c Name)
    - Job Title (Job__c Name)
    - Interview Date (Interview_Date__c)
    - Status (Status__c)
4. Save & Run the report

B. Useful Reports

- **Interviews by Status** → Group by Status__c (Shows Scheduled vs Completed interviews)
- **Interviews by Result** → Group by Result__c (Shows Qualified, Shortlisted, Rejected outcomes)
- **Interviews Over Time** → Group by Last Interview Date (Shows trends or frequency of interviews)

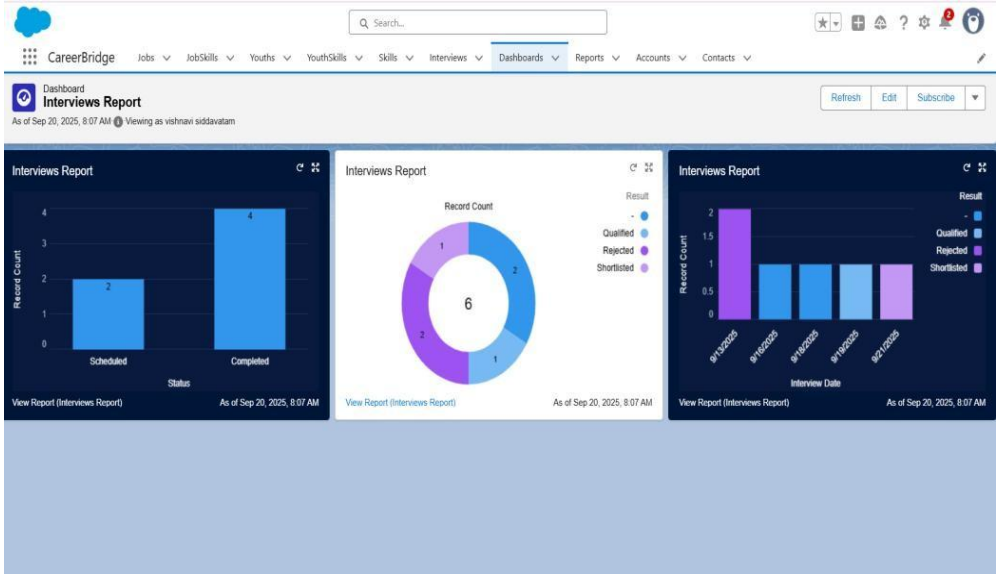


Step 2: Dashboards

Dashboards visually display metrics from reports.

A. Create Dashboard

1. Go to **App Launcher → Dashboards → New**
2. Add components:
    - **Metric:** Count of Completed Interviews
    - **Bar Chart:** Interviews by Status
    - **Line Chart:** Interviews per Week
    - **Table:** Recent Interviews
3. Enable Dynamic Dashboards → Set "View Dashboard As = Dynamic"

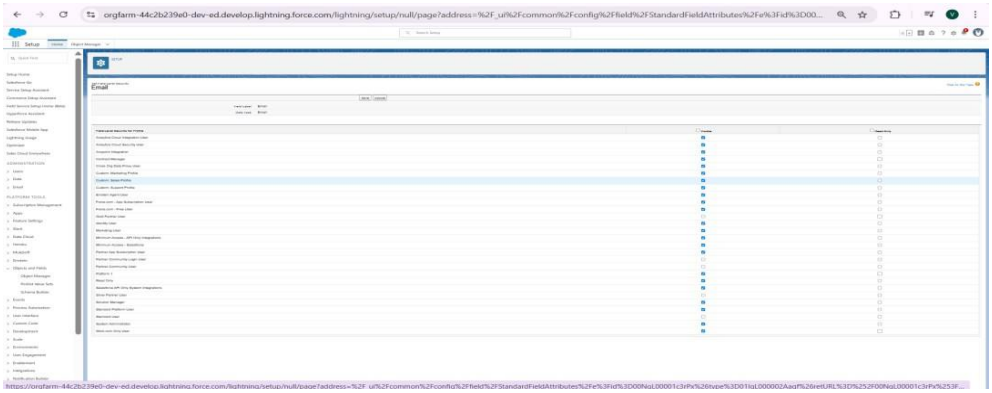


Step 3: Security

Protect sensitive data (like Youth emails, interview feedback) and control who can see what.

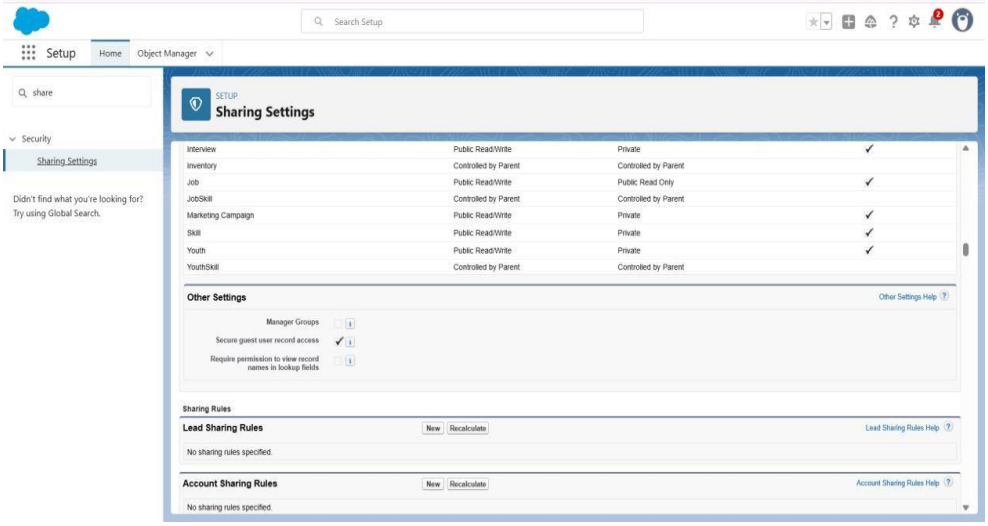
A. Field-Level Security (FLS)

1. Setup → Object Manager → Youth_c → Fields → Email_c → Set Field-Level Security
2. Hide fields from standard users or users without permission



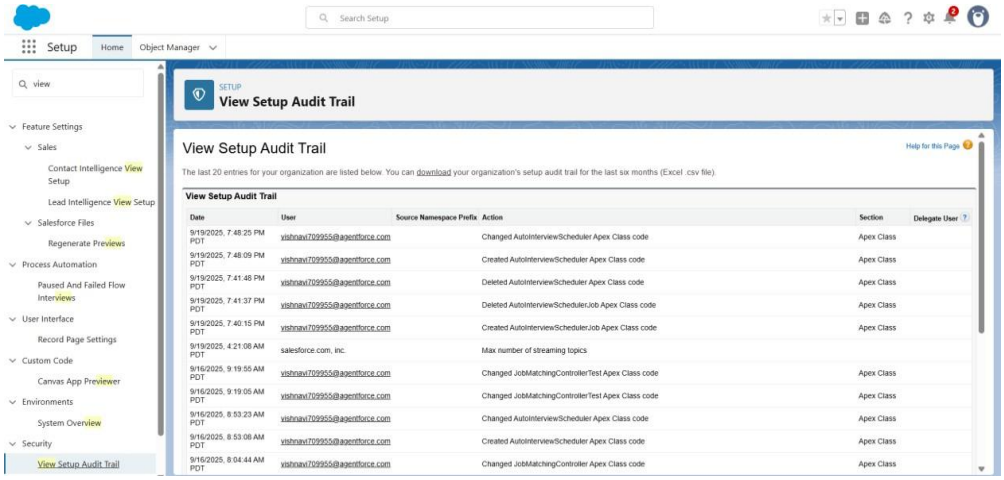
B. Sharing & Org-Wide Defaults (OWD)

1. Setup → Sharing Settings
2. Ensure Youth__c = Private



C. Audit Trail

1. Setup → View Setup Audit Trail
2. Track unauthorized changes or admin activity



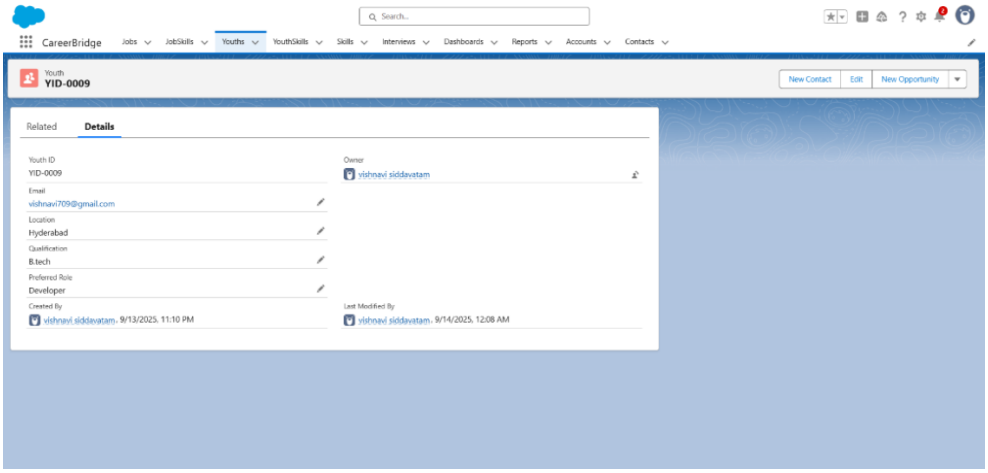
Phase 10: Quality Assurance Testing

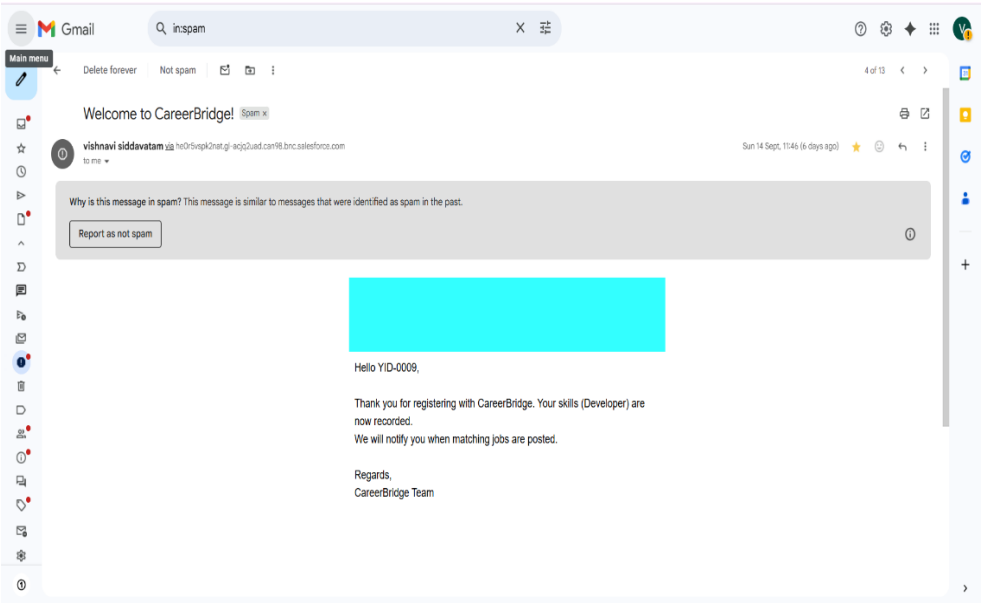
Test Case 1 – Youth Registration → Welcome Email

- **Use Case / Scenario:** Youth registers on the platform.
- **Test Steps (Input):**

- Fill Youth form → Name = Vishnavi, Email = vishnavi@gmail.com, Skills = Java, Python.

- **Expected Result:**
  - Youth record saved in **Youth__c** object.
  - **Welcome Email** triggered:
    "Hello , thank you for registering. Your skills (Python) are now recorded."



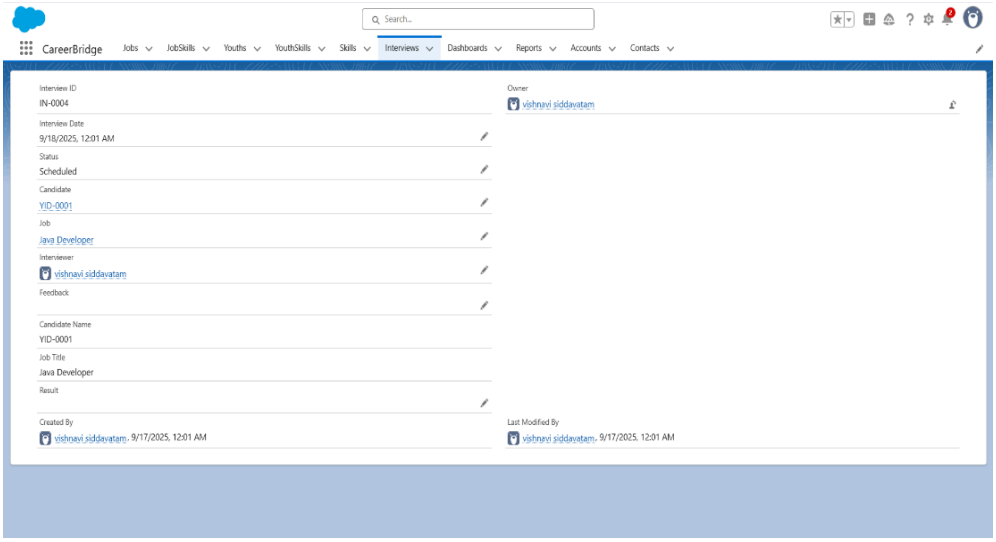


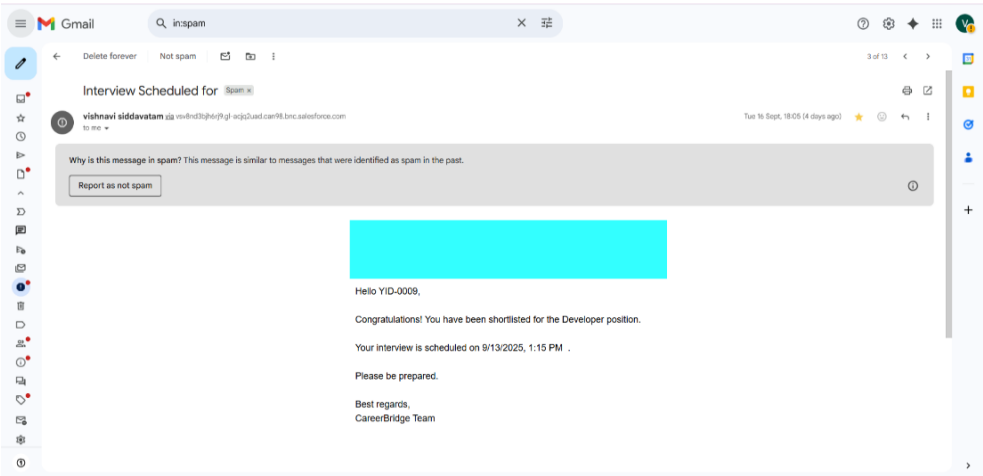
Test Case 2 – Employer Posts Job → Skills Match → Interview Scheduled Email

- **Use Case / Scenario:** Employer posts job requiring skills.
- **Test Steps (Input):**

- Job Title = Java Developer, Location = Bangalore, Required Skill = Java.

- **Expected Result:**
  - Job record created in **Job__c** object.
  - System checks youth skills → Match found with Vishnavi.
  - **Interview__c record** auto-created with Status = Scheduled.
  - **Interview Scheduled Email** triggered:
    "Hello Vishnavi, congratulations! You are shortlisted for Java Developer. Interview is scheduled on [Date & Time]."

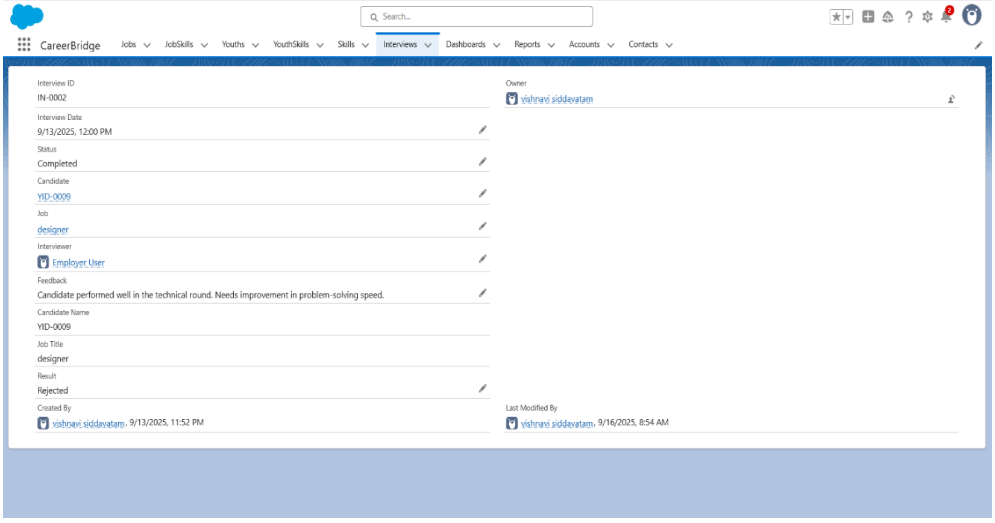


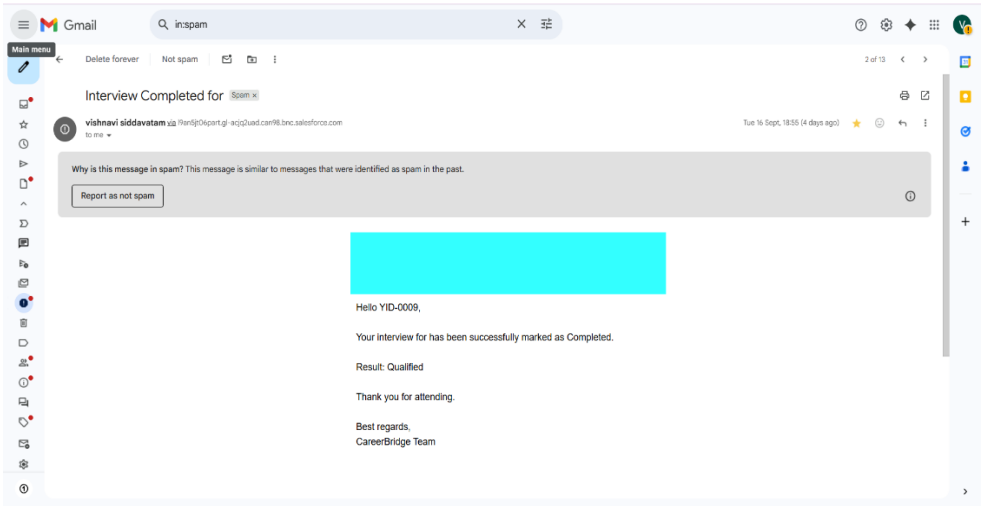


Test Case 3 – Youth Attends Interview → Interview Completed Email

- **Use Case / Scenario:** Interview is completed.

- **Test Steps (Input):**
  - Coordinator updates Interview record → Change Status__c = Completed.
- **Expected Result:**
  - Status changes to Completed.
  - **Interview Completed Email** triggered:
    "Hello Vishnavi, your interview for Java Developer has been marked as Completed. Thank you for attending."



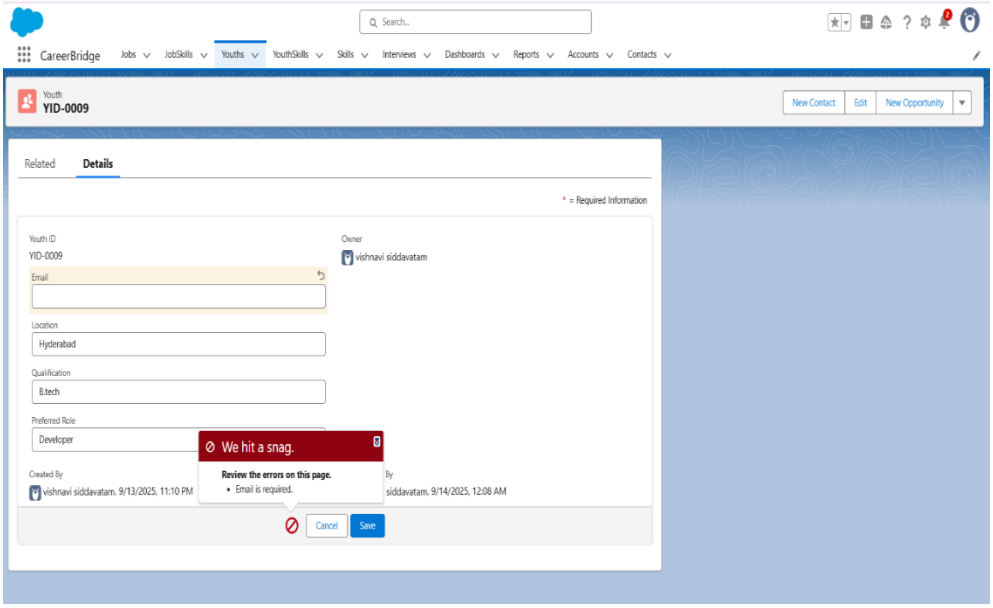


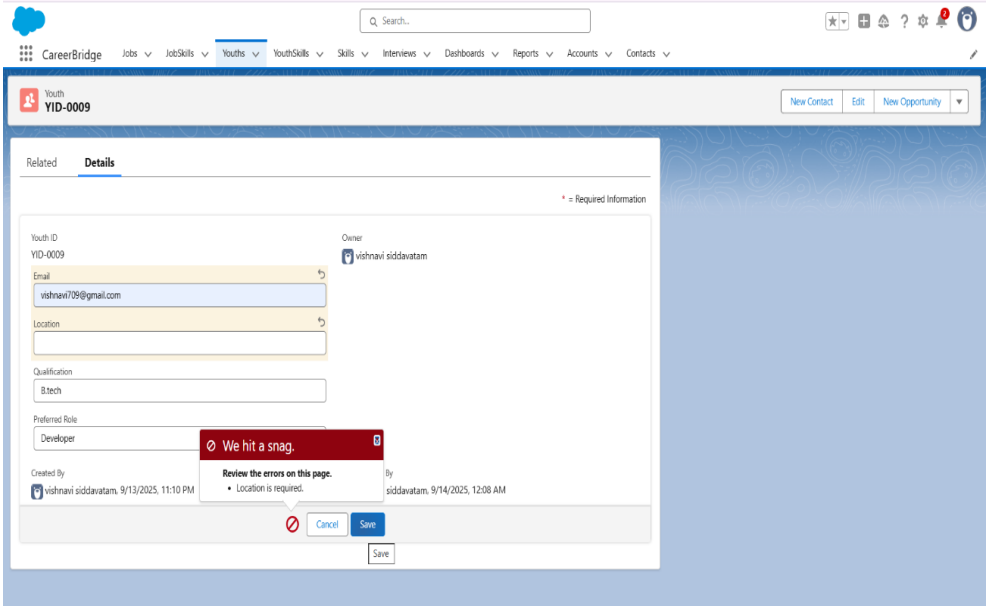
Test Case 4 – Validation Rules (Error Handling)

- **Use Case / Scenario:** Youth tries to register without Email or Skills.
- **Test Steps (Input):**

- Leave Email blank → Save.
- Leave Location blank → Save.

- **Expected Result:**
  - System displays validation error messages:
    - ISBLANK(Email__c) → “Email is required.”
    - ISBLANK(Location__c) → “Location must be entered.”





Conclusion

The CareerBridge CRM project was successfully implemented and tested across all phases. In Phase 10, Quality Assurance Testing validated that every Salesforce feature—record creation, flows, triggers, automatic emails, and validation rules—worked as expected.

The end-to-end flow ensures:

- Youth registration captures complete details and sends a **Welcome Email**.
- Employers post jobs, and the system automatically matches required skills with youth profiles.
- Matching results trigger interview scheduling along with an **Interview Scheduled Email**.
- Once interviews are completed, coordinators update the status, and the system sends an **Interview Completed Email**.
- Validation rules prevent saving incomplete or incorrect data, ensuring accuracy.

This testing confirms that the platform is:

- **Reliable** – All workflows run without errors.
- **Automated** – Reduces manual work for NGOs and coordinators.
- **User-friendly** – Provides transparency to youth, NGOs, and employers.

Final Outcome: CareerBridge CRM successfully connects youth skills to jobs, supports NGOs in managing opportunities, and helps employers find the right candidates efficiently