Student Internship Management System

Phase 1: Problem Understanding & Industry Analysis

➢ **Goal:** Understand why we're building this system.

1. **Requirement Gathering**

- Meet stakeholders (students, faculty, placement officers, employers).

- Example requirements:

  o Track student profiles (GPA, department).

  o Manage internships posted by employers.

  o Students apply → Faculty approves → Employer reviews.

  o Prevent applying if GPA < 6.0.

  o Generate reports on student placement rates.

2. **Stakeholder Analysis**

- Admin: Configures system.

- Faculty: Approves/rejects student applications.

- Student: Applies for internships.

- Employer: Posts internships, reviews candidates.

- Placement Officer (Manager): Oversees reports and employer relations.

3. **Business Process Mapping**
   Flow:
   Student applies → Faculty reviews/approves → Employer shortlists →
   Status updated → Student notified.

4. **Industry-Specific Use Case Analysis**

- Universities need centralized, transparent tracking of internships.

- Approvals ensure only eligible students apply.

- Employers want easy access to applications.

5. **AppExchange Exploration**

- Education Cloud has career services features, but we build a **custom lightweight internship tracker** for learning/demo.

Phase 2: Org Setup & Configuration

> **Goal:** Prepare Salesforce org.

1. **Salesforce Editions** – Free Developer Org.
2. **Company Profile Setup** – Add University info, currency = INR.
3. **Business Hours & Holidays** – Mon–Fri, 9–5; holidays = university holidays.
4. **Fiscal Year Settings** – Standard (Jan–Dec).
5. **User Setup & Licenses** – Users = Student, Faculty, Employer, Admin.
6. **Profiles** – Student = limited, Faculty = approval, Employer = read apps, Placement Officer = full access.
7. **Roles** – Placement Officer > Faculty > Student.
8. **Permission Sets** – Extra reporting access for Faculty.
9. **OWD (Org-Wide Defaults)** – Student object = Private, Internship = Public Read Only, Application = Private.
10. **Sharing Rules** – Placement Officer can see all applications.
11. **Login Access Policies** – Students log in only during business hours.
12. **Dev Org Setup** – Build in Developer Org.
13. **Sandbox Usage** – In real org, build/test in sandbox.
14. **Deployment Basics** – Use Change Sets for deployment.

Phase 3: Data Modeling & Relationships

> **Goal:** Define structure.

1. Objects:

- Student__c – fields: Name, Email, GPA, Department.

- Internship__c – fields: Title, Employer, Slots Available.
- Employer__c – fields: Name, Industry, Contact Email.
- Application__c – fields: Student, Internship, Status (Applied, Approved, Rejected).

2. Fields:

- Student: GPA__c (Number), Department__c (Picklist).
- Internship: SlotsAvailable__c (Number).

3. Record Types:

- Internship: "Summer Internship", "Full-Time Placement".

4. Page Layouts:

- Student page → related applications.
- Internship page → list of applications.

5. Compact Layouts:

- Internship → Title, Employer, SlotsAvailable.

6. **Schema Builder:** Draw relationships visually.

7. **Relationships:**

- Application ↔ Student (Lookup).
- Application ↔ Internship (Lookup).
- Internship ↔ Employer (Master-Detail).

8. **Junction Object**: Application works as junction between Student & Internship.

9. **External Objects:** Could store employer data from external HR system.

Phase 4: Process Automation (Admin)

➢ **Goal:** Automate workflows.

1. **Validation Rule:** GPA < 6 → prevent application.
2. **Workflow Rule:** Send notification when a new application is created.
3. **Approval Process:** Faculty approval required before sending to Employer.
4. **Flow Builder:**

- Record-triggered flow → update Application Status to "Approved".
- Screen Flow → Custom Internship Application Form.

5. **Email Alerts:** Student notified of approval/rejection.
6. **Field Updates:** After approval, Application Status = Confirmed.
7. **Tasks:** Create task for Employer to review approved applications.
8. **Custom Notifications:** Notify Student in Salesforce app after decision.

Phase 5: Apex Programming (Developer)

➢ **Goal:** Add logic.

1. **Apex Trigger:** On Application insert → decrement Internship slots if Approved.
2. **Trigger Handler Pattern:** Write logic in separate class.
3. **SOQL:** Query internships with slots available.
4. **Collections:** Store internship IDs in Set.
5. **Control Statements:** Prevent double application by same student.
6. **Batch Apex:** Weekly report of filled internships.
7. **Queueable Apex:** Async sending of bulk application reminders.

8. **Scheduled Apex:** Every morning → email Faculty list of pending approvals.
9. **Future Method:** Call external job portal API async.
10. **Exception Handling:** Catch overlapping application errors.
11. **Test Classes:** Insert sample student, internship, application. Verify trigger.

Phase 6: User Interface Development

➤ **Goal:** Build user-friendly interface.

1. **Lightning App Builder:** Create "Internship Management" app.
2. **Record Pages:** Student page with Applications list.
3. **Tabs:** Students, Employers, Internships, Applications.
4. **Home Page Layout:** Show key reports.
5. **Utility Bar:** Quick action = Apply for Internship.
6. **LWC:** "Apply for Internship" component.
7. **Apex with LWC:** Call Apex to create Application.
8. **Events in LWC:** Child → Parent for form submission.
9. **Wire Adapters:** Wire available internships.
10. **Navigation Service:** Redirect student to Application record after submission.

Phase 7: Integration & External Access

➤ **Goal:** Connect with external services.

1. **Named Credentials:** Store LinkedIn API credentials.
2. **External Services:** Call job listing API.
3. **Web Services:** REST call → fetch internship postings.
4. **Callouts:** Trigger API request on new Employer.
5. **Platform Events:** Event → "New Internship Added".

6. **Change Data Capture:** Notify if Application status changes.

7. **Salesforce Connect:** Sync employer database.

8. **API Limits:** Monitor daily API calls.

9. **OAuth & Authentication:** Employers log in via portal.

10. **Remote Site Settings:** Allow LinkedIn API domain

Phase 8: Data Management & Deployment

➢ **Goal:** Manage data & move changes.

1. **Data Import Wizard:** Import student records.

2. **Data Loader:** Bulk import applications.

3. **Duplicate Rules:** Prevent duplicate student emails.

4. **Data Export & Backup:** Weekly export of all data.

5. **Change Sets:** Deploy approval processes.

6. **Unmanaged vs Managed Packages:** Unmanaged for internal demo.

7. **ANT Migration Tool:** Optional for deployments.

8. **VS Code & SFDX:** For developers to push/pull metadata.

Phase 9: Reporting, Dashboards & Security Review

➢ **Goal:** Track placement success.

1. **Reports:**

- Applications by Internship.

- Approved vs Rejected Applications.

2. **Report Types:** Custom → Student + Application + Internship.
3. **Dashboards:**

- Faculty dashboard → Pending Approvals.

- Manager dashboard → Placement Rate.

4. **Dynamic Dashboards:** Each Faculty sees only their department's students.
5. **Sharing Settings:** Applications private, Internships public.
6. **Field-Level Security:** Hide GPA from Employers.
7. **Session Settings:** Timeout = 30 mins.
8. **Login IP Ranges:** Restrict Faculty logins to campus network.
9. **Audit Trail:** Track changes to Applications.

Phase 10: Final Presentation & Demo Day

➢ **Goal:** Showcase project.

1. **Pitch Presentation:** Problem → Solution → Benefits.
2. **Demo Walkthrough:**

- Student applies → Faculty approves → Employer shortlists.
- Email/notification sent.
- Report shown.

3. **Handoff Documentation:** Share data model, flow diagrams, and guide.
4. **LinkedIn/Portfolio Showcase:** Post as "Built Internship Management CRM on Salesforce."