College Facility Issue Tracker using Salesforce CRM

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Roll no :- 43

Phase 1 — Project Setup & Requirements

Goal: Clarify scope, stakeholders, and what "done" looks like.

Tasks

- Define actors: Student/Faculty (reporter), Facility Agent, Facility Manager, Contractor (Contact).

- List issue categories: Electrical, Plumbing, IT Equipment, Furniture, Hostel, Other.

- Decide submission channels: Experience Cloud portal (authenticated) **or** Web-to-Case form.

- Decide mandatory fields: Category, Location (building/room), Description, Photo (optional), Priority.

- Define business rules: SLA by category, cost threshold for approval, auto-assignment zones.

Phase 2 — Data Model & Design

Goal: Create object model, fields, and relationships.

Tasks

- Standard objects to use: **Case**, **User**, **Contact** (for contractors).

- Custom objects:

  - Facility_Asset__c (optional): Asset_Name, Asset_Type, Location__c, Warranty_Expiry__c.

  - Building__c or Zone__c (optional) to map areas.

- Case fields (custom):

  - Category__c (Picklist)

  - Location_Detail__c (Text or Lookup to Building__c)

  - Photo__c (File)

  - Reported_By__c (Lookup to Contact or Auto-populated from User)

  - Estimated_Cost__c (Currency)

- o Repair_Completion_Date__c (Date)
- o Contractor__c (Lookup to Contact)
- o SLA_Deadline__c (DateTime)
- Sharing model: Cases visible to Facility Team (Role hierarchy / Sharing rules).

Phase 3 — Web Form / Portal & UX

Goal: Build the user-facing submission channel.

Options & recommendation

- **Experience Cloud (recommended)**: Authenticated student portal lets students track status.
- Or **Web-to-Case** (if anonymous submissions ok).

Tasks

- Create Experience site with a "Report Issue" page & record-triggered Lightning component / Flow screen.
- Form fields: Category, Building, Room Number, Priority, Description, Attachment upload.
- Add a "My Reports" page showing reporter's Cases.
- Add mobile responsiveness.

Phase 4 — Automation: Assignment & Prioritization (Flows + Triggers)

Goal: Auto-route and prioritize incoming cases.

Tasks

- Create a **Record-Triggered Flow** on Case (after create) to:
  - o Set SLA_Deadline__c based on Category (e.g., Classroom IT = Now + 24 hours).
  - o Auto-assign OwnerId to Facility Queue or specific user based on Category/Building.
  - o If Estimated_Cost__c > Approval_Threshold → set Requires_Approval__c = TRUE.
- Use an Apex Trigger only where Flow can't (e.g., complex cross-object logic). But prefer Flows for admin friendliness.

Phase 5 — Approval Process & Cost Controls

Goal: Implement approval for expensive repairs.

Tasks

- Create an **Approval Process** on Case:

  - Entry Criteria: Estimated_Cost__c > 50000 (example).

  - Approver: Facility Head / Principal.

  - On approval: auto-create Purchase Order task or mark Case actionable and assign to contractor.

  - On rejection: notify agent and reporter.

Phase 6 — Validation Rules, Triggers & Business Logic Enforcement

Goal: Enforce data integrity and prevent incorrect status transitions.

Important Validation Rules

- Prevent closure if no completion date:

AND(ISPICKVAL(Status, "Closed"), ISBLANK(Repair_Completion_Date__c))

- Require Category and Location:

OR(ISBLANK(Category__c), ISBLANK(Location_Detail__c))

Apex Trigger (example) — block closing without completion date (if you choose trigger over validation rule):

```
trigger PreventCloseWithoutCompletion on Case (before update) {
  for (Case c : Trigger.new) {
    Case old = Trigger.oldMap.get(c.Id);
    if (old.Status != 'Closed' && c.Status == 'Closed' && c.Repair_Completion_Date__c == null) {
      c.addError('Please enter Repair Completion Date before closing the Case.');
    }
  }
}
```

Phase 7 — Contractor Assignment & External Updates

Goal: Enable contractors to receive work and update status.

Tasks

- Use **Contact** records for contractors; optionally create Partner Community licenses if you want contractors to log in.

- Implement assignment: Facility Agent assigns Contractor__c (Contact) on Case.

- Notifications: Email/SMS to contractor with Case details.

- Provide contractor update options:

  o If external login: contractor portal (Experience) with limited access.

  o Or contractors use Salesforce Mobile App (User accounts if internal)

Phase 8 — SLA, Escalation & Reports/Dashboards

Goal: Track SLAs, escalate breaches, and create meaningful dashboards.

Tasks

- Use SLA_Deadline__c and scheduled flows (or Entitlements/Milestones if available) to check deadlines.

- Create scheduled job/Flow that:

  o Sends escalation email to Facility Head 24 hours before SLA breach or immediately on breach.

- Reports:

  o Open vs Resolved Cases by Building/Category

  o Avg resolution time by Category

  o Top recurring issues

  o Contractor performance (avg resolution time)

- Dashboard: single page with widgets for the above.

Phase 9 — Testing, UAT & Training

Goal: Verify the system and prepare users.

Testing

- Unit tests for Apex (if any).

- Flow tests for all branches.

- Integration tests (if using Google Maps/SMS).

- UAT scenarios (example cases):

  - Submit classroom projector issue → auto-assign to IT queue → contractor completes → reporter receives closed notification.

  - Submit hostel flood issue → SLA 24h → escalate on breach.

Phase 10 — Deployment, Documentation & Demo

Goal: Move to production, document everything, and prepare final deliverables.