

Solar Community Ledger

Capstone 53 · CleanTech · Talodabi Academy

1 · Project overview

Resident-facing ledger and fault reporting for one existing shared solar scheme.

Deliverable	Full mobile MVP in Figma (not code)
Platform	Mobile app · Android-first · portrait
Screens	11 screens + 1 unhappy path (12 frames)
Features	3 core features
Bottom navigation	Home · Ledger · Faults · Notices
Prototype	4 linked flows

Build order: Auth (screens 1–4) → nav tabs (5–8) → core flow (9–11) → unhappy path → link prototypes.

2 · Problem & primary user

Households using a shared solar scheme may receive payment requests, outage updates, and fault responses through separate channels. A resident-facing ledger can improve trust without replacing the licensed operator or physical meter.

Primary user

"Yakubu, a 44-year-old shop owner in an off-grid community who pays monthly for a shared solar connection."

Geographic scope: State-level (One pilot state)

3 · Goals

User goal: Check account history and report a service fault from one low-data screen.

Business goal: Mini-grid operators, energy cooperatives, estates, and productive-use programs pay per community.

Success: Resident checks account history and submits a fault ticket with service status visible.

4 • Market context

QUESTION	ANSWER
Who pays	Mini-grid operators, energy cooperatives, estates, and productive-use programs pay per community.
Why not WhatsApp	Payment screenshots and fault reports sit in separate chats, so households cannot see one trusted account history.
Design focus	Resident ledger plus service status and fault ticket in one low-data mobile flow.

Competitors to check:

- **Paper collector ledger** (default)
- **Transfer screenshots** (not reconciled)
- **Operator portal** (often staff-facing)

5 • Validate before you design

Interview 3–5 people who match your primary user. Update this brief if interviews contradict it. Do not start hi-fi until you complete the confirmation below.

FIELD	YOUR ANSWER
Validated user (name, age, city)	
Problem in one sentence	
One interview quote	
Success metric for your test	
Primary colour and tone	
One competitor you checked	

Interview prompts

- "Walk me through the last time this happened."
- "What did you use instead? WhatsApp, paper, or nothing?"
- "What would make you trust this on a cheap Android phone?"
- "What would stop you from using this every week?"

6 • Features & scope

v1 • three features

1. See service status and current access plan
2. Review operator-posted payment and usage ledger
3. Submit a fault ticket and track resolution

Out of scope

- Designing solar hardware
- Holding customer funds
- National electricity billing

7 • Screens

Design every row in wireframe, high-fidelity UI, and prototype (where the flow applies).

#	LAYER	SCREEN	WHAT TO SHOW
1	Auth	Splash Screen	App logo, name, and tagline for Solar Community Ledger.
2	Auth	Onboarding (1 screen)	Explain the app in one sentence. One Get Started button.
3	Auth	Sign Up Screen	Name, phone number, state, and PIN. No email required.
4	Auth	Sign In Screen	Phone number and PIN. Forgot PIN link.
5	App shell	Home (tab)	Service on/off status, plan name, and latest operator notice. Show bottom nav with Home active.
6	App shell	Ledger (tab)	Dated payment and usage entries with balance explanation. Show bottom nav with Ledger active.
7	App shell	Faults (tab)	Report fault, attach photo, and view open or resolved tickets. Show bottom nav with Faults active.
8	App shell	Notices (tab)	Maintenance windows and operator announcements for the community. Show bottom nav with Notices active.
9	Core flow	Home · Service status	Current service state and latest operator notice. Show bottom nav on post-sign-in screens.
10	Core flow	Ledger · Account history	Payment and usage entries with balance explanation. Show bottom nav on post-sign-in screens.
11	Core flow	Fault · Ticket opened	Fault report saved with open status and reference. Show bottom nav on post-sign-in screens.

Layers: Auth = 1–4 · App shell = 5–8 · Core flow = 9–11

8 · Prototype flows

Link these in Figma. Examiners should click through without your voice-over.

Flow 1 · App entry

Splash → Onboarding → Sign Up or Sign In → first main tab

Flow 2 · Core task (all three features)

Sign In → Home tab → Ledger tab → Account history → Faults tab → Ticket opened

Core flow screens: Home · Service status · Ledger · Account history · Fault · Ticket opened

Flow 3 · Navigation

Link every nav tab so examiners can tap each bottom nav item. Tabs: Home · Ledger · Faults · Notices

Flow 4 · Unhappy path

Trigger the unhappy path edge case and link to that screen.

9 · Unhappy path

Design this as its own screen state (frame 12):

Meter data is delayed. Show: Usage last updated [time]. Your service status may be newer.

Link in **Flow 4**.

10 · Design system

RULE	DETAIL
Colour	You choose. Keep it simple and readable.
Type	You choose. Keep body text easy to read on a phone.
Tone	Design for your user, not for a tech audience.

Reuse on every screen:

- Primary button (active and disabled states)
- Input field (empty, filled, and error states)

- Card or list item used across the app
- Navigation bar with correct labels and icons
- Empty state: what the screen looks like with no data

11 · Submit & defense

Deliverables

#	DELIVERABLE	WHAT GOOD LOOKS LIKE
1	Wireframes	Every screen in this brief, plus the unhappy path. Layout and labels clear.
2	High-fidelity UI	Same frames polished. You choose colour and type. Bottom nav on every post-sign-in screen.
3	Prototype	Four linked flows (entry, core task, navigation, unhappy path). Examiners can use the app without your voice-over.
4	AI prototype	Figma Make: at least 2 screens. Share link.
5	Case study (1 page)	Problem · User · Who pays · Competitors · Solution · One design decision
6	Presentation (6–8 slides)	Name · Problem · User · Solution · Key screens · Flow demo · One decision

Before you present

- ☐ Every screen designed in wireframe and hi-fi
- ☐ Unhappy path screen designed and linked in the prototype
- ☐ Four prototype flows linked end to end
- ☐ At least one empty state on a list tab
- ☐ Shared components reused: button, input, card or row, bottom nav
- ☐ Case study names who pays and one competitor you checked
- ☐ You can explain one design decision in critique (why, not what)
- ☐ Completed 5 user interviews or 1 usability test
- ☐ Checked at least one competitor listed under Market context