UX CASE STUDY · FINAL SUBMISSION

CURIO Museum Quests

Turn any museum into a live, social quest.

An AR museum-tour web app that replaces the lonely audio guide with a shared, gamified adventure, built for Europe's most-visited halls.

Course	Prototyping for Design Leadership
Professor	Simon Mayer
Market	Europe and Iran
Surface	iOS, Android, web (no install required)
Format	Web app, validated on-site at Golestan Palace and Deutsches Museum
Live at	mojitorabi.github.io/Curio

Scan to open the web app now. No install, no account.

Contents

1. The Scene and the Insight

A Saturday at the Deutsches Museum. Three friends walk in together and drift apart within minutes, each in a different hall, earbuds in, heads down. The audio guide isolates. The plaques are walls of text nobody finishes. After 40 minutes, the energy drops.

> **What a visitor told us at the exit**
> "We came together, and toured alone." That one sentence became the problem statement for the whole project.

The insight: what if the museum stopped being a gallery to read and became a game board to play, together? Each exhibit becomes a clue. Each visitor takes a role. Each visit becomes a quest finished as a crew.

Curio is the answer. At the time of this submission, 88 teams are playing the Golestan Palace quest and 62 are running Machines and Marvels at the Deutsches Museum. A total of 3,800 explorers have joined the platform.

2. Product Evolution: From SHAMS to Curio

Curio is the second major version of this product. Version 1, SHAMS, did two things well and taught us exactly where the opportunity was.

	What it delivered
What SHAMS focused on	AR scan: point the phone at an exhibit to reveal its hidden layer and story. Visit planner: build a route that fits the time you actually have.
The gap it exposed	One narrow scenario. No way to go from a solo visitor to a shared visit. No way for guides or museums to build their own quests.
What Curio keeps and adds	Curio inherits the AR scan and the time-aware visit planner. It adds the social layer, team-up flow, quest creation with AI, and the three-tier prize system.

Field evidence from SHAMS: the SHAMS AR build was field-tested and recorded at Golestan Palace, Tehran. That recording is referenced in Appendix B.

3. Who We Design For

Three visitors, three distinct jobs to be done, plus the supply-side actors who make Curio a platform rather than a single-player app.

3.1 Lena, 26. Digital-native explorer

Job to be done: *“When I tour alone, make the visit visual and social, something I'd share.”*

Gen Z and Millennial visitors for whom the audio guide feels like homework. She wants discovery, a bit of competition, and a result worth posting. The Explore feed (shown in the web app) curates quests by museum and category for exactly this person.

3.2 The Müllers. Family with kids aged 8 and 12

Job to be done: *“When the kids get restless, give us one game to play together.”*

The family segment breaks the 40-minute engagement wall. Every member has a real role in one shared quest. Nobody is behind their own screen.

3.3 Amir, 34. International tourist with accessibility needs

Job to be done: *“When signs aren't in my language, let me read, hear and see the story anyway.”*

International visitors and accessibility users. AR translation of plaques, audio modes for low-vision visitors, and a fully localised Persian (Farsi) RTL interface. The onboarding collects language and accessibility preferences in the first tap.

3.4 Quest Creators and Cultural Institutions

A fourth segment that the earlier strategy defined and Curio now implements. Guides, community hosts, and museums can build quests with AI or templates, attach prizes (creator-defined or institution-sponsored), and bring their own audiences. The Create flow in the web app covers all of this.

4. How We Validated It

Four methods. All run with real visitors in real museums before any significant code was committed.

1. Contextual inquiry. Shadowed visitors at Golestan Palace and the Deutsches Museum. Watched phone use, audio-guide drop-off, and where groups split apart.
2. Intercept interviews. Asked at the exit: “What was most confusing today?” and “Would you have wanted to do this with someone?”
3. Moderated usability testing. Real first-time visitors used the web app on-site at Golestan Palace. We watched every tap and point of friction without intervening.
4. Competitor teardown. Used Smartify, Google Arts and Culture, and the Rijksmuseum app in a real museum. None support teaming up or sponsored prizes. That is the gap Curio fills.

> **Why on-site testing was non-negotiable**
> Testing in a real palace with real crowds surfaced problems that no desk review would have caught: people freezing at the AR viewfinder with no guidance, force-closing the

> app when trapped in the camera view, and never finding the scan action because it was buried in the Create tab. Section 7 documents all six of these findings and every fix that shipped.

5. The Journey Map

From toured alone to finished together. Six phases, each with an emotional state and a design opportunity.

Phase	What happens	Feeling	Opportunity
Arrive	Walks in, unsure where to start.	Overwhelmed	Greet with a quest, not a corridor.
Onboard	Sets up profile, picks interests, chooses exploration style. No account wall.	Curious	Make setup feel like the first move of play.
Pick a quest	Browses the Explore feed, curated by museum and theme. Goes solo or invites a crew.	Excited	Recommend a quest that fits the whole group.
AR moment	Points the camera at an exhibit. The story unlocks. +150 XP.	Delighted	Reward the first discovery within seconds.
Play together	Races teammates on the live crew board. Messages fly in chat.	Connected	Keep momentum alive between every stop.
Finish and share	Recap screen, badges earned, memory created.	Proud	Turn the ending into the reason to come back.

6. The Three Flows That Matter Most

Every screen in the web app serves one of these three flows.

6.1 Core quest: the heart of the app

Browse quests on the Explore feed, pick one (solo or crew), start the visit from the planner, hunt stops with AR, unlock each exhibit's story and earn XP, finish with a badge and recap.

- The Explore feed organises quests by museum, theme, and distance. Palace of the Rose Garden at Golestan Palace runs 5 stops over 85 minutes with 88 teams already playing.
- The visit planner adapts to the time you have and builds a prioritised route with a live map.

- Each AR scan at a stop unlocks the exhibit story and earns 150 XP. One clue found at a time, one stop at a time.

6.2 Play as a crew: the social hook

Start a team for a quest, name it, share the code or QR, and teammates join instantly. The live crew board shows everyone's progress. Messages keep the energy up between stops.

- Open teams show up in the Team tab for anyone nearby. Tehran Explorers, for example, has 3 members and 2 spots open for the Golestan Palace quest this weekend.
- Direct messages and group chat connect the crew before, during, and after the visit.

6.3 Create a quest: the supply side

Four templates (Museum hunt, City trail, Art quest, Family hunt) plus a from-scratch builder and an AI generation option. Type a sentence describing what you want. The AI drafts the stops.

- Template creation takes under five minutes for a first-time organiser.
- AI generation works from a single natural-language prompt. The creator edits, reorders, attaches a prize, and publishes.
- Institutions attach sponsored prizes to occasion challenges, awarded to the top of that challenge's leaderboard.

7. Usability Testing: Six Findings, Six Fixes

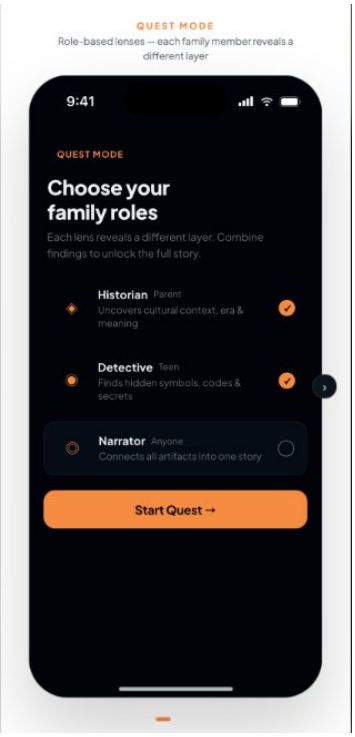
All six findings came from the on-site sessions at Golestan Palace and intercept interviews at the Deutsches Museum. Every one of them changed what shipped.

#	What broke	What shipped
1	Scan buried in the Create tab. The core AR action took three taps. Visitors could not find it on a real walk-through.	AR Scan moved to its own primary tab in the centre of the navigation bar, one thumb-reach from anywhere.
2	Generic dark theme, fictional location. The first build used a placeholder dark theme and a made-up city gate. Nobody felt grounded.	Rebuilt around real Golestan Palace photography and a clean light palette (#F7F6FB surface, #6D5AD0 brand).
3	Static AR viewfinder with no guidance. “What am I pointing at?” Visitors froze at the scan screen.	Corner bracket viewfinder with “Place your camera in front of this object” prompt. A map toggle keeps context visible.
4	Sign-up wall before any experience. Asking for an account before the first AR moment killed first-session momentum.	Profile setup is the first onboarding screen (name and photo only). The first quest starts immediately after.

#	What broke	What shipped
5	Icon-only tabs, no accessible labels. Screen readers could not navigate the app.	All tabs labelled (Home, Explore, Scan, Team, You). ARIA roles and 44px minimum tap targets throughout.
6	Trapped in the AR camera view. Once in the scan view, testers had no way back. Several force-closed the app.	Map toggle and a persistent back action on every AR screen. The map can be hidden or revealed at any point.

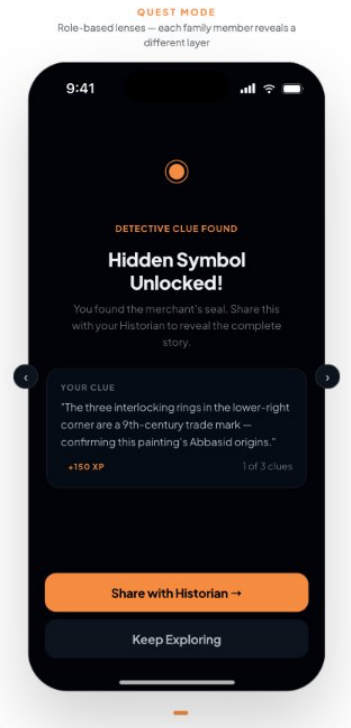
Before: the dark-theme iteration that on-site testing replaced

The four screens below are from the build used during the first on-site session at Golestan Palace. They show the Quest Mode role system and the family board working, but on a placeholder dark identity with a fictional exhibit. Testers did not feel grounded in a real place. Findings 1, 2, and 3 all pointed to this version. The rebuild that followed produced the light-palette web app screens in Appendix A.

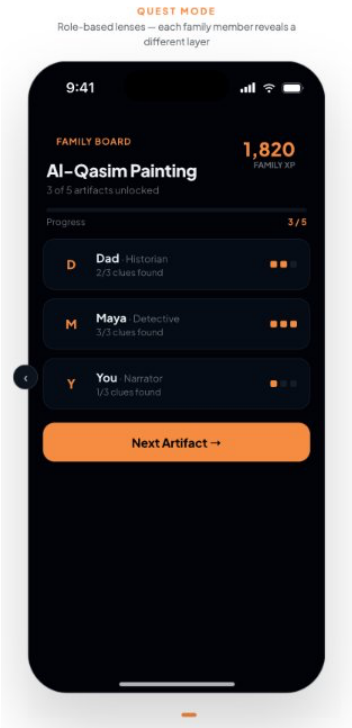


Before: role selection (dark iteration)

Before: static AR viewfinder (finding 3)



Before: clue unlock (dark iteration)



Before: family board (dark iteration)

Figures 1 to 4: The pre-test dark-theme iteration, kept here as evidence of the design evolution driven by on-site findings.

8. Design System Foundations

The system that came out of the post-test rebuild. Applied consistently across every screen in the final web app.

Foundation	Specification
Color tokens	Brand gradient #8979DD to #6D5AD0. Ink deep #5746B3. Reward gold #E7B45F. Success #18A957. Surface #F7F6FB. Four swappable accent themes: indigo, sunset, aqua, forest.
Typography	Wordmark in Oregano. Display 800 weight, Plus Jakarta Sans, 24 to 42pt. Headings 800, 18 to 24pt. Body 500/400, 13 to 16pt. Labels 700, 11 to 13pt, uppercase.
Spacing	4-point base grid: 8, 12, 16, 20, 24, 28. Consistent 8-point gutters throughout.
Component radius	14 for cards, 20 for panels, 100 for pill buttons.
Accessibility	44px minimum touch targets. ARIA roles and visible focus states on every interactive element. Fixing finding 5.

The Persian (Farsi) RTL foundation

A native right-to-left variant for the Iran market. Buttons, icons, navigation, and cards are structurally mirrored. This is not a translated skin. It is a fully localised layout that also powers the in-app plaque translation feature used by Amir.

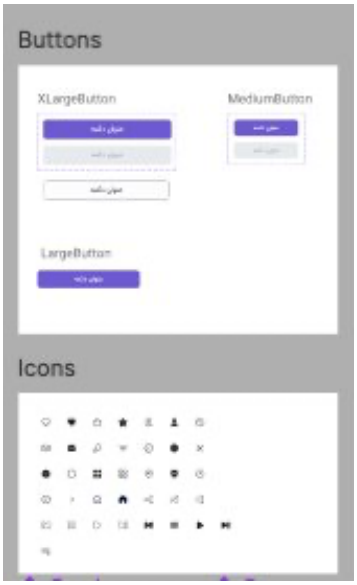


Figure 5a: Farsi buttons and icon set

Figure 5b: Persian navigation bar (RTL)

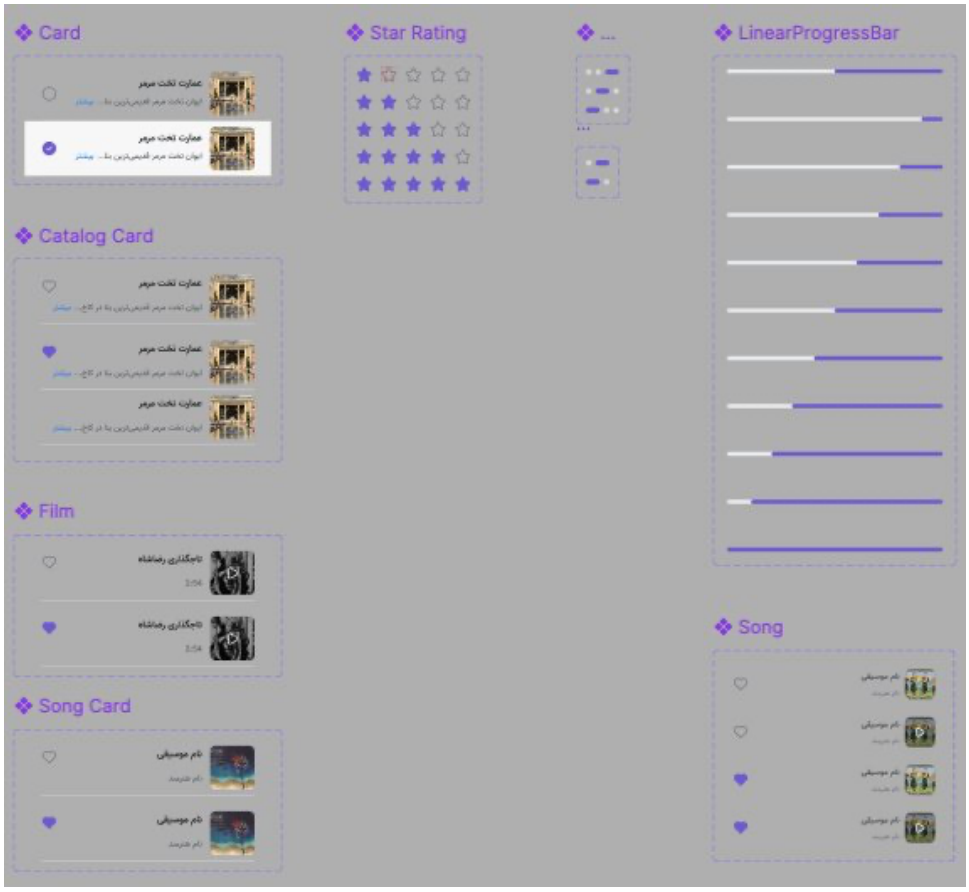


Figure 5c: Farsi component library (cards, star ratings, progress bars, catalog tiles).

9. Revenue Streams

Three payers, one platform, no single dependency. Each stream has a launch phase so the business case reads as a sequence rather than a wish list.

9.1 Consumers

Stream	What it is	Phase
Quest Pass	Unlimited quest creation, AI credits, and exclusive badges.	From launch
Family Pass	Shared account for the whole crew, a small premium over individual.	From launch
In-App Purchases	AR lens packs, collectible badge bundles (Gold, Silver, Bronze tiers), extra team slots.	From launch

9.2 Creators

Stream	What it is	Phase
Creator Tier	Guides and educators get more quest slots, branded pages, and per-stop analytics.	Early growth
AI Credits	Free monthly allowance; extra credits sold or bundled into higher tiers.	From launch

9.3 Institutions (B2B)

Stream	What it is	Phase
Institutional Partnership	Annual fee for featured placement, sponsored challenge tool, and visitor analytics.	From launch
Sponsored Challenges	Per-campaign fee for a timed occasion challenge. Prize goes to the top of the leaderboard.	Early growth
White-Label and City Deals	Tourism boards fund city-wide routes. Large institutions license the engine under their brand.	Scale

> **What the web app already demonstrates**
> Sponsored prizes are live in the Explore feed: the Golestan Palace quest shows “Private courtyard tour” and Machines and Marvels shows “VIP planetarium night”. The sponsored-challenge model is not speculative. It is in the product right now.

10. Roadmap

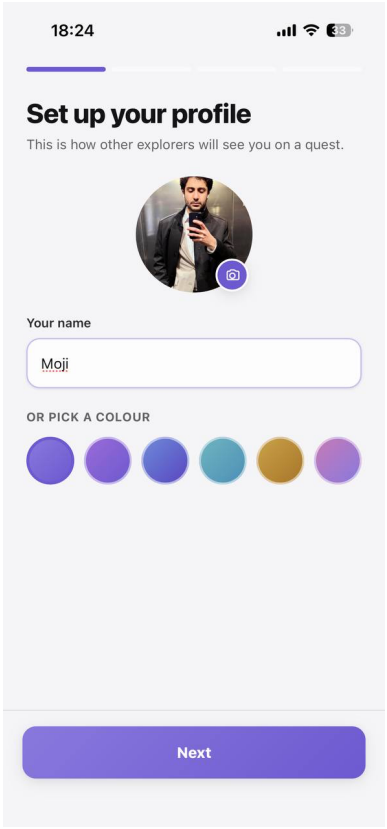
Stage	Milestone	What it proves
1. Done	Full web app with 18 screens across five journeys, validated on-site at Golestan Palace. 3,800 explorers active, 150 teams running quests across two cities.	The concept works with real visitors in real museums.
2. Next	First formal museum partner. Pilot a sponsored challenge with one institution and measure redemption.	The B2B value proposition at a real contract level.
3. Early growth	Creator subscription live. ARKit and ARCore on two partner museum floors. Instrument per-stop retention and drop-off metrics.	Supply side and production AR at scale.
4. Scale	Multi-city expansion, additional languages, tourism board deals, white-label licensing.	The platform beyond a single museum.

Appendix A: The Web App, All 18 Screens

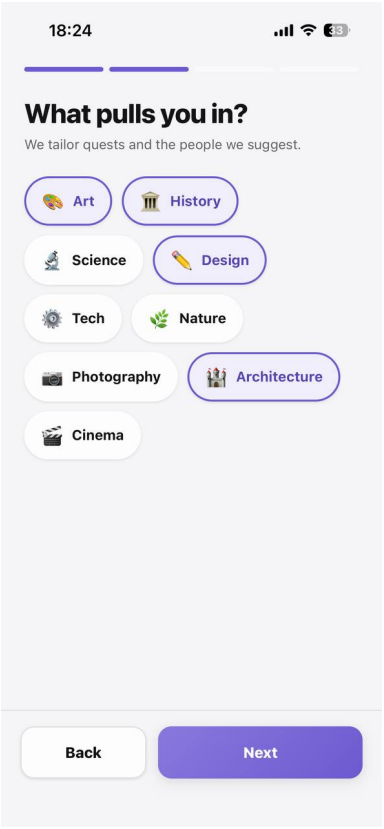
Every screen shown below is captured from the final web app at mojitorabi.github.io/Curio. They are organised by the journey they belong to, matching the three flows documented in Section 6.

A.1 Onboarding: First Run

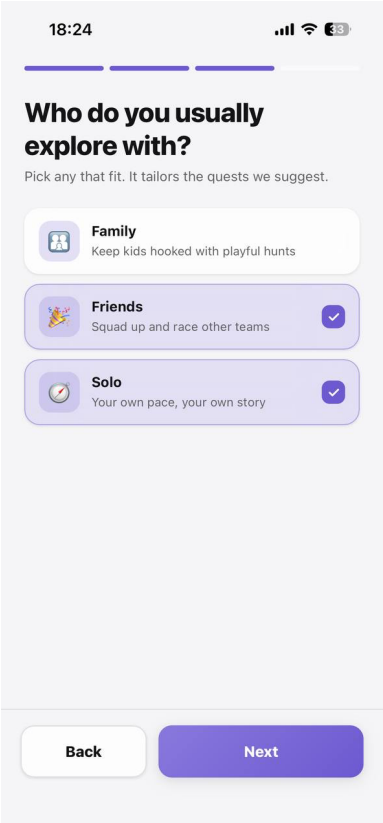
Four steps to personalise the experience before the first quest. No email, no password. Profile setup takes under 60 seconds.



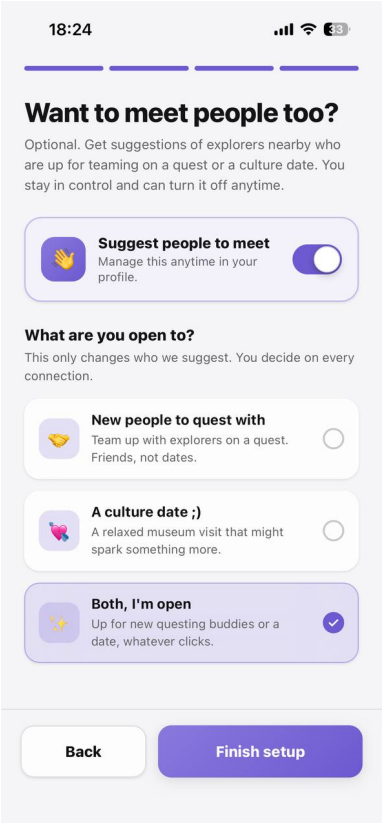
Screen 1: Set up your profile (name, photo, or avatar colour)



Screen 2: What pulls you in? (interest selection)



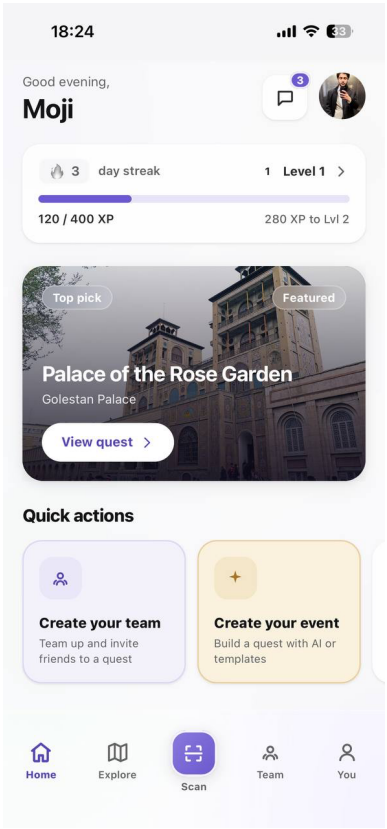
Screen 3: Who do you usually explore with? (family, friends, solo)



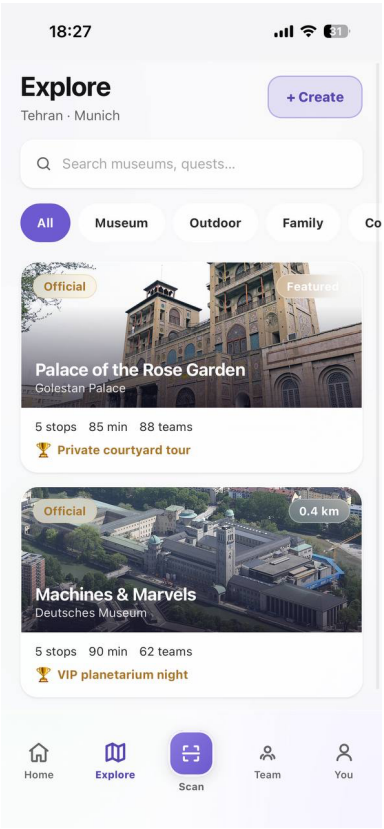
Screen 4: Want to meet people too? (social discovery, opt-in)

A.2 Home and Explore

The home dashboard surfaces the user's streak, XP progress, and a featured quest. Explore lists quests by category (Museum, Outdoor, Family) across both Tehran and Munich.



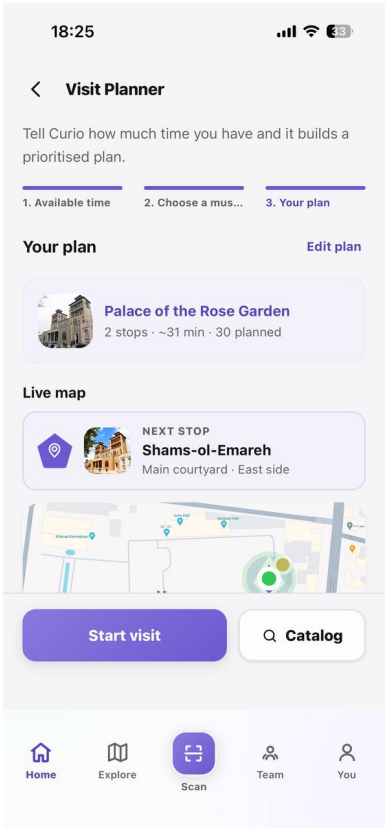
Screen 5: Home dashboard (Moji, Level 1, 120/400 XP, 3-day streak)



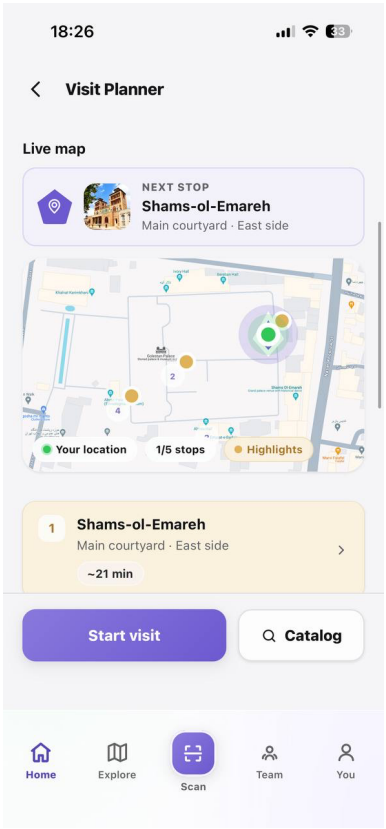
Screen 6: Explore feed (Palace of the Rose Garden and Machines and Marvels)

A.3 Planning the Visit

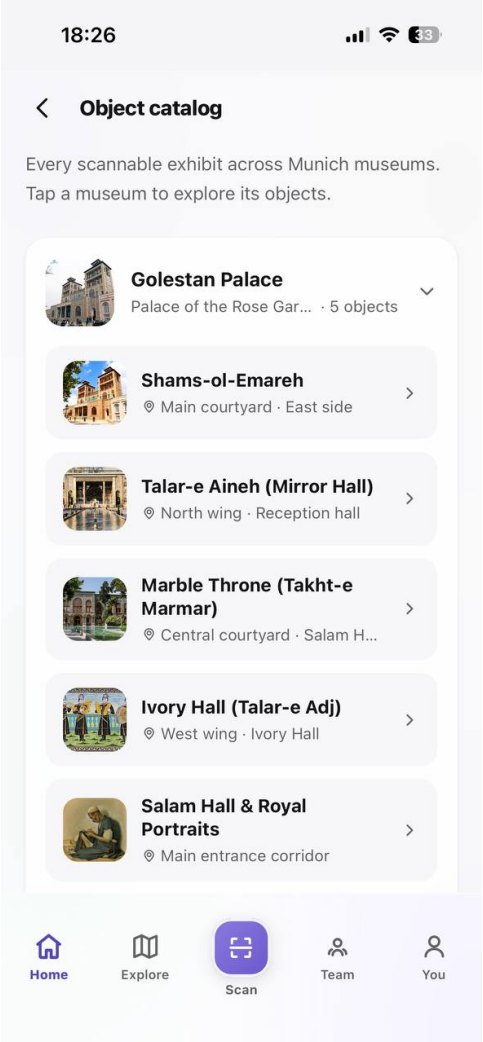
The visit planner is inherited from SHAMS version 1. It takes available time, picks a museum, and builds a prioritised route with a live map and estimated stop durations. The object catalog shows every scannable exhibit across both cities.



Screen 7: Visit Planner, your plan (Palace of the Rose Garden, 2 stops, ~31 min)



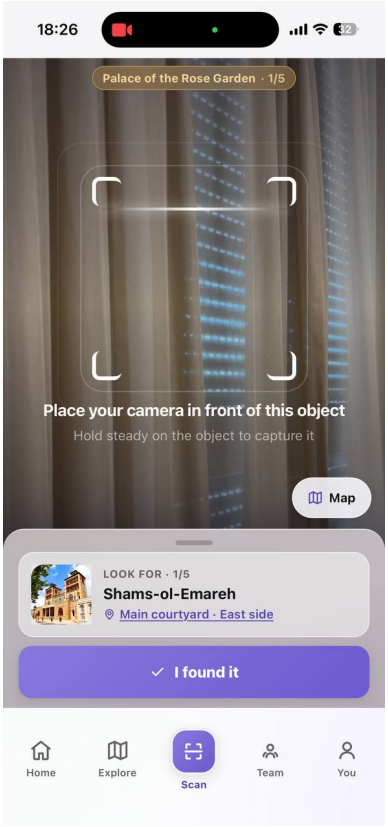
Screen 8: Visit Planner, live map (next stop: Shams-ol-Emareh, ~21 min)



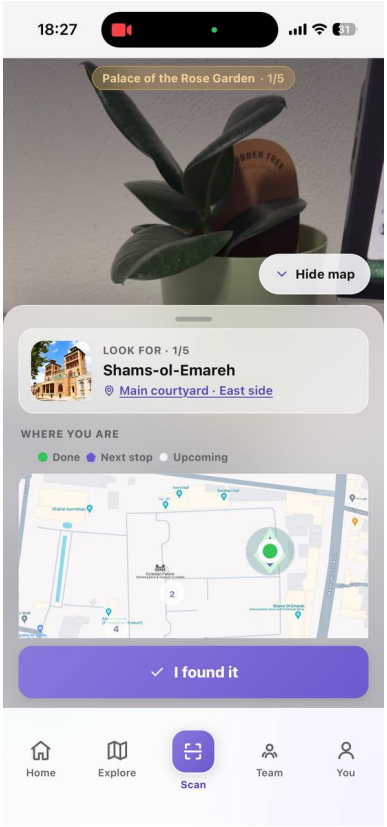
Screen 9: Object catalog. Golestan Palace lists 5 scannable exhibits: Shams-ol-Emareh, Talar-e Aineh (Mirror Hall), Marble Throne (Takht-e Marmar), Ivory Hall, and Salam Hall and Royal Portraits.

A.4 The Quest: AR Scan Flow

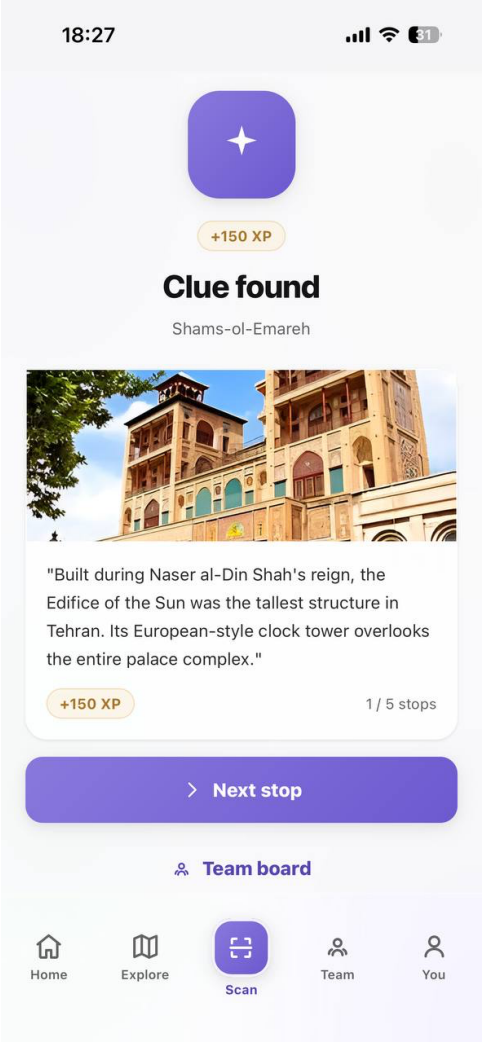
The AR scan view (the primary tab in the nav bar, fixing finding 1) shows the target exhibit, a viewfinder with guidance text, and a map that can be toggled on or off. When the visitor confirms they found the exhibit, the clue unlocks with +150 XP and the story of the object.



Screen 10: AR viewfinder (finding 3 fix: prompt, bracket viewfinder, Map toggle)



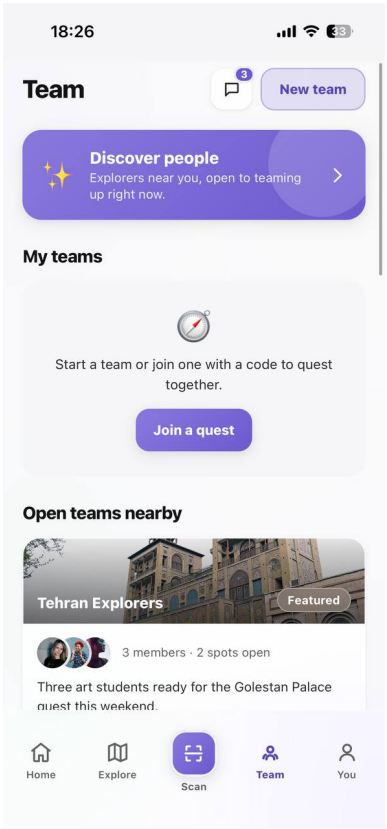
Screen 11: AR view with map revealed (Quest 1/5, Shams-ol-Emareh located)



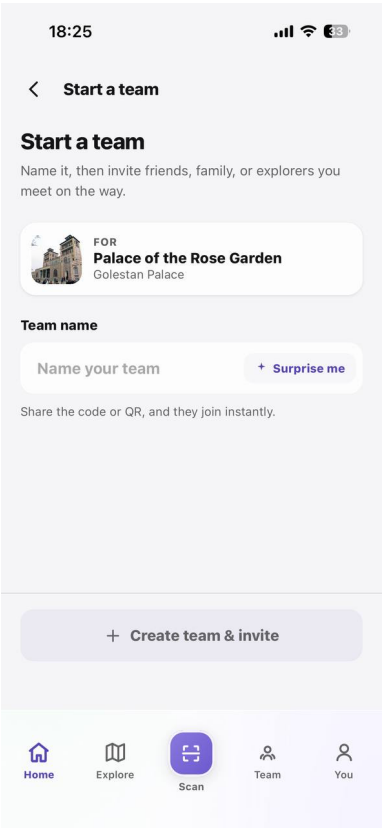
Screen 12: Clue found. +150 XP. Shams-ol-Emareh: built during Naser al-Din Shah's reign, the tallest structure in Tehran. 1 of 5 stops. Next stop and Team board accessible from here.

A.5 Team Up and Connect

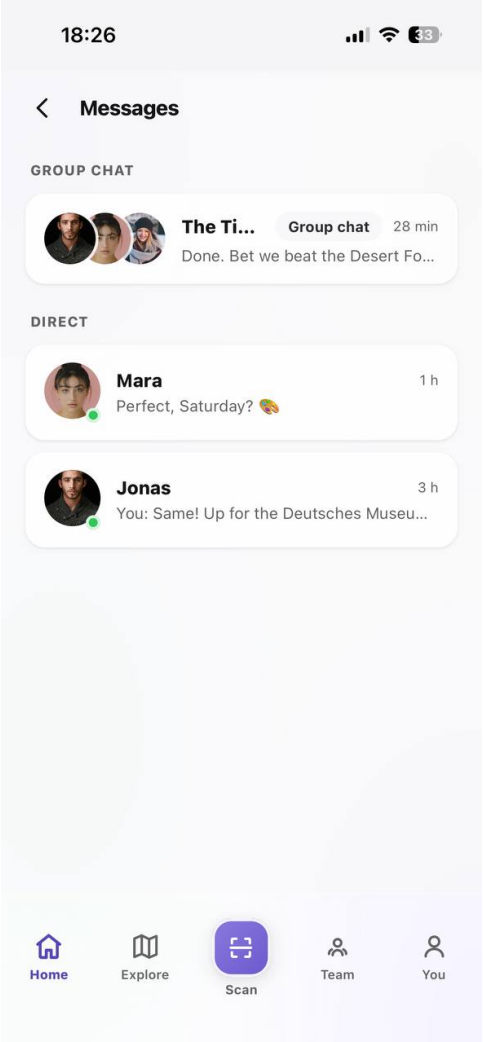
The Team tab shows open teams nearby, lets the user discover other explorers, and provides the team creation flow (name the team, share a code or QR, teammates join instantly). Messages connects group chats and direct conversations between explorers.



Screen 13: Team tab (Tehran Explorers, 3 members, 2 spots open, Golestan Palace quest)



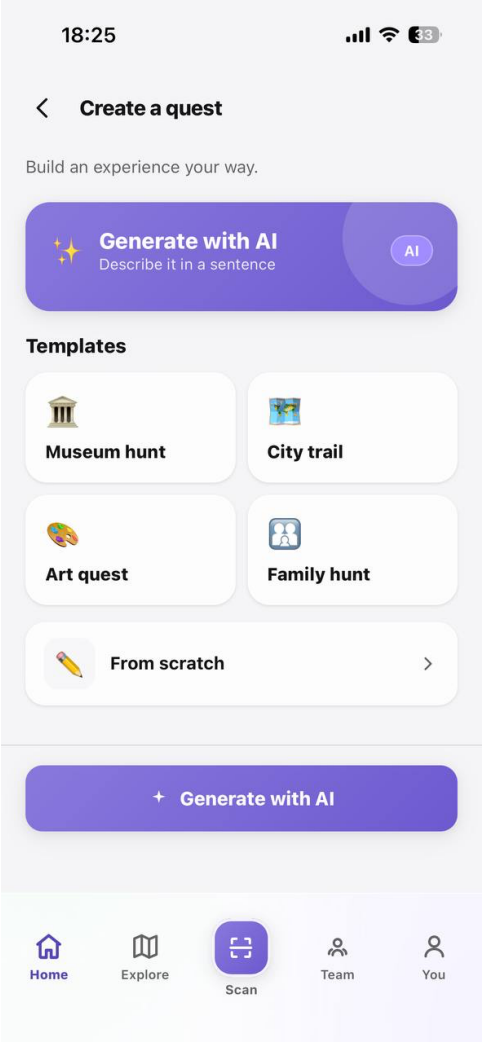
Screen 14: Start a team (for Palace of the Rose Garden, share code or QR)



Screen 15: Messages. Group chat plus direct messages. Jonas: “Up for the Deutsches Museum?” Mara: “Perfect, Saturday?”

A.6 Create a Quest

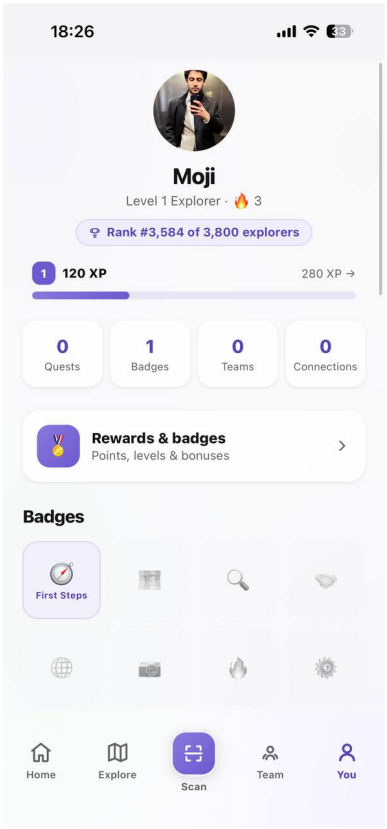
Creation has three paths: Generate with AI (describe it in a sentence), choose from four templates (Museum hunt, City trail, Art quest, Family hunt), or build from scratch. Every path leads to the same result: a publishable quest with stops, rules, and an optional prize.



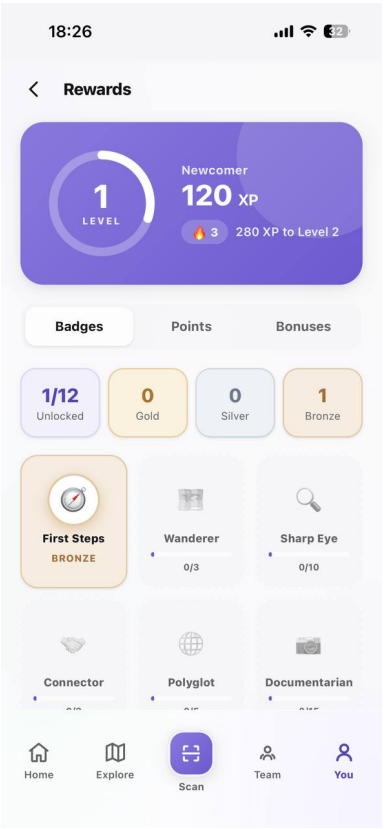
Screen 16: Create a quest. AI generation plus four templates plus from scratch. The full creation flow, one screen.

A.7 Profile and Rewards

The You tab shows the user's rank (Moji: #3,584 of 3,800 explorers), XP progress, quest and team stats, and the full badge collection. The Rewards detail screen breaks badges into Gold, Silver, and Bronze tiers with named achievements: First Steps (earned, Bronze), Wanderer, Sharp Eye, Connector, Polyglot, Documentarian.



Screen 17: Profile (Level 1 Explorer, 120 XP, Rank #3,584 of 3,800)



Screen 18: Rewards detail (1/12 badges unlocked, First Steps Bronze, progression to Level 2)

Appendix B: Project Artefacts

Web app: https://mojitorabi.github.io/Curio/ (open in any browser on iOS or Android, no install, no account)

Presentation deck (HTML): https://mojitorabi.github.io/Curio/Curio_Case_Study.html

SHAMS AR field test (video, Golestan Palace, Tehran): mojitorabi.github.io/Portfolio/assets/work/shams/shams-ar-prototype.mov

Demo deep links: ?demo=explore, ?demo=translate, ?demo=board (used by the presentation deck and earlier versions of this document).

> **Publishing the presentation deck**
> Curio_Case_Study.html served from the root of the Curio repository is already live at the link above via GitHub Pages. No additional configuration is needed.