GeoMusik

UX CASE STUDY · 2026

Hear what the world is playing.

How a single-file web app turns a map into a music discovery instrument — a study of its features, interactions and the insights behind them.

DESIGN & BUILD
César Martins Lima

STUDIO
Subversive Symmetry

FORMAT
Web app · PWA · 1 HTML file

— AT A GLANCE

A world map you can listen to.

GeoMusik answers one question — what is this place listening to right now? Pick a spot by GPS, search, a tap on the map or a roll of the dice, and you get that country's live chart — or, for any town, the artists made there — with 30-second previews.

This study walks through the people it serves, the design system, the core interaction model, ten key features in depth, and the insights that shaped them under strict constraints.

1
self-contained HTML file — no build step, no framework

0
API keys for maps, geocoding or location

11
key features studied in depth, led by Made here

Any
town on Earth — local scenes via open MusicBrainz data

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Charts are global. Taste is local.
Most music apps hide the gap.

Streaming platforms personalise you into a bubble; global charts flatten everywhere into the same thirty songs. GeoMusik's premise is the opposite: let place be the filter, and make it effortless to wander from one place to the next.

That premise only works if getting to a place is instant, listening is frictionless, and every screen offers somewhere new to go. The features in this study each serve one of those three jobs.

WHO IT'S FOR · PROTO-PERSONAS

THE TRAVELLER

"What does this city sound like?"

Before or during a trip, wants a place's soundtrack in seconds — usually on a phone, often with patchy location permission.

THE DIGGER

"Show me what I've never heard."

Hunts for local scenes the global charts bury. Wants threads to pull — tags, similar artists, the next country over.

THE HOMESICK

"What's playing back home?"

Checks in on a country they left; saves finds and sends links to friends and family.

Four rules every decision was tested against.

01

Never dead-end

Every failure — blocked GPS, ocean tap, missing chart, no preview — resolves into something useful: an approximate area, a neighbour, a link out.

02

Reward wandering

Discovery is a loop, not a lookup. Every screen should offer a next step: a similar artist, a tag, another country, the next track.

03

Feel, then read

Motion and procedural sound confirm actions before text does. Feedback is soft, musical and always optional.

04

Constraints are a feature

One file, zero keys, no build. Anyone can host it anywhere — so every service needs a free fallback and every feature must earn its bytes.

Night-map dark, with one electric signal.

The interface recedes so the map and the music lead. A single acid-lime accent marks everything “alive”: your position, the selected country, the track that’s playing, the action to take next.

WORDMARK

GeoMusik

The mark is a five-bar waveform in a lime tile — a sound you can see, sitting on the map like a pin.

COLOUR

Signal	Night	Raise	Paper
#C8FF3E	#0A0B0D	#171A20	#EEF0F3

Info	Warn	Love / error	Popularity
#6FC3FF	#FFB547	#FF6161	bar gradient

TYPE

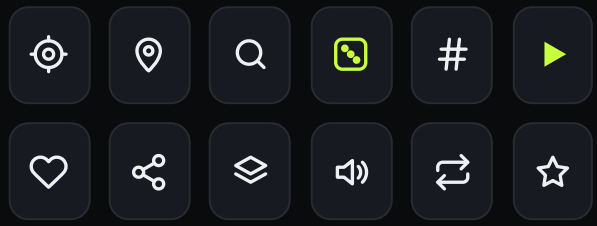
Bricolage Grotesque

Headlines, names, UI. Wide optical range; quirky enough to feel made by a person.

JetBrains Mono

Data: ranks, listener counts, badges, timecodes. GPS ±18m · 2.4M

ICONOGRAPHY



2px rounded strokes on a 24-grid; filled only for play/pause and “loved”. Hand-written SVG sprite — no icon font to download.

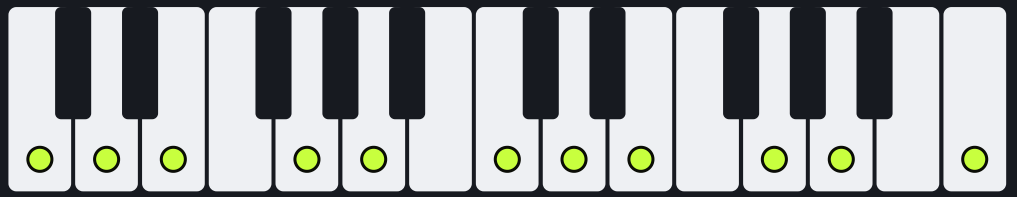
Every tap is a note in the right key.

All interface sound is synthesised live with the Web Audio API — no samples, a few kilobytes of code.

Notes are drawn from a major pentatonic scale, so any overlap of hovers, taps and chimes stays consonant. Each country hashes to its own root note: arriving in Japan literally sounds different from arriving in Brazil.

When a preview starts, UI sound ducks from 55% to 18% so it never fights the music. One key — `M` — mutes it all, and the choice persists.

PENTATONIC DEGREES · ROOT SHIFTS PER COUNTRY



Root note per country (hashed): PT → C4 · JP → E♭4 · BR → G3 · NG →
Lime = degrees 1·2·3·5·6 of the major pentatonic — no two notes clash.

INTERACTION → SOUND

MOMENT	GESTURE	SOUND
Hover	Mouse over a row or button	Tiny high sine tick, rate-limited to 70 ms
Map tap	Pick a spot	Low filtered tone + airy fifth
Locating	GPS search	Rising band-passed noise “sonar” sweep
Place found	Chart arrives	Five-note arpeggio in the place’s key, wet reverb
Surprise me	Dice roll	Fast scrambled pentatonic run
Save / unsave	Heart	Rising third vs. falling step
Error	Warn toast	Two-note descending triangle

05 — 07

The experience.

Anatomy of the interface on desktop and mobile, and the location flow designed so nobody is left stranded.

The map is the canvas. The panel is the instrument.



A bottom sheet that knows when to get out of the way.

On phones the panel becomes a draggable sheet peeking at 52% of the screen, so the map stays tappable above it.

Swipe the content, not a tiny handle

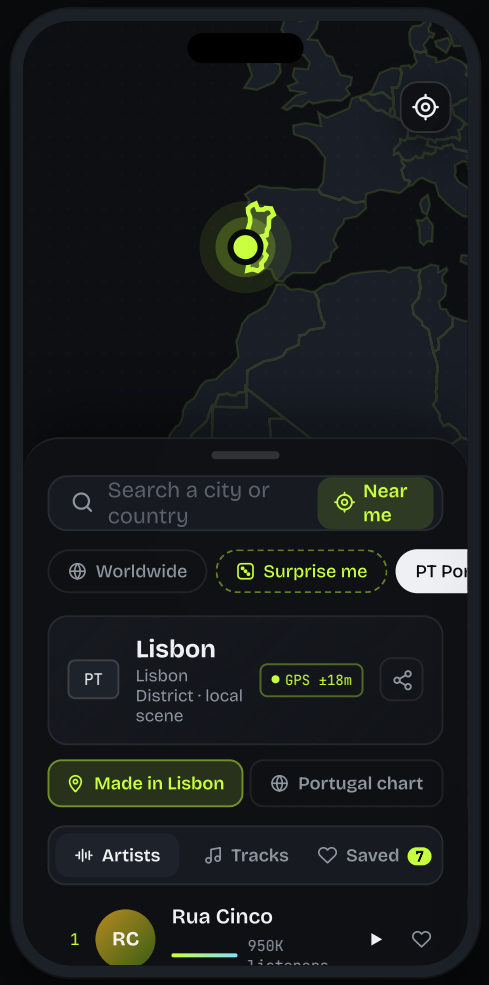
Swipe up anywhere on the sheet to open it; pull down from the top of a list to lower it. The sheet resizes rather than sliding, so the list and player are always on-screen.

The map pushes the sheet down

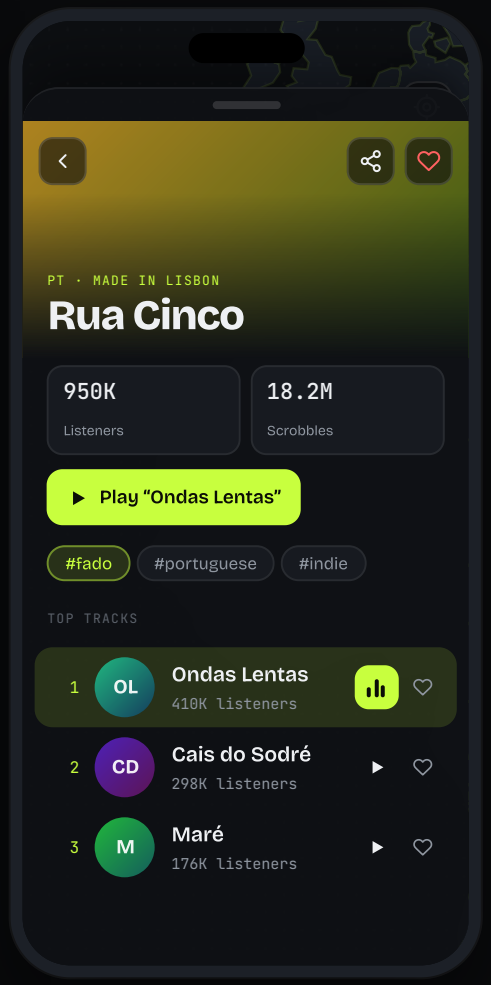
Start panning and the sheet drops to peek. Focus search and it rises to full height.

Camera offsets for the sheet

Every fly-to centres the place in the visible map above the sheet, not behind it.



PEEK · MAP STAYS TAPPABLE



FULL · SWIPE UP ON ANY CONTENT

“Use my location” is a staircase, not a cliff.

Each step down trades precision for certainty. Whatever happens, the person ends up somewhere real — and is told honestly how precise it is.

STEP 1
Pre-check
Secure page? Permission already denied? Answer before asking — no doomed prompts.

→

STEP 2
Fast fix
Network location with a 10-minute cache: quick, battery-friendly.

→

STEP 3
GPS retry
On timeout, try once more with the high-accuracy chip.

→

STEP 4
Approximate area
Three free IP lookups in turn. Badge reads APPROX.

→

ALWAYS
A place + a chart
Or, as a last resort, search is focused with a toast offering it.

WHEN PERMISSION IS BLOCKED

A help sheet detects the platform — iOS, Android, macOS, Windows, Safari — and the embedded-iframe case, then gives the exact settings path, with Use approximate area as the primary button.

HONEST PRECISION

Badges say how a place was found: GPS ±18m, APPROX, SEARCH, MAP. A real accuracy circle is drawn for GPS fixes.

TAPPED THE OCEAN?

Two reverse-geocoders are tried; if there’s genuinely no country, the pin is withdrawn and a toast suggests tapping on land — never an empty list.

Fifteen shortcuts, one row, any input.

Worldwide, Surprise me and thirteen countries live in one horizontal row. On a phone a swipe reveals the rest, but a mouse has no natural way to scroll sideways — overflow you can't see is content that doesn't exist.

So the row layers four affordances, each covering a different input habit:

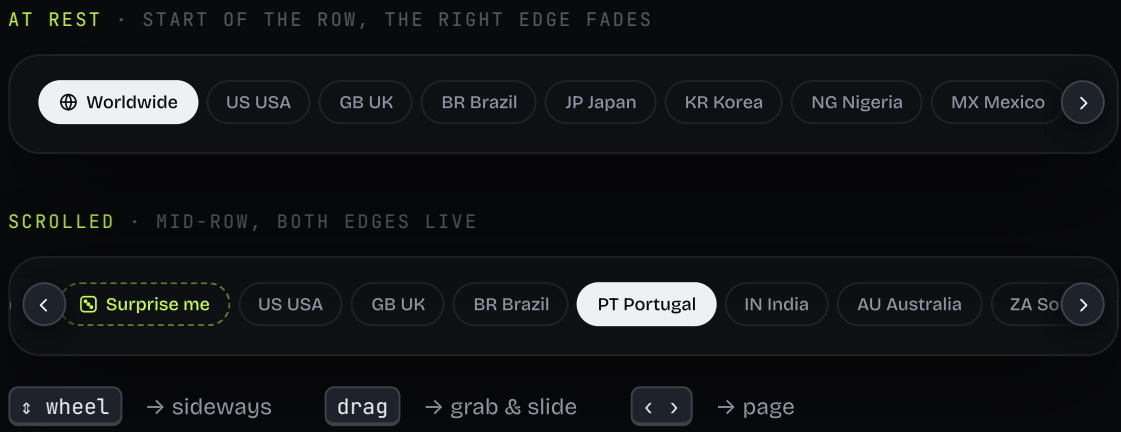
A **Edge fades** appear only on the side with more content.

B **Arrow buttons** on hover-capable devices page by 70%.

C **Wheel mapping** — vertical scroll moves the row sideways.

D **Click-and-drag**, with a 5px threshold so a drag never fires a chip.

Bonus: when the place changes, the active chip glides to the centre of the row.



09 — 14

The features.

Led by **Made here** — town-level local scenes — then ten more, grouped by the job they do: **discover**, **keep listening**, **share & keep** and **see**.

SPOTLIGHT · MADE HERE 01–03 DISCOVER 04–07 KEEP LISTENING 08–09 SHARE & KEEP 10 SEE

Every town has a sound — even the ones without a chart.

Public listening charts stop at the border. Made here goes below it: pick any town and GeoMusik finds the artists who are based there or were born there, ranked by how much the world actually plays them.

1 · Place
Reverse-geocoding gives the town and its region — from GPS, search or a tap.

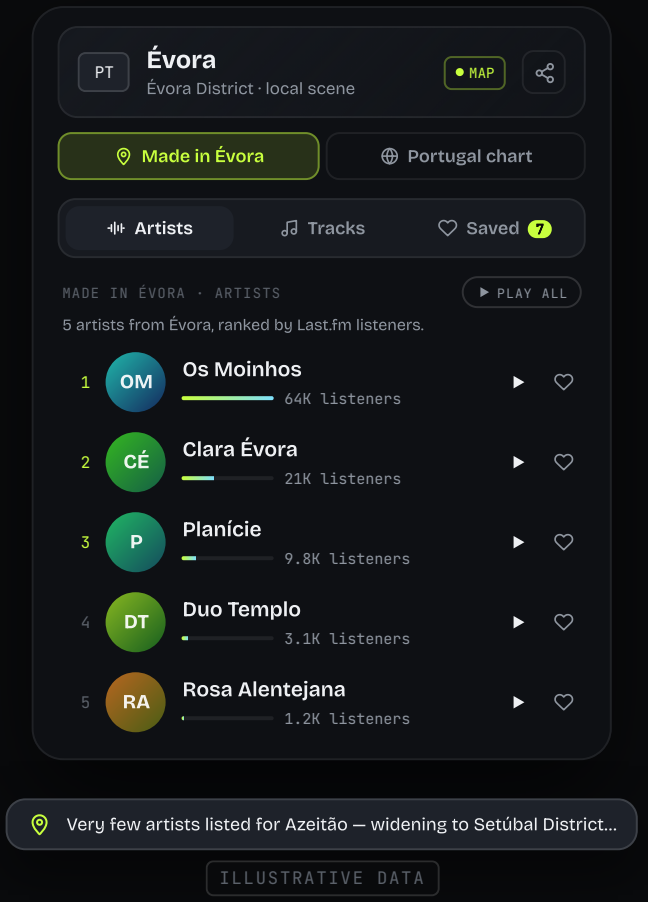
2 · Find
MusicBrainz: artists whose area *or* birthplace is the town. Up to 300, at ≤1 request/s.

3 · Filter
Drop same-named towns in other countries and acts with no listeners.

4 · Prioritise
Big cities: artists already in the country's top 500 are checked first.

5 · Rank
Real Last.fm listener counts, matched by MusicBrainz ID — never a famous namesake.

6 · Remember
Cached on the device for 24 h; revisits are instant. Tiny villages widen to their region.

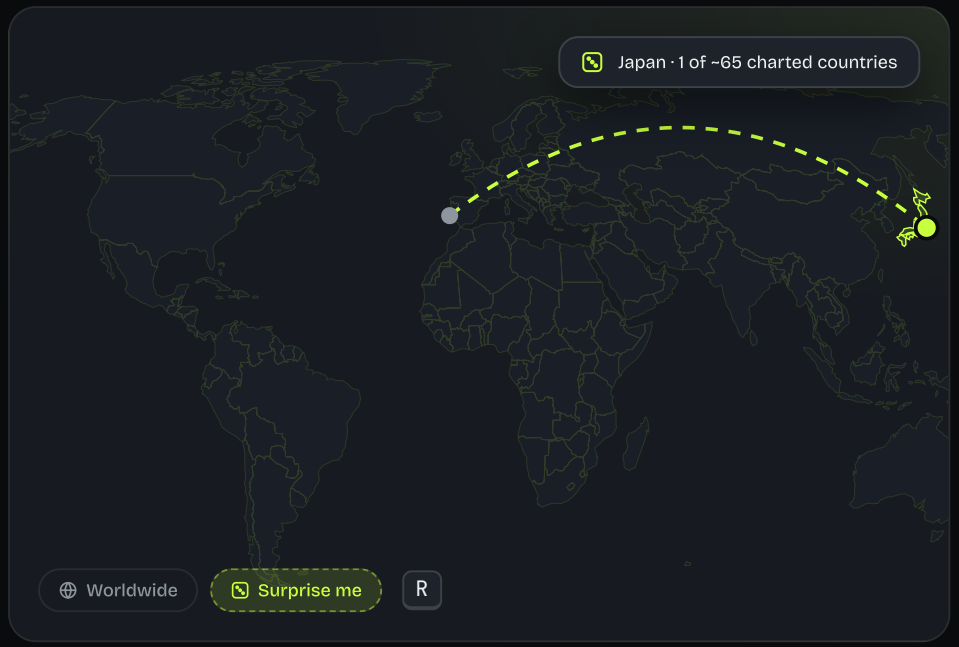


NEED — "What does *this* town sound like?" — asked about places no chart covers.

FEATURE — A **Made in <town> / <country> chart** switch appears for any town or city; Made here is the default and the choice is remembered.

INSIGHT — **Name the data honestly. It says "Made in", never "Played in" — the scene, not the streams.**

01 DISCOVER
Surprise me



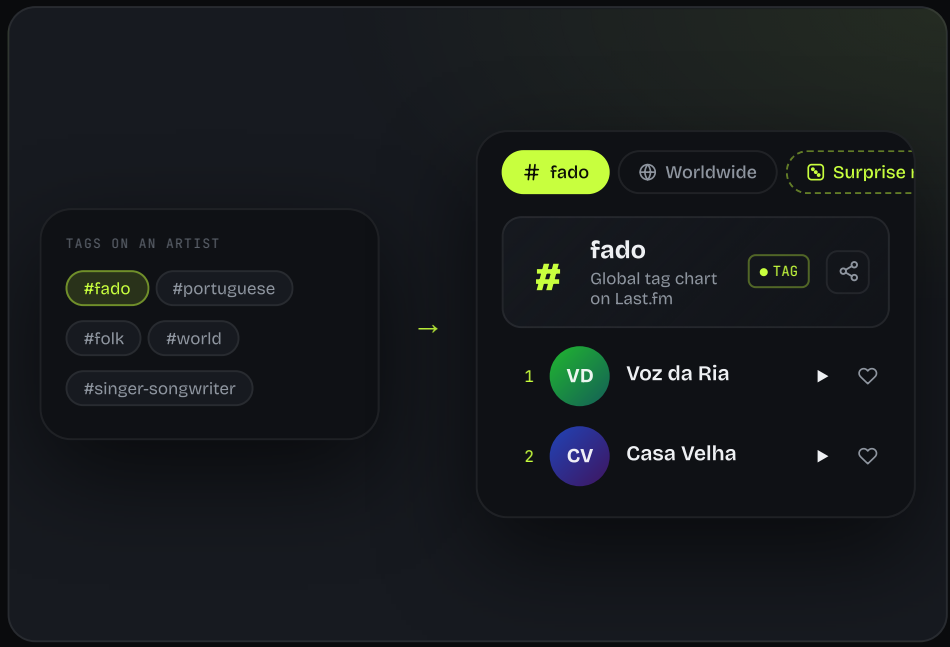
NEED Not knowing where to start is the most common blank-page moment on a world map.

FEATURE A dice chip (or `R`) flies to a random country — never the one you're in.

DETAIL The pool only holds ~65 countries that have Last.fm charts, so a roll never lands on an empty state. A scrambled pentatonic run makes it feel like a toy.

INSIGHT **Randomness with guardrails feels playful, not broken.**

02 DISCOVER
Tag explorer



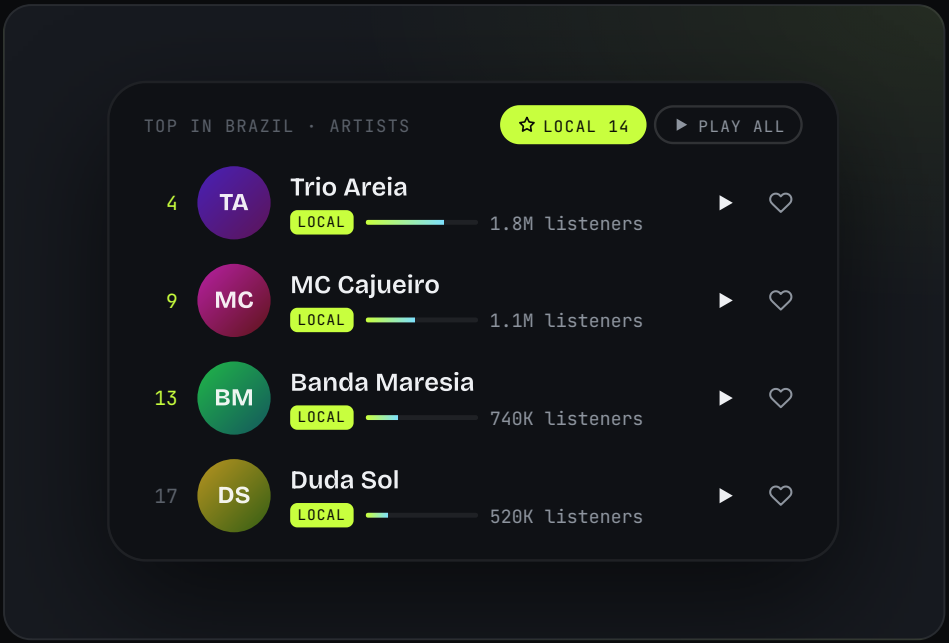
NEED Genre is a thread that crosses borders — fans follow sounds, not flags.

FEATURE Tap any tag on an artist page to load the worldwide chart for that tag. A lime `#tag ×` chip shows you're in tag mode.

DETAIL Your place is kept underneath: × returns you to it. Shared links remember the tag.

INSIGHT **Let people change the filter without losing their place.**

03 DISCOVER
Local heroes



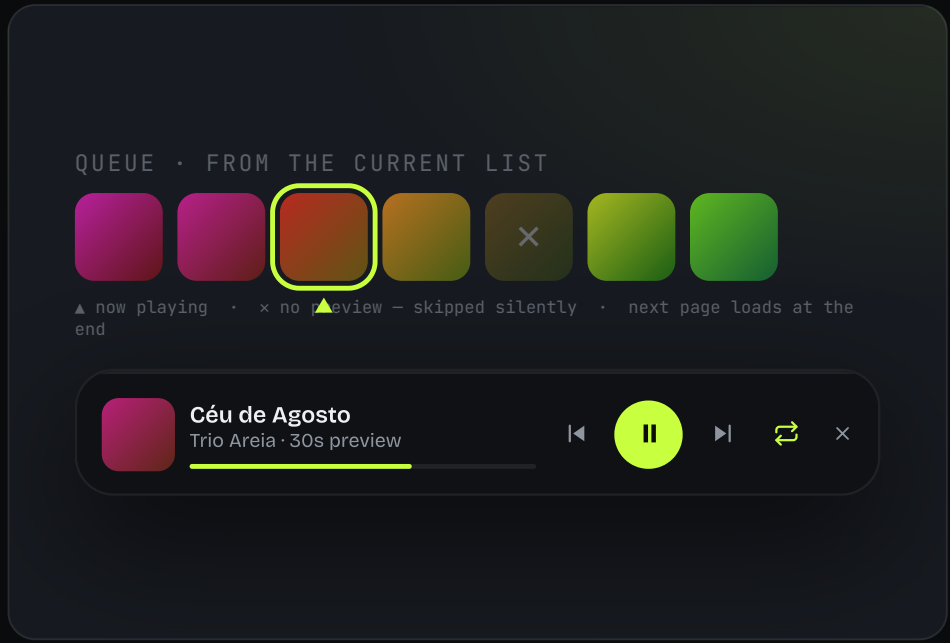
NEED Country charts overlap heavily with the global chart; the local flavour gets buried.

FEATURE On country charts, acts absent from the global top 500 get a LOCAL badge; a Local filter hides everything else.

DETAIL The global list is fetched once per session and cached. If too few local acts are loaded, more pages load automatically.

INSIGHT **Subtraction can be a discovery tool.**

04 KEEP LISTENING
Play queue & autoplay



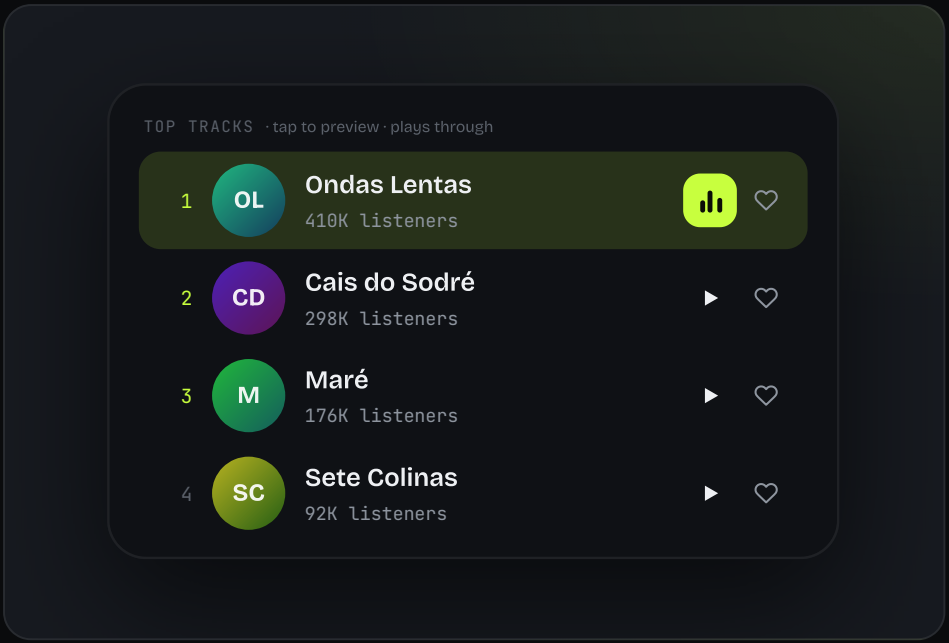
NEED One preview at a time is a slot machine, not a radio.

FEATURE Play all, previous/next and autoplay turn any list — a chart, Made here, Saved, an artist's top tracks — into a queue.

DETAIL Tracks without previews are skipped silently; at the end of a loaded chart the next page is fetched and play continues. The playing row scrolls into view.

INSIGHT **Momentum is the feature.**

05 KEEP LISTENING
Artist top tracks



NEED An artist page should answer “what do I play?” in one glance.

FEATURE The six most-played tracks sit right under the tags, each previewable; tapping one queues the rest.

DETAIL Rows reuse the main list component — the same play, save and equaliser states everywhere in the app.

INSIGHT **Consistency lets people stop thinking about the interface.**

06 KEEP LISTENING
Lock-screen controls



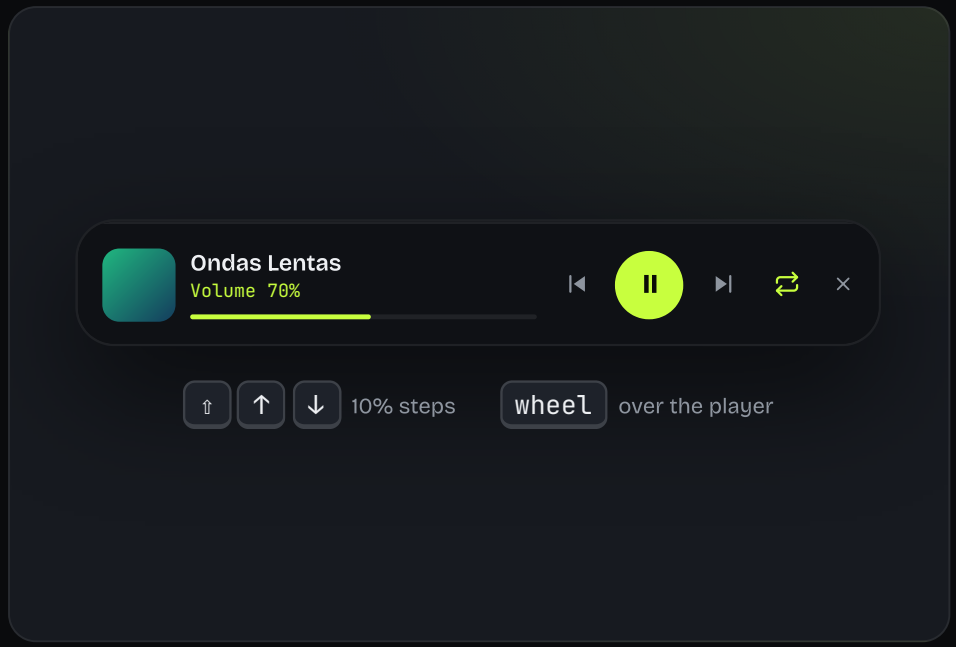
NEED Phones go in pockets; the music shouldn’t stop being controllable.

FEATURE Cover, title and place appear on the lock screen with play, pause, next, previous and seek.

DETAIL Headphone buttons and keyboard media keys drive the same queue. The album line reads “GeoMusik · place”.

INSIGHT **Sometimes the best UI is the one the OS already provides.**

07 KEEP LISTENING
Volume



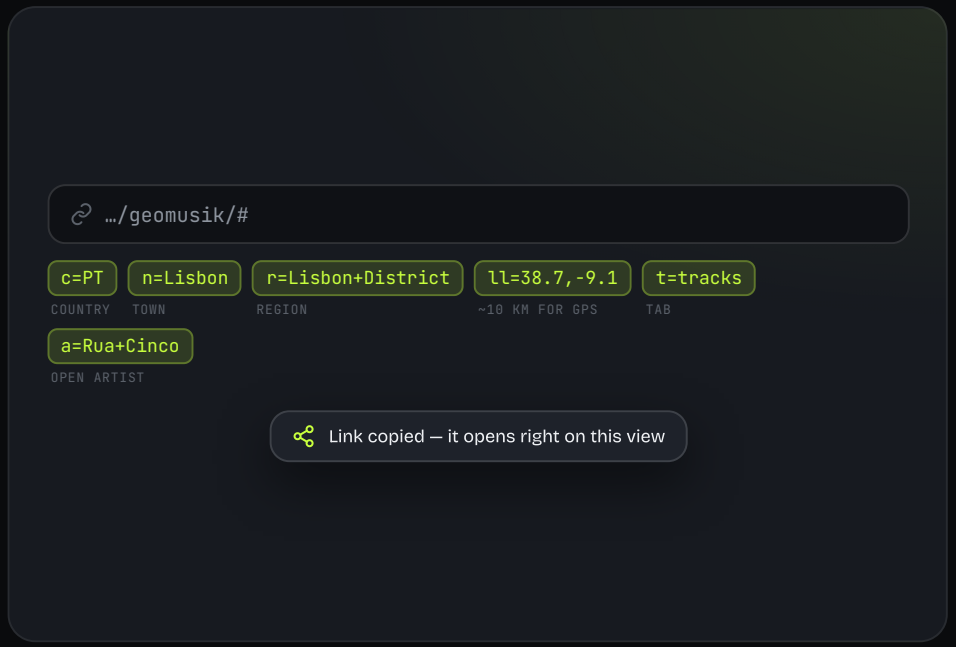
NEED Previews from different labels vary wildly in loudness.

FEATURE Scroll over the player or press ⇧ + ↑ / ↓ to change volume in 10% steps; the level is remembered.

DETAIL Feedback appears inline in the player for 1.2 s instead of a toast, then the artist line returns.

INSIGHT **Feedback belongs where the eyes already are.**

08 SHARE & KEEP
Shareable links



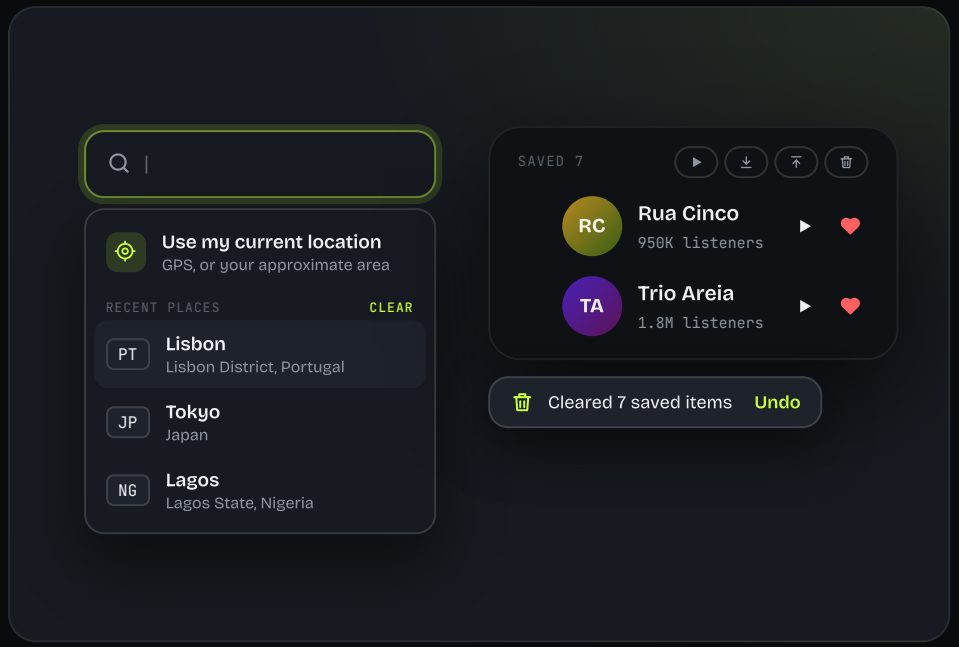
NEED A find isn't real until you can send it to someone.

FEATURE Place, town scope, tab, tag and open artist live in the URL. The share button copies it, or opens the native share sheet on phones.

DETAIL Opening a link restores the exact view. GPS positions are rounded to ~10 km before they enter a link.

INSIGHT **Privacy decisions hide inside convenience features.**

09 SHARE & KEEP
Recent places & saved lists



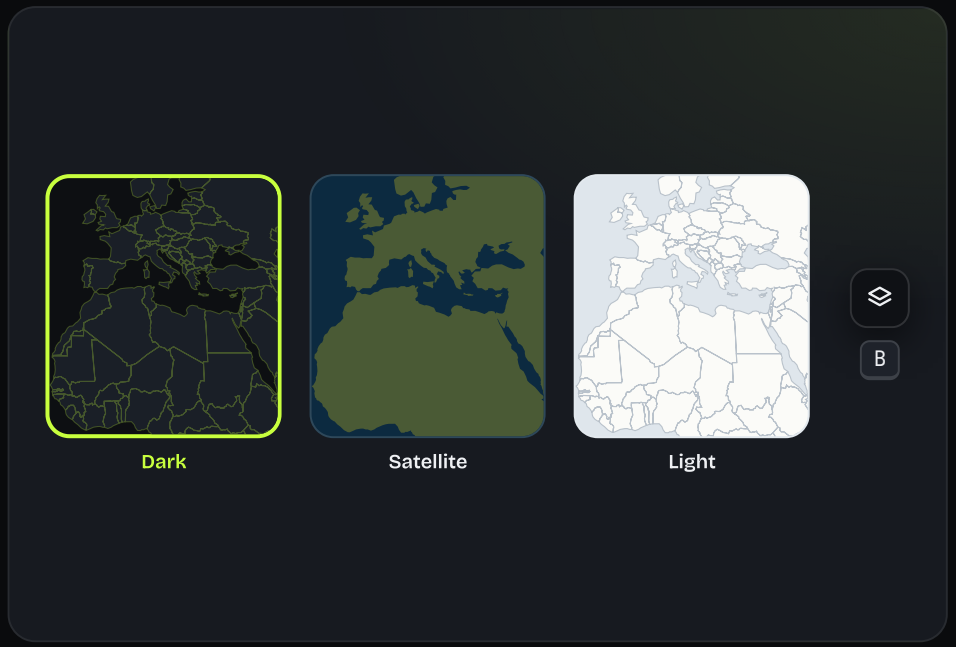
NEED People keep returning to the same few places and favourites.

FEATURE Focusing search lists your last six places. The Saved tab exports and imports lists as JSON and offers Undo after clearing.

DETAIL Everything stays on the device. Imports are validated and only https links are kept.

INSIGHT **Memory features save more effort than any shortcut.**

10 SEE
Map styles



NEED Dark suits browsing at night, satellite suits wanderlust, light suits daylight.

FEATURE A map button (or `B`) cycles Dark, Satellite and Light — all keyless.

DETAIL Each style has its own fail-over chain; if every tile source fails, country borders become the map.

INSIGHT **Offer a choice only where taste genuinely differs.**

Free services fail. The app shouldn't.

Zero API keys means relying on public, rate-limited services. Every dependency has a chain of fallbacks, and the last link is always something the person can still use.

JOB	FALLBACK CHAIN
Base map	`OpenStreetMap` → `Esri canvas` → `vector borders only`
Reverse geocode	`Nominatim` → `BigDataCloud` → `"tap on land" toast`
Place search	`Photon` → `Nominatim` → `"tap the map instead"`
Approx. location	`geojs` → `ipwho.is` → `ipapi` → `focus search`
Local scene	`MusicBrainz town` → `widen to region` → `24 h cache` → `country chart button`
Country charts	`cached name` → `ISO aliases` → `display name` → `"try a neighbour"`
Previews & art	`strict Deezer match` → `loose match` → `YouTube link`
First paint	`splash` → `hard cap at 2.5s`

KEYBOARD MAP

`/`	Search a place
`L`	Use my location
`R`	Surprise me
`B`	Cycle map style
`M`	Mute interface sounds
`Space`	Play / pause
`N`	Next preview
`P`	Previous / restart
`⇧` `↑↓`	Volume
`Esc`	Back / close

ACCESSIBILITY NOTES

ARIA combobox search with arrow-key selection · live regions for place and toasts · visible lime focus rings · hover sounds mouse-only · full `prefers-reduced-motion` support.

Six things this project taught us.

01

Location is a promise.

The first tap on “Near me” is a trust test. Recovering gracefully — and saying how precise the result is — matters more than raw GPS accuracy.

02

Name the data honestly.

Town-level listening data isn’t public, but town-level *origin* data is. Labelling it “Made in”, not “Played in”, turns a limitation into a clear, trustworthy feature.

03

Serendipity is a feature you design.

Dice, tags and “sounds like” turn a lookup tool into a loop. Each gives a confident next step instead of a blank search box.

04

“Local” is the interesting signal.

Country charts overlap heavily with the global chart. Subtracting the global top 500 surfaces the scene that makes a place sound like itself.

05

The URL is part of the interface.

Encoding the view in the link made sharing free — but forced a privacy decision: GPS positions are rounded to ~10 km before they leave the device.

06

Sound should be felt, not noticed.

Pentatonic notes, a key per country and ducking under previews keep audio feedback pleasant enough to leave on — and one key away from off.

Where the map could take us.

Ideas this study opened up, ranked by how much they'd deepen the core loop of place → listen → wander.

VALIDATE WITH PEOPLE

This case study documents design rationale, not measured outcomes. Next step: short moderated sessions on desktop and mobile, plus privacy-friendly counts of first-run location success, dice rolls and shared links.

IDEA	WHY IT MATTERS	EFFORT
Played here	Real city listening charts, if a licensed, keyless source ever appears — shown beside Made here.	L
Compare two places	Side-by-side scenes or charts with overlap highlighted — local heroes made visual.	M
Journey mode	Auto-advance across neighbouring countries — a radio road-trip.	M
Export to playlists	Saved list → Spotify / Apple Music search links in one go.	S
Offline shell	Service worker caches the app and last chart for flaky connections.	S
Shortcut overlay	A `?` sheet so the keyboard map is discoverable in-app.	S



GeoMusik

Hear what the world is playing.

DESIGNED & BUILT BY

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POWERED BY

Subversive Symmetry

subversive-symmetry.com

Charts & bios: Last.fm · Previews: Deezer · Map: © OpenStreetMap contributors, Esri · Borders: Natural Earth · UI mockups use illustrative data