# Gazetteer Project: System Overview & 2‑Week Work Plan

**Version 0.1 — 1 Jul 2025**

## 1. Vision & Goals

Build a **mobile‑first, single‑page “Gazetteer” web app** that profiles every country via an interactive map, aggregating demographic, climatic, geographic and other open data. Users should enjoy the same smooth experience on phones, tablets, and desktops.

## 2. Core Functionality

* **Auto‑detect user location** and highlight their country (navigator.geolocation).
* <select> loaded with all ISO‑listed countries from countryBorders.geo.json via PHP.
* **Leaflet map** featuring:
  + Border polygon of the selected country.
  + Marker layers for capital, major cities, POIs, earthquake history, etc. (GeoNames & more).
  + Clustering (Leaflet.markercluster) and utility buttons (EasyButton / ExtraMarker).
* **Modal / off‑canvas info panel** with tabs:
  1. *General*: Country name, capital, ISO codes, flag, population, area.
  2. *Weather*: Current & 3‑day forecast (OpenWeather).
  3. *Currency*: Live exchange rate vs EUR (Open Exchange Rates).
  4. *Explore*: Wikipedia summary + links, GeoNames POIs.
* **Search & filter tools**: quick‑find a country, toggle overlay layers.
* **Loader spinner** during initial render.

## 3. Technical Stack

| Layer | Tech |
| --- | --- |
| Front‑end | HTML5, CSS3 (Bootstrap 5), JavaScript ES6, jQuery, Leaflet 1.9 + MarkerCluster, EasyButton, ExtraMarker |
| Back‑end | PHP 8.x with cURL; endpoints under /php/api/\*.php |
| APIs | OpenCage, GeoNames, Rest Countries, OpenWeather, Open Exchange Rates (plus optional extras like USGS earthquakes) |
| Tooling | VS Code, Git, Dinahosting FTP (FileZilla), Chrome DevTools |

## 4. Architecture & Data Flow

1. **SPA loads →** Bootstrap & Leaflet initialise.
2. **Geolocation →** coords sent via AJAX to php/api/geolocate.php (OpenCage) to derive ISO code.
3. **Parallel AJAX requests** fetch country info, weather, currency, POIs.
4. **Front‑end renders** border polygon, markers, and populates UI panels.

## 5. UI / Layout Sketch (ASCII)

NAVBAR  
┌──────────────────────────────┐  
│ 🌐 Gazetteer | Country ▾ │  
└──────────────────────────────┘  
MAP (fills viewport)  
[Leaflet canvas]  
Floating buttons: 🔍 Layers 🗺 Info  
Modal / Drawer slides from right with tabs: Info | Weather | Finance | Explore

## 6. Two‑Week Work Plan (2 Jul – 15 Jul 2025)

| Date | Hours | Focus | Deliverables |
| --- | --- | --- | --- |
| **Wed 2** | 8 | Project repo, scaffolding, Bootstrap, Leaflet starter map | Git repo + base index.html |
| **Thu 3** | 8 | Country borders & dropdown, geolocation highlight | Border polygon renders |
| **Fri 4** | 8 | PHP endpoint layer, OpenCage + Rest Countries integration | /php/api endpoints, Info tab |
| **Sat 5** | 3 | Refactor, UI polish, code cleanup | Cleaner structure |
| **Sun 6** | 3 | Research & stub remaining APIs | Config file for API keys |
| **Mon 7** | 8 | OpenWeather integration, weather overlay | Weather tab & map icons |
| **Tue 8** | 8 | Open Exchange Rates, currency tab | Live FX display |
| **Wed 9** | 8 | GeoNames POI & Wikipedia markers | Cluster layer operational |
| **Thu 10** | 8 | Extra data layer (earthquakes), layer controls | Toggleable layers |
| **Fri 11** | 8 | UX enhancements, responsive tweaks | Mobile layout ready |
| **Sat 12** | 3 | Cross‑device & browser testing | Test report |
| **Sun 13** | 3 | Performance & accessibility fixes | Lighthouse > 90 |
| **Mon 14** | 8 | Final polish, README, deployment | Public URL live |
| **Tue 15** | 8 | Buffer, demo video/GIF, submission | Demo + sign‑off |

*Total planned hours:* ***92***\* (80 weekday + 12 weekend) → ~22 h buffer beyond 70 h estimate.\*

## 7. Risks & Mitigations

| Risk | Mitigation |
| --- | --- |
| API quota limits | Cache responses, stagger calls, use multiple keys |
| Time overrun | Front‑load core map & data; buffer day |
| Mobile perf issues | Test early on low‑end devices |
| Scope creep | Freeze feature list after Day 7; extras only if time remains |

## 8. Next Steps

1. Await approval of this plan.
2. Upon approval, begin **Day 1 tasks on 2 Jul**.
3. Maintain daily progress notes & commit logs.

*Prepared for Amaia Artola — 1 Jul 2025*

| **Date** | **Hours** | **Focus** | **Deliverables** |
| --- | --- | --- | --- |
| **Fri 5** | 8 | PHP endpoint layer, OpenCage + RestCountries | /php/getTownInfo.php, modal layout |
| **Sat 6** | 3 | Refactor, code cleanup | Modular JS + PHP, better structure |
| **Sun 7** | 3 | Research + API stubs | Config for API keys, test endpoints |
| **Mon 8** | 8 | OpenWeather integration | Weather tab + map icons |
| **Tue 9** | 8 | Open Exchange Rates + currency tab | Currency info with live FX display |
| ❌ Wed 10 | — | ✈️ Unavailable (travel) | — |
| **Thu 11** | 8 | GeoNames POIs + Wikipedia markers | POI markers clustered |
| **Fri 12** | 8 | Extra data layers (e.g. earthquakes) + toggles | Layer control UI |
| **Sat 13** | 3 | UX tweaks + Bootstrap (moved here) | Responsive layout, polished UI |
| **Sun 14** | 3 | Cross-browser/device testing | Testing checklist |
| **Mon 15** | 8 | Final polish, README, deployment | Public URL + GitHub cleanup |
| **Tue 16** | 8 | Buffer day + demo recording | Demo GIF/video + sign-off |

Need to do : change get file contents to using cURL instead in other PHPs.

Check the php and ajax and also the modal to make sure it works, before committing.

You're on track — here’s what’s **left to do** according to your original spec (adjusted for your changes like moving Bootstrap to the end and skipping work on the 9th):

### ✅ Already done:

* ✅ Geolocation & fallback
* ✅ Country dropdown & borders
* ✅ Marker clusters for cities
* ✅ getCityInfo.php (cURL, working with Postman)
* ✅ Git structure + repo
* ✅ Cleaned unused files

### 📅 What's left (based on your plan):

#### 🔹 Sat 5 (today/tomorrow – 3 hrs):

* **Refactor JS & PHP structure** (tidy functions, filenames, variables)
* **Modal system**: wire city marker → modal with tabs (weather, POI…)
* **City Info → modal tab 1** (already started)

#### 🔹 Sun 6 (3 hrs):

* Research/stub **remaining APIs**
  + OpenWeather
  + Rest Countries
  + Exchange Rates
  + Wikipedia / POIs
  + Optional: Earthquakes
* Create config.php for API keys (not hardcoded)

#### 🔹 Mon 7:

* **Weather integration**
  + Ajax call to PHP → OpenWeather API (cURL)
  + Add to modal
  + (optional: map icons)

#### 🔹 Tue 8:

* **Currency API**
  + Use OpenExchangeRates or exchangerate.host
  + Show exchange rate in modal (tab)

#### 🔹 Wed 9:

* ❌ Skip (travel day)

#### 🔹 Thu 10:

* **Add extra layer** (e.g., earthquakes or custom dataset)
  + Toggleable on map (Leaflet layer controls)

#### 🔹 Fri 11 – Mon 15:

* UX, responsive tweaks, accessibility
* Final testing
* README + deployment
* Bootstrap styling

### 🔸 Suggested immediate next step (small):

Finish **modal wiring for city marker** with existing city info (from your working PHP).

Then, we’ll plug in weather / POI / currency tab by tab.

Want me to organize a checklist for tomorrow with priorities?