<https://gemini.google.com/u/1/app/cc0bffb89378d0df?is_sa=1&android-min-version=301356232&ios-min-version=322.0&campaign_id=bkws&utm_source=google&utm_medium=cpc&utm_campaign=2024enUS_gemfeb&pt=9008&mt=8&ct=p-growth-sem-bkws>

<https://gemini.google.com/u/1/app/a3fdff8118a11194>

### 3\. Updated Production-Ready Specification: `public.provinces`

1\. Purpose & Primary Use-Cases

This table stores core identifying information, codes, and relational links for administrative subdivisions like provinces, states, or counties. These entities fall under a region and typically contain multiple towns. It provides a granular level of geographical organization for data mapping, localized content retrieval (via `public.translations`), and filtering.

Key User-Story Touchpoints:

- Pilgrim: Sees translated province information as part of a town's context or in geographical navigation.

- Admin/Manager: Manages core province records and initiates translation.

- Platform: Uses province data for spatial queries, aggregation, and external dataset integration.

2\. Schema

| Column Name | Data Type | Constraints | Description |

| `id` | `SERIAL` | `PRIMARY KEY` | Unique identifier for each province. Used as `row\_foreign\_key` in `translations`. |

| `region\_id` | `INTEGER` | `NOT NULL`, `REFERENCES public.regions(id) ON DELETE RESTRICT` | Foreign key to the `regions` table this province belongs to. |

| `country\_code` | `TEXT` | `NOT NULL`, `REFERENCES public.countries(iso\_3166\_1\_alpha\_2) ON DELETE RESTRICT ON UPDATE CASCADE` | 2-letter ISO 3166-1 alpha-2 country code. |

| `code` | `TEXT` | `UNIQUE` | Official abbreviation or code for the province (e.g., "PG"). Can be NULL. |

| `wikidata\_id` | `TEXT` | `UNIQUE` | Wikidata item ID for the province (e.g., "Q3862"). Highly recommended. |

| `geonames\_id` | `INTEGER` | `UNIQUE` | GeoNames ID for the province. Recommended for interoperability. |

| `is\_active` | `BOOLEAN` | `NOT NULL DEFAULT true` | Whether the province is active and usable. |

| `created\_at` | `TIMESTAMPTZ` | `NOT NULL DEFAULT now()` | Timestamp of creation. |

| `updated\_at` | `TIMESTAMPTZ` | `NOT NULL DEFAULT now()` | Timestamp of last update. Auto-updated by trigger. |

| `created\_by\_profile\_id` | `UUID` | `REFERENCES public.profiles(id) ON DELETE SET NULL` | Profile ID of the user who created the record. |

| `updated\_by\_profile\_id` | `UUID` | `REFERENCES public.profiles(id) ON DELETE SET NULL` | Profile ID of the user who last updated the record. |

Translatable Fields (Managed in public.translations table):

table\_identifier = 'provinces', row\_foreign\_key = provinces.id::text

- `name` (`column\_identifier = 'name'`)

- `description` (`column\_identifier = 'description'`)

3\. PostgreSQL DDL

SQL

```

-- Assumed dependent tables: public.regions, public.countries, public.profiles

-- Assumed i18n tables: public.translations

CREATE TABLE IF NOT EXISTS public.provinces (

id SERIAL PRIMARY KEY,

region\_id INTEGER NOT NULL REFERENCES public.regions(id) ON DELETE RESTRICT,

country\_code TEXT NOT NULL REFERENCES public.countries(iso\_3166\_1\_alpha\_2) ON DELETE RESTRICT ON UPDATE CASCADE,

code TEXT UNIQUE, -- e.g., 'PG' for Perugia. May be specific to country context.

wikidata\_id TEXT UNIQUE,

geonames\_id INTEGER UNIQUE,

is\_active BOOLEAN NOT NULL DEFAULT true,

created\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

updated\_at TIMESTAMPTZ NOT NULL DEFAULT now(),

created\_by\_profile\_id UUID REFERENCES public.profiles(id) ON DELETE SET NULL,

updated\_by\_profile\_id UUID REFERENCES public.profiles(id) ON DELETE SET NULL

);

COMMENT ON TABLE public.provinces IS 'Stores administrative subdivisions like provinces or states, linking to regions and countries. Names/descriptions are in public.translations. Version: 2.0';

COMMENT ON COLUMN public.provinces.id IS 'Primary Key. Unique identifier for each province. Used as row\_foreign\_key in translations table.';

COMMENT ON COLUMN public.provinces.region\_id IS 'Foreign key to the regions table this province belongs to. A province must belong to a region.';

COMMENT ON COLUMN public.provinces.country\_code IS '2-letter ISO 3166-1 alpha-2 country code this province belongs to.';

COMMENT ON COLUMN public.provinces.code IS 'Official abbreviation or code for the province (e.g., "PG" for Perugia). Can be NULL if not applicable/standard for a country.';

COMMENT ON COLUMN public.provinces.wikidata\_id IS 'Wikidata item ID for the province (e.g., "Q3862" for Province of Perugia). Highly recommended for interoperability.';

COMMENT ON COLUMN public.provinces.geonames\_id IS 'GeoNames ID for the province. Recommended for interoperability.';

COMMENT ON COLUMN public.provinces.is\_active IS 'Indicates if the province record is active and available for use.';

COMMENT ON COLUMN public.provinces.created\_at IS 'Timestamp of when the province record was created.';

COMMENT ON COLUMN public.provinces.updated\_at IS 'Timestamp of when the province record was last updated. Auto-updated by a trigger.';

COMMENT ON COLUMN public.provinces.created\_by\_profile\_id IS 'Profile ID of the user who created the province record.';

COMMENT ON COLUMN public.provinces.updated\_by\_profile\_id IS 'Profile ID of the user who last updated the province record.';

-- Indexing

CREATE INDEX IF NOT EXISTS idx\_provinces\_region\_id ON public.provinces(region\_id);

CREATE INDEX IF NOT EXISTS idx\_provinces\_country\_code ON public.provinces(country\_code);

CREATE INDEX IF NOT EXISTS idx\_provinces\_code ON public.provinces(code) WHERE code IS NOT NULL; -- Index only if not null

CREATE INDEX IF NOT EXISTS idx\_provinces\_wikidata\_id ON public.provinces(wikidata\_id) WHERE wikidata\_id IS NOT NULL; -- Index only if not null

CREATE INDEX IF NOT EXISTS idx\_provinces\_geonames\_id ON public.provinces(geonames\_id) WHERE geonames\_id IS NOT NULL; -- Index only if not null

CREATE INDEX IF NOT EXISTS idx\_provinces\_is\_active ON public.provinces(is\_active);

-- Trigger for updated\_at (ensure public.handle\_updated\_at() function exists)

CREATE TRIGGER trigger\_provinces\_set\_updated\_at

BEFORE UPDATE ON public.provinces

FOR EACH ROW

EXECUTE FUNCTION public.handle\_updated\_at();

-- Trigger for deleting related translations (ensure public.cleanup\_related\_translations() function exists)

CREATE TRIGGER trigger\_delete\_province\_translations

AFTER DELETE ON public.provinces

FOR EACH ROW EXECUTE FUNCTION public.cleanup\_related\_translations(); -- Uses OLD.id::TEXT and 'provinces'

-- RLS Policies

ALTER TABLE public.provinces ENABLE ROW LEVEL SECURITY;

CREATE POLICY "Allow admin full access on provinces"

ON public.provinces

FOR ALL

USING (public.is\_platform\_admin()) -- Assumes helper function

WITH CHECK (public.is\_platform\_admin());

CREATE POLICY "Allow authenticated users read access on provinces"

ON public.provinces

FOR SELECT

TO authenticated

USING (is\_active = true);

CREATE POLICY "Allow anonymous users read access on provinces"

ON public.provinces

FOR SELECT

TO anon

USING (is\_active = true);

```

4\. JSON Schema Mirror

JSON

```

{

"title": "province",

"description": "Core identifying information for administrative subdivisions (provinces, states). Names/descriptions are in 'translations' table. Version: 2.0",

"type": "object",

"properties": {

"id": { "type": "integer", "readOnly": true, "description": "Primary Key. Used as 'row\_foreign\_key' in 'translations'." },

"region\_id": { "type": "integer", "description": "FK to the regions table." },

"country\_code": { "type": "string", "description": "2-letter ISO 3166-1 alpha-2 country code. FK to countries table.", "pattern": "^[A-Z]{2}$" },

"code": { "type": ["string", "null"], "description": "Official abbreviation or code for the province (e.g., \"PG\"). Unique if provided.", "maxLength": 10 },

"wikidata\_id": { "type": ["string", "null"], "description": "Wikidata item ID. Unique if provided.", "pattern": "^Q[0-9]+$" },

"geonames\_id": { "type": ["integer", "null"], "description": "GeoNames ID. Unique if provided." },

"is\_active": { "type": "boolean", "default": true, "description": "Indicates if the province is active and usable." },

"created\_at": { "type": "string", "format": "date-time", "readOnly": true },

"updated\_at": { "type": "string", "format": "date-time", "readOnly": true },

"created\_by\_profile\_id": { "type": ["string", "null"], "format": "uuid", "description": "Profile ID of the user who created the record." },

"updated\_by\_profile\_id": { "type": ["string", "null"], "format": "uuid", "description": "Profile ID of the user who last updated the record." }

},

"required": [ "region\_id", "country\_code", "is\_active" ]

}

```

5\. Relationships & Integrity

- Primary Key: `id` (SERIAL).

- Foreign Keys:

- `region\_id` REFERENCES `public.regions(id) ON DELETE RESTRICT`.

- `country\_code` REFERENCES `public.countries(iso\_3166\_1\_alpha\_2) ON DELETE RESTRICT ON UPDATE CASCADE`.

- Audit FKs to `public.profiles(id) ON DELETE SET NULL`.

- Referenced By:

- `public.towns.province\_id` REFERENCES `public.provinces(id) ON DELETE SET NULL` (or RESTRICT).

- `public.translations.row\_foreign\_key` (conceptually, for `table\_identifier = 'provinces'`).

- Unique Constraints: `code` (if not null), `wikidata\_id` (if not null), `geonames\_id` (if not null).

- Orphaned Translations: Managed by `trigger\_delete\_province\_translations`.

6\. Multilingual Strategy

All display names and descriptions are stored in public.translations (table\_identifier = 'provinces'). The provinces table itself holds no direct user-facing text.

7\. Role-Based Workflow & RLS Notes

- Content Management: Core province records (IDs, codes, FKs, `is\_active`) managed by Administrators. Textual content via `public.translations` workflow.

- RLS Policies: Admins full access (via `public.is\_platform\_admin()`). Authenticated/Anonymous users have read access to `is\_active = true` provinces. `public.translations` RLS governs text access.

8\. ENUM vs Lookup Discussion

This table is a lookup/master table for administrative divisions. This revision aligns its translatable components with the central translations table and standard audit/lifecycle patterns.

9\. UI/UX Enablement

- UI uses IDs and codes for data relationships and linking.

- Translated `name` and `description` from `public.translations` are used for display.

- Provides context for towns and enables hierarchical geographical navigation.

10\. Key Considerations & Definitions

- Data Source & Stability: `code`, `wikidata\_id`, `geonames\_id` should be sourced from official/stable databases.

- `ON DELETE RESTRICT`: Used for `region\_id` and `country\_code` to maintain hierarchical integrity.

- Data Entry Workflow: Create province record, then add corresponding translations.

11\. Scalability & Future-Proofing

Robust structure aligned with i18n. Standard identifiers aid future data integration.

12\. Seed Data

Example seed data (illustrative - IDs are serial and will auto-generate):

- `region\_id`: (ID of 'Umbria' from `regions`), `country\_code`: 'IT', `code`: 'PG', `wikidata\_id`: 'Q3862', `geonames\_id`: 3171640, `is\_active`: true

- `region\_id`: (ID of 'Tuscany' from `regions`), `country\_code`: 'IT', `code`: 'AR', `wikidata\_id`: 'Q16120', `geonames\_id`: 3182001, `is\_active`: true

- Corresponding entries for 'name' and 'description' must be added to `public.translations`.

13\. Next-Action Checklist

- 🔴 Define Helper Function: Ensure `public.is\_platform\_admin()` is defined and secure.

- 🔴 Define `updated\_at` Trigger Function: Ensure standard `public.handle\_updated\_at()` is defined.

- 🔴 Verify/Adapt `cleanup\_related\_translations`: Confirm function works for `provinces`.

- 🟠 Deploy DDL: Apply `CREATE TABLE` and `COMMENT` DDL for `public.provinces`.

- 🟠 Populate Initial Data: Insert seed data for core provinces and their translations.

- 🟠 Implement Triggers: Create `trigger\_provinces\_set\_updated\_at` and `trigger\_delete\_province\_translations`.

- 🟠 Implement RLS Policies: Apply defined RLS policies.

- 🟢 Update `towns` Table FK: Ensure `towns.province\_id` correctly references this table.

- 🟢 Adapt Data Access Layer: Ensure application fetches names/descriptions from `public.translations`.

### 4\. Diff Summary

- Added Columns:

- `is\_active BOOLEAN NOT NULL DEFAULT true`

- `created\_by\_profile\_id UUID REFERENCES public.profiles(id) ON DELETE SET NULL`

- `updated\_by\_profile\_id UUID REFERENCES public.profiles(id) ON DELETE SET NULL`

- Modified Columns:

- None.

- Removed Columns:

- None (original spec `3.4 provinces.docx` was already aligned with removing `name\_en`, `description\_en`).

- Added DDL Elements:

- `COMMENT ON TABLE` and `COMMENT ON COLUMN` statements.

- Explicit RLS policies for admin, authenticated, and anonymous users, with admin using `public.is\_platform\_admin()` and `WITH CHECK`. Public read policies filter by `is\_active = true`.

- Index `idx\_provinces\_is\_active`.

- Modified DDL Elements:

- `updated\_at` trigger function reference standardized to `public.handle\_updated\_at()`.

- Indexes on `code`, `wikidata\_id`, `geonames\_id` are now conditional (`WHERE ... IS NOT NULL`).

- Added Documentation/Sections:

- "Seed Data" section added.

- Enhanced details in all specification sections.

- "Next-Action Checklist" now includes severity icons.

- JSON Schema:

- Added `is\_active`, `created\_by\_profile\_id`, `updated\_by\_profile\_id`.

- Updated main description to include version.

- `is\_active` added to `required` properties.