<https://gemini.google.com/u/1/app/2c4ea8fa457b0abd?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/fd47ede3d905a3f2>

<https://gemini.google.com/u/1/app/440838222ac514d7>

Production-Ready Specification: public.languages\_master Table

Version: 2.1 (Checklist V2-05-17-B Applied)

Date: 2025-05-17

1. Purpose & Primary Use-Cases

Mission Statement: To define and manage all languages supported or planned for the pilgrimage platform, providing canonical language codes, display names, active status, identifying the primary reference language for content, and an optional UI icon identifier. Audit fields track creation and updates.

Key User-Story Touchpoints:

• Pilgrim (Anna): This table populates the language switcher UI, allowing her to select her `preferred\_language\_code`.

• Platform Administrator: Manages language entries, including active status, primary language flag, UI icons, and changes are auditable.

• System/Developer: Validates `profiles.preferred\_language\_code` and `translations.language\_code` against this table.

2. Schema

| column | data\_type | constraints | description |

| :---------------------------- | :------------------------ | :------------------------------------------------------------------------------------------------------------------ | :--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------- |

| language\_code | text | Primary Key, Not Null, CHECK (`language\_code` ~ '^[a-z]{2}(-[A-Z]{2})?$' AND char\_length(`language\_code`) >= 2 AND char\_length(`language\_code`) <= 5) | 🟢 ISO 639-1 (2-letter, e.g., 'en', 'it') or IETF language tag (e.g., 'en-GB', 'pt-BR'). Unique. Format and length enforced. |

| display\_name\_native | text | Not Null | The name of the language in its own native script and language (e.g., "Italiano", "Deutsch"). |

| display\_name\_en | text | Not Null | The common name of the language in English (e.g., "Italian", "German"). Used for consistent admin/developer reference. |

| icon\_identifier | text | Nullable | Optional identifier for a UI icon representing the language (e.g., a flag icon class name like 'flag-icon-it' or an SVG identifier). |

| is\_active\_for\_platform | boolean | Not Null, Default false | If true, this language is actively supported and available for users to select and for displaying translated content. |

| is\_primary\_content\_language | boolean | Not Null, Default false, Unique Partial Index `uq\_one\_primary\_content\_language` WHERE (`is\_primary\_content\_language` = TRUE) | 🟠 Flags the primary reference language (e.g., English). Content in this language is stored in main table columns. Only one language should have this true. |

| display\_order\_ui | integer | Nullable, Unique (`uq\_languages\_master\_display\_order\_ui`) | Optional order for displaying languages in a language switcher UI. Unique if set. |

| created\_at | timestamp with time zone | Not Null, Default `now()` | Timestamp of when this language record was created. |

| updated\_at | timestamp with time zone | Not Null, Default `now()` | Timestamp of when this language record was last updated (auto-updated by trigger). |

| created\_by\_profile\_id | uuid | Nullable, Foreign Key to `public.profiles(id)` ON DELETE SET NULL | Profile ID of the user who initially created this language entry. |

| updated\_by\_profile\_id | uuid | Nullable, Foreign Key to `public.profiles(id)` ON DELETE SET NULL | Profile ID of the user who last updated this language entry. |

3. PostgreSQL DDL

-- Table Definition

CREATE TABLE public.languages\_master (

language\_code text NOT NULL PRIMARY KEY,

display\_name\_native text NOT NULL,

display\_name\_en text NOT NULL,

icon\_identifier text NULL,

is\_active\_for\_platform boolean NOT NULL DEFAULT false,

is\_primary\_content\_language boolean NOT NULL DEFAULT false,

display\_order\_ui integer NULL,

created\_at timestamp with time zone NOT NULL DEFAULT now(),

updated\_at timestamp with time zone NOT NULL DEFAULT now(),

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

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

CONSTRAINT check\_language\_code\_format CHECK (language\_code ~ '^[a-z]{2}(-[A-Z]{2})?$' AND char\_length(language\_code) >= 2 AND char\_length(language\_code) <= 5),

CONSTRAINT uq\_languages\_master\_display\_order\_ui UNIQUE (display\_order\_ui)

);

-- Unique Partial Index to ensure only one language is the primary content language

CREATE UNIQUE INDEX uq\_one\_primary\_content\_language

ON public.languages\_master (is\_primary\_content\_language)

WHERE (is\_primary\_content\_language = TRUE);

-- Index for UI ordering and active status

CREATE INDEX idx\_languages\_master\_active\_order ON public.languages\_master (is\_active\_for\_platform, display\_order\_ui);

-- Indexes for Audit FKs

CREATE INDEX idx\_languages\_master\_created\_by\_profile\_id ON public.languages\_master (created\_by\_profile\_id) WHERE created\_by\_profile\_id IS NOT NULL;

CREATE INDEX idx\_languages\_master\_updated\_by\_profile\_id ON public.languages\_master (updated\_by\_profile\_id) WHERE updated\_by\_profile\_id IS NOT NULL;

-- Comments

COMMENT ON TABLE public.languages\_master IS 'Defines all languages supported or planned for the platform, including display names, active status, the primary reference language, and optional UI icon identifiers. Authoritative list for translations. Version 2.1.';

COMMENT ON COLUMN public.languages\_master.language\_code IS 'PK. ISO 639-1 (e.g., en, it) or IETF language tag (e.g., en-GB, pt-BR). Max length 5.';

COMMENT ON COLUMN public.languages\_master.display\_name\_native IS 'The name of the language in its own native script and language (e.g., "Italiano", "Deutsch").';

COMMENT ON COLUMN public.languages\_master.display\_name\_en IS 'The common name of the language in English (e.g., "Italian", "German"). For admin/developer reference.';

COMMENT ON COLUMN public.languages\_master.icon\_identifier IS 'Optional identifier for a UI icon representing the language (e.g., a flag icon class name or an SVG identifier).';

COMMENT ON COLUMN public.languages\_master.is\_active\_for\_platform IS 'If true, language is actively supported and available for user selection and content display.';

COMMENT ON COLUMN public.languages\_master.is\_primary\_content\_language IS 'Flags the primary reference language. Content in this language is stored in main table columns. Only one can be true (enforced by partial unique index).';

COMMENT ON COLUMN public.languages\_master.display\_order\_ui IS 'Optional unique order for displaying languages in UI selectors. Nullable, but unique if provided.';

COMMENT ON COLUMN public.languages\_master.created\_at IS 'Timestamp of when this language record was created.';

COMMENT ON COLUMN public.languages\_master.updated\_at IS 'Timestamp of when this language record was last updated (auto-updated by trigger).';

COMMENT ON COLUMN public.languages\_master.created\_by\_profile\_id IS 'Profile ID of the user who initially created this language entry. FK to profiles.id. ON DELETE SET NULL.';

COMMENT ON COLUMN public.languages\_master.updated\_by\_profile\_id IS 'Profile ID of the user who last updated this language entry. FK to profiles.id. ON DELETE SET NULL.';

4. Triggers/Functions

-- Trigger for updated\_at timestamp

CREATE TRIGGER handle\_languages\_master\_updated\_at

BEFORE UPDATE ON public.languages\_master

FOR EACH ROW

EXECUTE FUNCTION extensions.moddatetime('updated\_at'); -- Using Supabase standard

-- Note: The `public.handle\_updated\_at()` mentioned in Checklist II.5 should also set `updated\_by\_profile\_id = auth.uid()` if a unified trigger is used.

-- If using `extensions.moddatetime`, `updated\_by\_profile\_id` needs to be set by application logic or a separate, more specific trigger if admins are editing directly via SQL or an interface that doesn't automatically pass the user ID.

-- For master tables usually updated by migrations or superadmin, this might be less critical or handled during those specific operations.

5. JSON Schema Mirror

{

"title": "language\_master",

"description": "Defines all languages supported or planned for the platform, including their display names, active status, the designation of a primary reference language, optional UI icon identifiers, and audit fields. Version 2.1.",

"type": "object",

"properties": {

"language\_code": {

"type": "string",

"description": "Primary Key. ISO 639-1 code or IETF tag (e.g., 'en', 'it', 'en-US'). Unique and follows pattern: 2-letter base, optionally followed by hyphen and 2-letter region. Min length 2, Max length 5.",

"pattern": "^[a-z]{2}(-[A-Z]{2})?$", "minLength": 2, "maxLength": 5

},

"display\_name\_native": { "type": "string", "description": "Name of the language in its own native script and language." },

"display\_name\_en": { "type": "string", "description": "Common name of the language in English. Used for consistent admin/developer reference." },

"icon\_identifier": { "type": ["string", "null"], "description": "Optional identifier for a UI icon representing the language." },

"is\_active\_for\_platform": { "type": "boolean", "default": false, "description": "If true, this language is actively supported for user selection and content display." },

"is\_primary\_content\_language": { "type": "boolean", "default": false, "description": "Flags the primary reference language. Only one language should be true." },

"display\_order\_ui": { "type": ["integer", "null"], "description": "Optional order for displaying languages in UI. Must be unique if set." },

"created\_at": { "type": "string", "format": "date-time", "description": "Timestamp of record creation.", "readOnly": true },

"updated\_at": { "type": "string", "format": "date-time", "description": "Timestamp of last record update.", "readOnly": true },

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

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

},

"required": [ "language\_code", "display\_name\_native", "display\_name\_en", "is\_active\_for\_platform", "is\_primary\_content\_language" ],

"primary\_key": ["language\_code"],

"unique\_constraints": [

{"columns": ["display\_order\_ui"], "name": "uq\_languages\_master\_display\_order\_ui", "allow\_null\_results": true},

{"columns": ["is\_primary\_content\_language"], "name": "uq\_one\_primary\_content\_language", "where\_clause": "is\_primary\_content\_language = TRUE"}

],

"foreign\_keys": [

{"columns": ["created\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"},

{"columns": ["updated\_by\_profile\_id"], "references\_table": "public.profiles", "references\_columns": ["id"], "on\_delete": "SET NULL"}

]

}

6. Relationships & Integrity

Primary Key: `language\_code` (text).

Foreign Keys:

• `created\_by\_profile\_id` references `public.profiles(id)`: ON DELETE SET NULL.

• `updated\_by\_profile\_id` references `public.profiles(id)`: ON DELETE SET NULL.

Incoming Foreign Keys (from other tables):

• `profiles.preferred\_language\_code` references `languages\_master(language\_code)`: ON UPDATE CASCADE ON DELETE RESTRICT.

• `translations.language\_code` references `languages\_master(language\_code)`: ON UPDATE CASCADE ON DELETE RESTRICT.

• 🟢 `ON DELETE RESTRICT` on incoming FKs is critical.

Junction/Lookup Tables: This table \*is\* a lookup table.

Mermaid ER Snippet:

erDiagram

profiles { uuid id PK }

languages\_master {

text language\_code PK

text display\_name\_native

text display\_name\_en

text icon\_identifier

boolean is\_active\_for\_platform

boolean is\_primary\_content\_language "Partial UK (TRUE)"

integer display\_order\_ui UK

uuid created\_by\_profile\_id FK

uuid updated\_by\_profile\_id FK

timestamp created\_at

timestamp updated\_at

}

translations { text language\_code FK }

profiles }o--|| languages\_master : "prefers language"

translations }o--|| languages\_master : "is in language"

languages\_master }o--o| profiles : "created\_by (admin)"

languages\_master }o--o| profiles : "updated\_by (admin)"

7. Multilingual Strategy

🟢 This table is a cornerstone of the multilingual strategy. Its flags and codes drive UI and content retrieval.

8. Role-Based Workflow & RLS Notes

Key Fields for Roles/Workflows: `is\_active\_for\_platform`, `is\_primary\_content\_language` (Managed by Admins).

Recommended Row-Level-Security (RLS) Policies:

• 🟢 Policy 1: Allow public read access to all language definitions.

```sql

CREATE POLICY "select\_all\_languages" ON public.languages\_master FOR SELECT USING (true);

```

• 🟢 Policy 2: Allow admins to manage (CRUD) language definitions.

```sql

CREATE POLICY "admin\_manage\_all\_languages" ON public.languages\_master FOR ALL

USING (public.has\_role('admin\_platform') OR public.has\_role('admin\_super')) -- Example roles

WITH CHECK (public.has\_role('admin\_platform') OR public.has\_role('admin\_super'));

```

🟠 Caution: `ON DELETE RESTRICT` on incoming FKs prevents deletion if referenced. `is\_active\_for\_platform = false` is preferred for retiring.

9. ENUM vs Lookup Discussion

🟢 This table \*is\* a lookup table. Appropriate for its purpose.

10. UI/UX Enablement

Columns powering UI: `language\_code`, `display\_name\_native`, `icon\_identifier`, `is\_active\_for\_platform`, `display\_order\_ui`.

Indexed Fields for UX Performance: PK, `uq\_languages\_master\_display\_order\_ui`, `idx\_languages\_master\_active\_order`.

11. Auditing & Lifecycle Management

Audit Columns: `created\_at`, `updated\_at` (auto-managed by trigger). `created\_by\_profile\_id`, `updated\_by\_profile\_id` added for admin change tracking.

Lifecycle: Managed by `is\_active\_for\_platform`.

12. Scalability & Future-Proofing

Scalability: Table will remain small and performant.

Future-Proofing: Structure is robust.

13. Seed Data (V1)

| language\_code | display\_name\_native | display\_name\_en | icon\_identifier | is\_active\_for\_platform | is\_primary\_content\_language | display\_order\_ui | created\_by\_profile\_id | updated\_by\_profile\_id |

| :------------ | :------------------ | :-------------- | :---------------- | :--------------------- | :-------------------------- | :--------------- | :-------------------- | :-------------------- |

| 'en' | 'English' | 'English' | 'flag-icon-gb' | true | true | 1 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'it' | 'Italiano' | 'Italian' | 'flag-icon-it' | true | false | 2 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'de' | 'Deutsch' | 'German' | 'flag-icon-de' | false | false | 3 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'nl' | 'Nederlands' | 'Dutch' | 'flag-icon-nl' | false | false | 4 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'es' | 'Español' | 'Spanish' | 'flag-icon-es' | false | false | 5 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

| 'fr' | 'Français' | 'French' | 'flag-icon-fr' | false | false | 6 | `[ADMIN\_UUID]` | `[ADMIN\_UUID]` |

\*(Note: `[ADMIN\_UUID]` is a placeholder for the actual UUID of an admin/system user profile responsible for initial data seeding.)\*

14. Next-Action Checklist

• 🔴 Create Table: Execute the `CREATE TABLE public.languages\_master (...)` DDL with new audit columns.

• 🔴 Create Unique Partial Index `uq\_one\_primary\_content\_language`.

• 🟢 Create Additional Indexes `idx\_languages\_master\_active\_order`, and indexes for audit FKs.

• 🔴 Implement `updated\_at` Trigger using `extensions.moddatetime`.

• 🔴 Pre-populate Seed Data: Insert initial V1 languages as defined in Section 13.

• 🟢 Define `icon\_identifier` convention and source for assets.

• 🟠 Define how `created\_by\_profile\_id` and `updated\_by\_profile\_id` will be populated (e.g., application layer during admin operations, or manually during migrations for initial seed).