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9.11 Consolidated In-App Notifications

Description:

As a platform user,

I want to receive and view all relevant notifications from across CORDAP in a consolidated in-app feed

So that I can stay informed about important updates, required actions and relevant activity in a timely and prominent way

Acceptance Criteria:

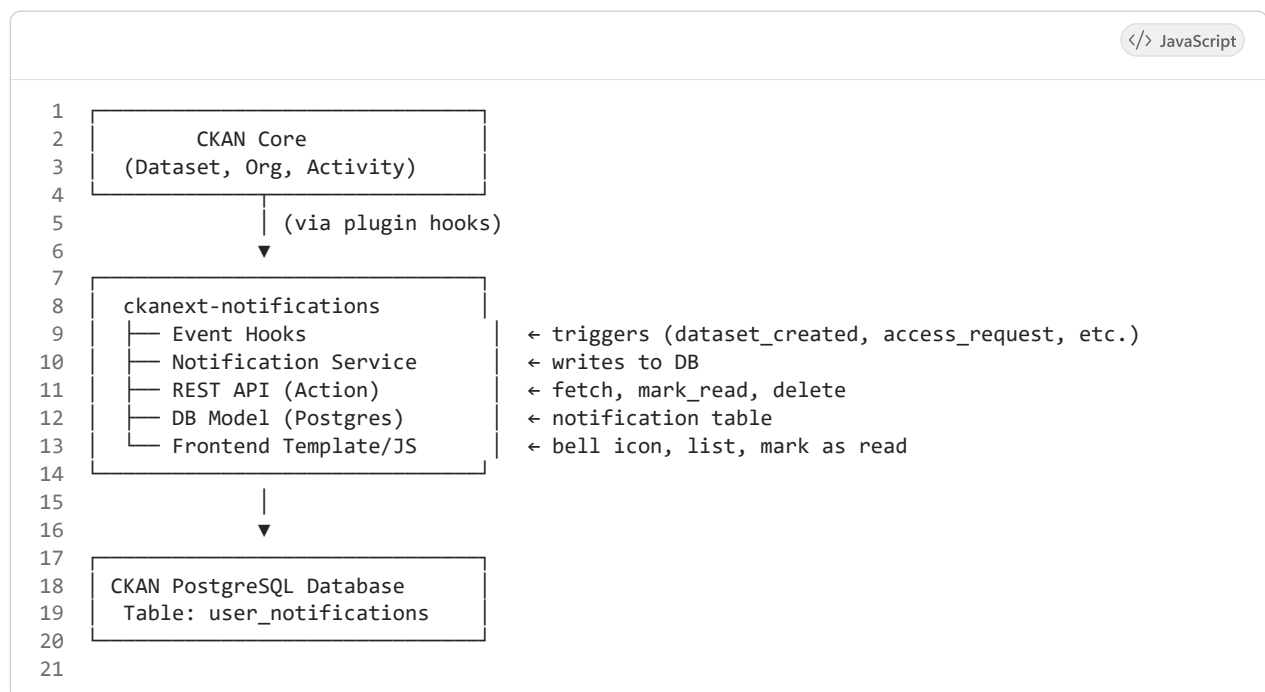
1. The platform shall provide a consolidated in-app notification centre or feed where users can view all relevant alerts and updates.
2. The notification system shall collate notifications from CORDAP, including tag definitions, access requests, and active error messages [confirm list].
3. The system shall also generate notifications for other key events, e.g. when a new dataset is uploaded to a research area the user owns or follows, and updates related to student class projects. [Specific list of notifications TBC before development]
4. Users shall have the option to receive these notifications via email, in addition to the in-app feed.
5. Notifications should be clear, concise, and provide sufficient context for the user to understand the event.

1. Extension Overview

Name: `ckanext-notifications`

Purpose: Provide an in-app notification feed for CKAN users to view updates related to datasets, organizations, and system events.

2. High-Level Architecture



3. Notification Types (Current Implementation)

	☰ Heading	☰ Text	☰ Location	☰ Redirect To	☰ Recipients
1	Define New Tags (Popup)	The following tags are missing definitions. Please provide the required information	Dataset Page	Dataset Details screen	User who created Tag
2	New tag added: Definition required	You have added a new tag, but it does not have a definition in the system yet. Please click here to add one - definitions help others understand and apply tags consistently	Dataset Page	Dataset Details screen	User who created Tag
3	Access Request for Cordap Dataset	User [username] has requested access to your Cordap dataset [dataset name]	Email and User Requests Tab	User Requests Tab	Dataset Owner or Dataset Admin
4	Access Request Approved	Your Access request has been approved	Email	Dataset Details screen	User who requested access
5	AI Tags	AI tags are still being processed. Please wait while the process completes.	AI Tags Tab	AI Tags Tab in Dataset	User who uploaded Resource/s

6	AI Tag suggestions Available	New AI Suggested Tags for [dataset name] are ready for review	New	AI Tags Tab in Dataset	User who uploaded Resource/s
7	New Resources Added	New resource/s are added to a dataset you own (Admin/Editor)	New	Dataset Details screen	Dataset Owner or Admin/Editor
8	New Resources Added	New resource/s are added to a dataset you are following	New	Dataset Details screen	Users who follow a Dataset
9	New Dataset added	New Dataset was added to a Research Area you own (Admin/Editor)	New	Dataset Details screen	Dataset Owner or Admin/Editor
10	New Dataset added	New Dataset/s are added to a dataset you are following	New	Dataset Details screen	Users who follow a Dataset

Each notification type can be configured for **in-app only**, **email only**, depending on user preferences.

4. System Architecture

Components

1. Notification Service (Core)

- Handles creation, persistence, and retrieval of notifications.
- Responsible for linking notifications to users and determining delivery channels (in-app, email).

2. Database Model (PostgreSQL)

- Table: `user_notifications`
 - `id`: Primary key
 - `user_id`: Foreign key to CKAN user
 - `type`: Notification type (e.g., `tag_definition`, `access_request`)
 - `message`: Human-readable message

- `resource_id`: Optional FK for contextual linking (dataset/resource)
- `is_read`: Boolean
- `delivery_type`: ENUM ('inapp', 'email', 'both')
- `created_at`: Timestamp
- `metadata`: JSONB for dynamic data (dataset name, username, etc.)

3. Plugin Hooks

- Extends CKAN's logic layer (`IAction`, `IAuthFunctions`, `IActions`) to trigger notifications upon certain CKAN actions.

4. UI Layer (Jinja Templates + JS)

- Adds a **notification bell icon** in the CKAN header.
- Clicking the bell opens an **in-app notifications screen** showing latest read and unread notifications.
- Clicking on notifications should redirect it to appropriate screen.

5. Email Notification Subsystem

- Uses CKAN's existing `email_send` helper for outbound messages.
- Users can enable/disable email delivery via profile settings (`ckanext-notifications` preferences).

5. Notification Flow

1. Event occurs (e.g., new tag created, access approved).
2. Plugin hook captures the event and calls `create_notification()`.
3. Notification is saved to DB and optionally sent via email (if opted-in).
4. User sees the in-app alert instantly via polling.
5. User can mark as read or delete notifications.

6. Database Schema (Example)

```

1 CREATE TABLE user_notifications (
2     id SERIAL PRIMARY KEY,
3     user_id TEXT NOT NULL REFERENCES user(name) ON DELETE CASCADE,
4     type TEXT NOT NULL,
5     message TEXT NOT NULL,
6     resource_id TEXT NULL,
7     delivery_type TEXT CHECK (delivery_type IN ('inapp','email','both')) DEFAULT 'inapp',
8     is_read BOOLEAN DEFAULT FALSE,
9     metadata JSONB,
10    created_at TIMESTAMP DEFAULT NOW()
11 );
12

```

7. Configuration Options

```

1 ckanext.notifications.enabled = true
2 ckanext.notifications.email.enabled = true
3 ckanext.notifications.email.default_opt_in = false
4 ckanext.notifications.feed.limit = 20
5

```

8. Security & Access Control

- Only the **logged-in user** can see their notifications.
- Avoid exposing other users' info or dataset metadata via notification messages.

Implementation Estimate (High-Level)

	☰ Task	☰ Hours
1	DB Model + Migration	8
2	Notification Service Logic	8
3	Plugin Hooks (Dataset events)	6
4	Plugin Hooks (New Tags)	4
5	Plugin Hooks (Access Request)	4
6	Plugin Hooks (Resource events)	4
7	Plugin Hooks (AI Tags)	4
8	API Endpoints	4
9	Frontend Integration	16
10	Notifications screen design and implementation	12
11	Email integration for all notifications	16
12	User screen change for optin for emails	12
13	Testing & Documentation	6
14	Deployment	2
15	Total (Initial Release)	~106 hrs