MapStories

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Github repository: https://github.com/lisikava/mapstories

Project description:
MapStories is an application for viewing and sharing information with geographical location. It allows users to add pins to the map that represent personal memories, reported incidents, community events, lost/found items, and much more.

Technology stack:
- Database: PostgreSQL
- Backend: Java + Javalin
- Frontend: HTML + CSS + Javascript

User Stories & Acceptance Criteria

Top priority

1. As a user, I want to write interesting stories about places in my city or elsewhere to share them with others.
    a. Given that I am on the main page, when I click on the map, a pin creation form appears.
    b. The pin creation form contains a field for pin category selection followed by a list of pin tags presented as key-value pairs in the form "tag name - tag description".
    c. When a category is selected, recommended/expected tags are included in the list.
    d. Given that I have initiated pin creation, when I fill in and submit the form, the pin is added to the map.
    e. Pins have different appearances on the map depending on their category – most common categories (incident, lost item, found

item) have pins with distinct colors and/or icons, the others have generic story-type pins.

2. As a user, I want to report incidents like potholes, fallen trees, abandoned vehicles, gas leaks, and others so that authorities could address them promptly.
    a. For pins of the incident category, the pin creation form suggests description tags.
    b. When a non-specific category is specified, it is suggested to indicate a more specific category.

3. As a user, I want to browse events in my neighbourhood so that I could find an interesting place to make new friends and spend an evening in a pleasant setting.
    a. Given that I am on the main page, I see an interactive Leaflet map with various pins created by other users.
    b. I can select to view all pins with their tags and location.
    c. I can click a pin to display all of its information in a pop-up view.

4. As a user, I want to create story groups, so that they could be organized neatly and tracked easily.
    a. Given that I have initiated pin creation and the pin creation form has been shown, I am able to assign arbitrary tags in the form of key-value pairs to pins by clicking an appropriate button at the bottom of the list of present tags.

5. As a user, I want to be able to subscribe to the stories based on my personal set of criteria, so that I could receive updates whenever new ones appear.
    a. Given that I have defined the search pattern (see criterion 7a), when I subscribe to changes by email, the server pushes updates matching the search pattern to the indicated channel in the form of digests.
    b. Given that I have subscribed to updates, an email with confirmation is sent to the indicated address with a link; when I follow the link, my subscription is confirmed.
    c. Notification system workflow is cron-based with daily cycles of checking new stories against the user-created filters in subscriptions.

6. As a user, I want to be able to browse stories based on their content and metadata, so that I could find those corresponding to my picky liking.
    a. Given that I have pressed the advanced option in the search bar, I am greeted with the story-searching form, where I can input the

category and fill the list of key-value tags to define a pattern to match stories.

  b. Given that I have filled in at least one field, when I press Search, the desired stories become highlighted on the map, otherwise no filter is applied.

7. As a user, I want to be able to search through stories based on their categories, so that I could look at pins that fit my interests.

  a. Given that I have pressed the search bar, I am able to enter the category I wish to search by.

  b. Given that I pressed the search button, only pins that fit my selected category are displayed on the map.

  c. If no category is selected, all pins in the desired area are displayed.

8. As an event organizer, I want to notify everybody about the events to attract people.

  a. Given that I have initiated pin creation procedure and, therefore, I have a pin creation form open, and I have indicated that the pin is of event category, the form content optional suggested tags for contact information of organizers, references to resources about the event, and the planned date of the event.

9. As a representative of municipal authorities, I want to stay informed of the incident reports so that I could arrange issue resolution.

  a. As a representative of municipal authorities, I am able to observe the update stream of the pin dataset satisfying a certain search pattern (see story must be 6) in batches by the means of email.

10. As a user subscribed to the updates corresponding to my search pattern, I wish to unsubscribe from said pattern whenever I wish.

  a. Given that I have subscribed to MapStories, I receive an email when there are updates to the stories matching my search pattern.

  b. Given that I have received an email from MapStories with updates, I can follow the link at the bottom of it where I can unsubscribe from the pattern.

11. As a user, I want to be able to edit or remove stories, so that I could introduce corrections and remove irrelevant pins.

  a. By clicking on the pin or selecting it from the list of stories, I can see its pop-up view with all data and an Edit button.

  b. The Edit button opens a form similar to the pin creation form. I edit the information and press Submit to persist the changes or Discard to cancel editing.

    c. I can as well press Delete Pin to remove the story, it requires additional confirmation in a pop-up.

Should be

1. As a person who has lost an item, I want to report it, so that others could find it.
   a. The user must identify the story category as a lost item, and provide their valid contact information.
   b. Pin creation form contains suggested fields for contact information of the person who has lost an item, textual description of an item, textual description of a supposed place and circumstances where the item might have been lost.
   c. The provided email address must be syntactically valid.
   d. This story requires the user's email confirmation to be created. See 3.
2. As a person who has found an item, I want to report it, so that I could return it to the owner.
   a. Given that I have initiated pin creation procedure and, therefore, I have a pin creation form open, and I have indicated that the pin is of found item category, the form content optional suggested tags for the contact information of the person who is responsible for returning the item, and, presumably, currently possesses the item, textual description of distinctive features of the item to help with identification and comparison against lost item reports, textual description of the exact place where the item has been found.
3. As a person who has found an item, I want to receive a notification when the loss of a similar item is reported, so that I could contact the person looking for the item, possibly returning it to the rightful owner.
   a. The story will not be created until the user confirms their email address as in Must be: 6b. By confirming, the user subscribes to the updates on the lost/found issue.
   b. Updates on lost/found are event-based and happen within a reasonable time considered immediate.
4. [Does not make sense]
   As a person who has lost an item, I want to receive a notification by email when a similar item is found, so that I could contact the person who has found the item to confirm it's mine and arrange a return.
   a. Given that I have previously submitted a lost item report and indicated my email as contact information, when a potentially matching found item report is found, an email is sent to the said

address referencing me to the said report. The email should also contain contact information of the person who has found the item indicated in the found item report.

5. As a person who has lost an item, I want to update my report in case I provided incorrect information or recalled something.
6. As a person who has lost an item and received it back, I want to mark my report as resolved, so it can be removed soon.
   a. Given that two reports of categories 'lost item' and 'found item' are matched according to their item descriptions, a notification is sent to the email supplied in the description of the found item.
   b. Upon receiving the email concerning a possible lost item match, the holder of the found item is prompted to verify the description and confirm the match. Otherwise, the assumption is proved false, and the system will look for different counterparts of the items.
   c. Given that the item match is confirmed by the holder of the item, a notification is sent to the address supplied for the 'lost item' story, informing of the item holder.
   d. This email is composed immediately after the confirmation and contains the information from the 'found item' story, including the finder's email address. Additionally, it is supplied with a link to resolution form, which opens the 'lost item' story with a 'Resolve' button.
   e. Upon click of the 'Resolve' button, the story and its matching counterpart are both marked as resolved and disappear from the default view of the map. These stories remain archived and are accessible through the 'resolved' tag in the filter.
   f. All communication regarding item return is handled by the two parties independently of the system.
7. As a person who has found an item and returned it to the owner or brought it to the police station, I want to mark my report accordingly, so that it would contain relevant information.
   a. Given that I have previously submitted a found item report, I am able to erase the pin from the map when it is no longer relevant, following the procedure described in the story must be 11.
8. As a user, I want to observe real-time updates when other users add or remove pins, to be able to react immediately.
   a. Given that I am on the main page, when an event (such as the creation or deletion of a pin) occurs, the server pushes it via the

EventSource protocol to the application in my browser, and changes are reflected on the map.

Could be

1. As a police officer, I want to receive reports of stolen and found items, to support investigation.
   a. As a police officer, I am able to contemplate the torrent of modification of the contents of the pin dataset of the application satisfying a certain search pattern corresponding to reports of lost and found items in a given spatial extent corresponding to an administrative boundary of a district or an entire city (see story must be 6) in batches by the means of emails sent to an address indicated in a corresponding form (see story must be 6).
2. As a police officer, I want to get estimates of an average number of items lost per district to estimate theft rates.
   a. By clicking on a name of a locality on the map, it can be selected as a polygon and a panel with locality statistics is opened. This limits the displayed stories to those which have locations within the given territory.
   b. The panel has a graph showing the number of lost items per month over the last year.
3. As a person who has found an item, I want to receive an email reminder to hand the item to the police when it has not been reported as lost for a long period of time, so that authorities could handle it accordingly.
   a. Given that I have previously reported a found item and two weeks have passed and the report has not been resolved, I receive an email to the address indicated in the report with a suggestion to hand the item to the police.
4. As a person who has lost an item and received it from the finder, I want to be able to like the finder or leave a dislike if it was a scam.
   a. Given that I received the lost item and resolved the report on MapStories, I have the ability to leave a like or dislike, as well as the ability to write a short comment, for the person who found the item.
5. As a user, I want to report suspicious reports. This report may help to improve the user's experience.
   a. Given that I see a suspicious or potentially dangerous reported item, and press on the "report" button on the pin, a report form appears in which I may choose the reason for the report (Suspicious item, dangerous item, illegal item, irrelevant item,

Other) and an optional short description. If the report is reviewed and confirmed as suspicious or dangerous, it may be reported to the authorities.

6. As a user of MapStories, I want other users to be able to see my rating so they can trust me.
   a. Given that I have posted a lost/found report, other users can see my rating when they click on the report's details to confirm that I am a legitimate user.

7. As a contributing user, I want to earn badges that indicate the number of returned items, so as to make the most of my competitive nature.
   a. Additionally to the rating from 6a, users can also see any badges that I have collected.

8. As a user, I want the reports of events and incidents to be relevant with respect to time, so that I do not get confused by old and inaccurate information.
   a. Pins of the event category with date specified are displayed as past events after that date.
   b. Pins of past events have a distinct colour.
   c. Pins of past events are hidden by default.