Lab 1 – Pest Patrol Product Description

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April 11, 2022

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1 Introduction

Pest encounters in communities are a common occurrence, but due to the isolated experiences and fragmented means of reporting, communities are left unaware and lack the proper means to share information efficiently. The lack of means for communities to communicate leaves everyone in the dark about potential encounters with pests. With a lack of communication/information can lead to unnecessary encounters with pests which could lead to personal injury or property damage. Most unnecessary encounters with pests can be avoided with real-time awareness to the presence and location of the pests.

Pest Patrol is an application designed to protect communities from pests by making it possible to proactively respond to their presence. The application will accomplish this in multiple ways such as keeping individuals informed of all pest encounters in their area. Preventing pest encounters by alerting individuals to their presence based on reports from other users. Along with enabling communities to track outbreaks with customizable heat mapping capabilities. The constant aggregation of knowledge gained form previous encounters to assist users with future occurrences.

2 Pest Patrol Product Description

Pest Patrol is a cross-platform web application designed to keep people in the know about potential pests in their community. The Pest Patrol web application has multiple features to keep the community knowledgeable about potential threats around them. This is accomplished by having a streamlined interface for reporting and learning

about pest encounters in a community, enabling users to tie reported incidents to their exact location, provide a means for users to communicate with one another on reported incidents and directly aggregate reported incidents and related discussion threads.

2.1 Key Product Features

Pest Patrols main feature is an incident map that displays reported incidents based on the user's location data. The incidents displayed are customizable based on user settings such as the ability to change the geographical area of incidents around them to display more or less information. The users are also able to sort incidents by the time/age of the incident allowing the users to sift out any outdated reports. The user is also able to sort out what types of pests they want to see in the area around them along with sorting out reports from other users.

Users may want to get alerts when a new pest has been spotted. Pest Patrol allows for users the receive mobile alerts about recent pest incidents/encounters within their vicinity. Not every user may want to be notified every time a new pest incident/encounter occurs. The user is able to customize which alerts they want to receive from their user settings.

The main goal of Pest Patrol is to keep the community informed. Pest Patrol manages to do so not only by its incident map but also by direct communication of users. This is done by either direct messaging or incident threads. The app gives users to directly communicate with one another privately, while incident threads are open for anyone to read and add on to. The accessibility of these threads ensure that no one is left out of the discussion of potential pest encounters.

2.2 Major Components

Users will be able to access Pest Patrol via the web whether it be on a desktop computer or a mobile device. The hardware system will require the devices be able to connect to the internet.

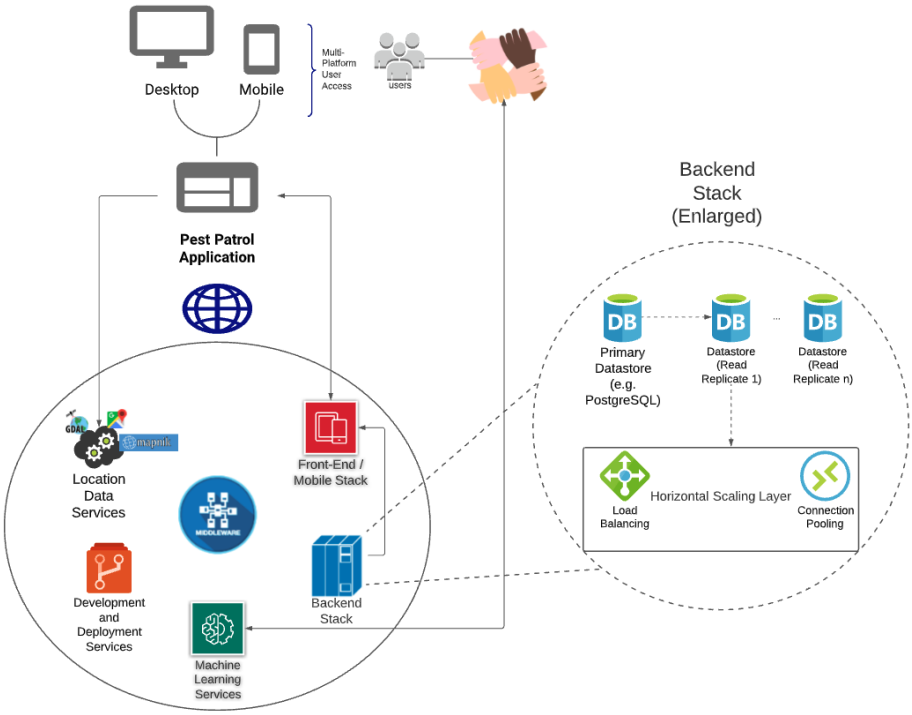

Figure1. Pest Patrol major Functional Component Diagram

Figure 1 represents how the Pest Patrol web application is structured. The users gain access to Pest Patrol website to get access to the desired pest information. The user would first either have to create an account or log into an already existing account to be able to gain access to the information. Once logged in users will gain access to the dashboard that provides access to all the other features/modules of the web application. From their the user is able to switch between three different viewing modes, incident map, discussion, and a hybrid of the both. From the incident map the user is able to view any of the spotting's/incidents in their

predefined area around them. The discussion view lists threads related to the reported incidents where users are able to seek help from the community and/or offer guidance/assistance. The hybrid mode displays the incident map along with the discussion threads and an expanded view of the currently selected discussion thread simultaneously.

The front end for pest patrol is going to be coded in JavaScript (Angular.js / TypeScript). The middleware is going to be handled by Node.js. While the backend stack is handled by three databases, PostgreSQL for the transactional data, Cloud Storage for the Blob Data, and Big Query for the Date Ware.

3 Identification of Case Study

Pest Patrol is developed to target anyone with concern of pests around them whether it be community members, hikers/campers, outdoor businesses, or cities. Community members benefit from Pest Patrol by being able report/view alerts concerning pests around the neighborhood. While hikers/campers would be able to view the map of their destination for pest sightings, and determine what they would need to potential encounter, such as bringing bear bags, mosquito nets or any other item to brave the outdoors. Outdoor businesses would be able to check for any sightings of hazardous pests in the working area. Cities could create plans to address broad pest related problems in communities. In general Pest Patrol is an application that will allow individuals to report, monitor, and communicate the overall pest activity in their community as well as allow users to coordinate a community-based solution the pest problems.

4 Product Prototype Description

4.1 Prototype Architecture (Hardware/Software)

4.2 Prototype Features and Capabilities

4.3 Prototype Development Challenges

5 Glossary

Bot Moderation: The automatic screening of user content to ensure proper user behavior.

Community: The people with common interests living in a particular area broadly the area itself.

Community Member: A member of a community, see Community definition.

Geo-tagging: The process of appending geographic coordinates based on the location of a mobile device.

Geo-targeting: Method of determining the geolocation of an application user and delivering different content to that visitor based on their location.

Incident: An occurrence or sighting of a pest reported by a user.

Pest: Any animal or plant harmful to humans or human concerns.

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