Team Name : Tech_Pirates
Company name: Govt. of Goa
Team Leader Name: Pavan Ghate

Category: Software
Problem code:DR112
College code:1-35162689

SOLUTION / PROTOTYPE

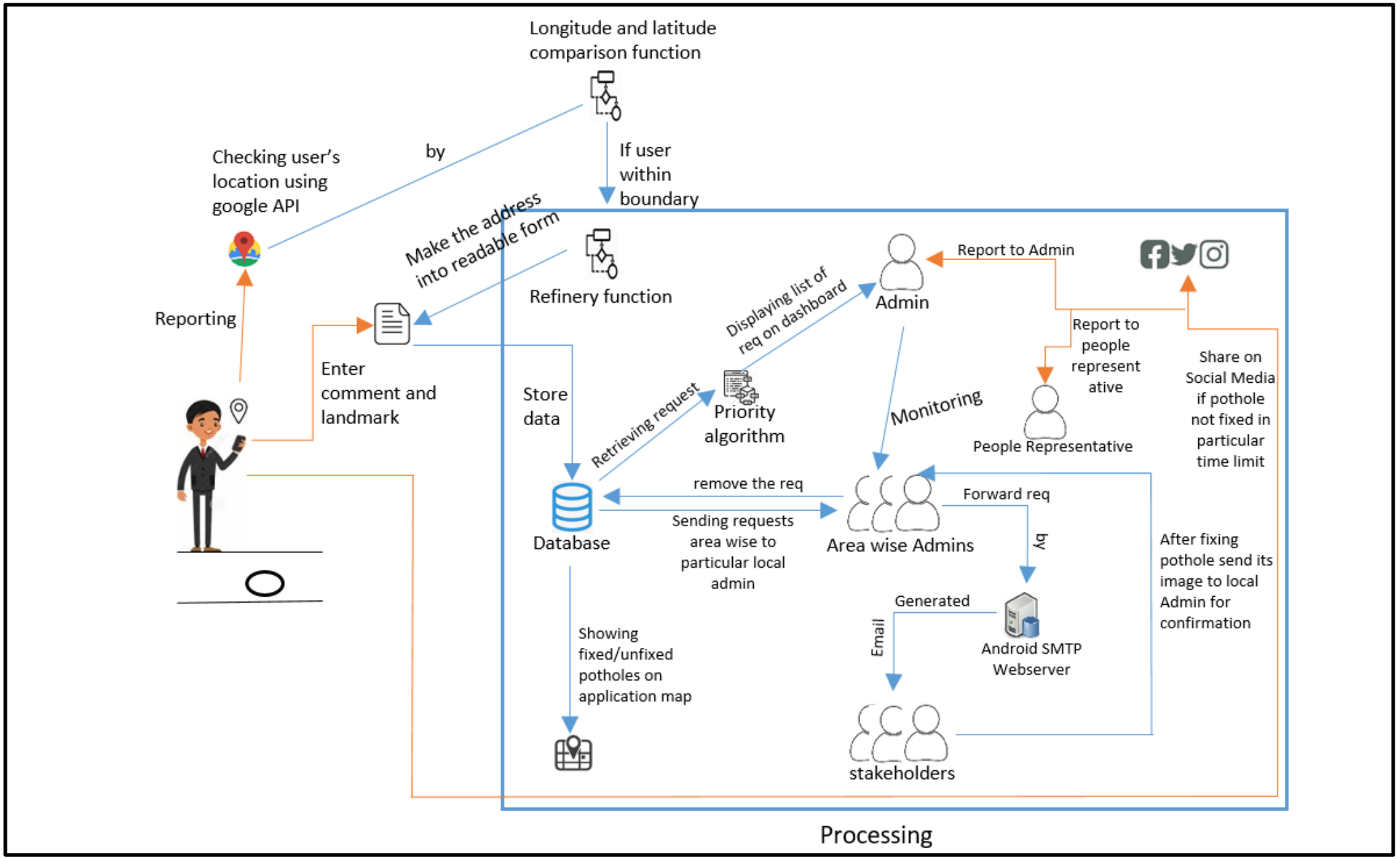
- Pothole reporting is done by mobile based dynamic image **Capturing & Reporting Technique**, where User can report pothole image through the mobile app where app will check the location of the User by using **Google API** into app which will check the **Location** of user and take report of user only if co-ordinates is in the given **boundary.** It is done by the simple **Longitude and Latitude Comparison** of the user with Boundary limiting co-ordinates by the **Mapping co-ordinates**.
- After verifying location The Activity will **Intent** to the next **XML** page where image report request is composed with predefined address extracted from Google Map by using coordinates of user and it is formatted by the **Refinery Function** which will make the address into a normal readable form. For Accurately identify pothole, user must have to fill **Text_field** which have Label As **Landmark** for Easily identifying Pothole.
- Then It will send the composed Data File to the **Firebase Database server** By using **PhP web services** which will provide security to data, then **Activity** will return to **Dashboard** of the user where the user is able to see it's reported request with it's **Elapsed Time** and **Status of Request**(eg. pending, in progress, completed). This list of Request with **Unique ID** and its **constituency area.** It will appear to the **Admin** which will inspect the request and it will be forwarded to the stakeholder by the **Email** generated by the application using **Android-SMTP-WEBSER**.
- The request will have the **Time out constraint** that will change after specific time if the status of the request will not change to completed(**status** of the request will change after stakeholder send the Image proof of completion to **admin**). If the request is not completed in the **period of time** then, another option will enable on the app which gives the ability to user to share the msg with image of the pothole on social media with the **official Hashtag** of app.

- The further extension of the solution can be listing the request of the user as per its **priority**, the priority is identified by the computing request priority using priority algorithm which have entity like its **elapsed time** number user request the same request and its **location.**
- This **prioritized list** help to the **admin** to manage the request for working user dashboard has feature like notification bar where they can able to see the request status and request elapsed time and on the **dashboard** the two label will show the real time pothole **monitoring** where user is able to see the number of reported pothole and fixed pothole number is done the **Real-time data-interaction technique** .
- App Will have the **subscription** activity where user like political leaders or **People Representative** who will receive the mail after every pothole request will reach to its time out value. so they can do further action on the stakeholders or responsible person for that. This activity will make a better **communication** between **user**, **Admin** and **People Representative**.

TECHNOLOGY STACK

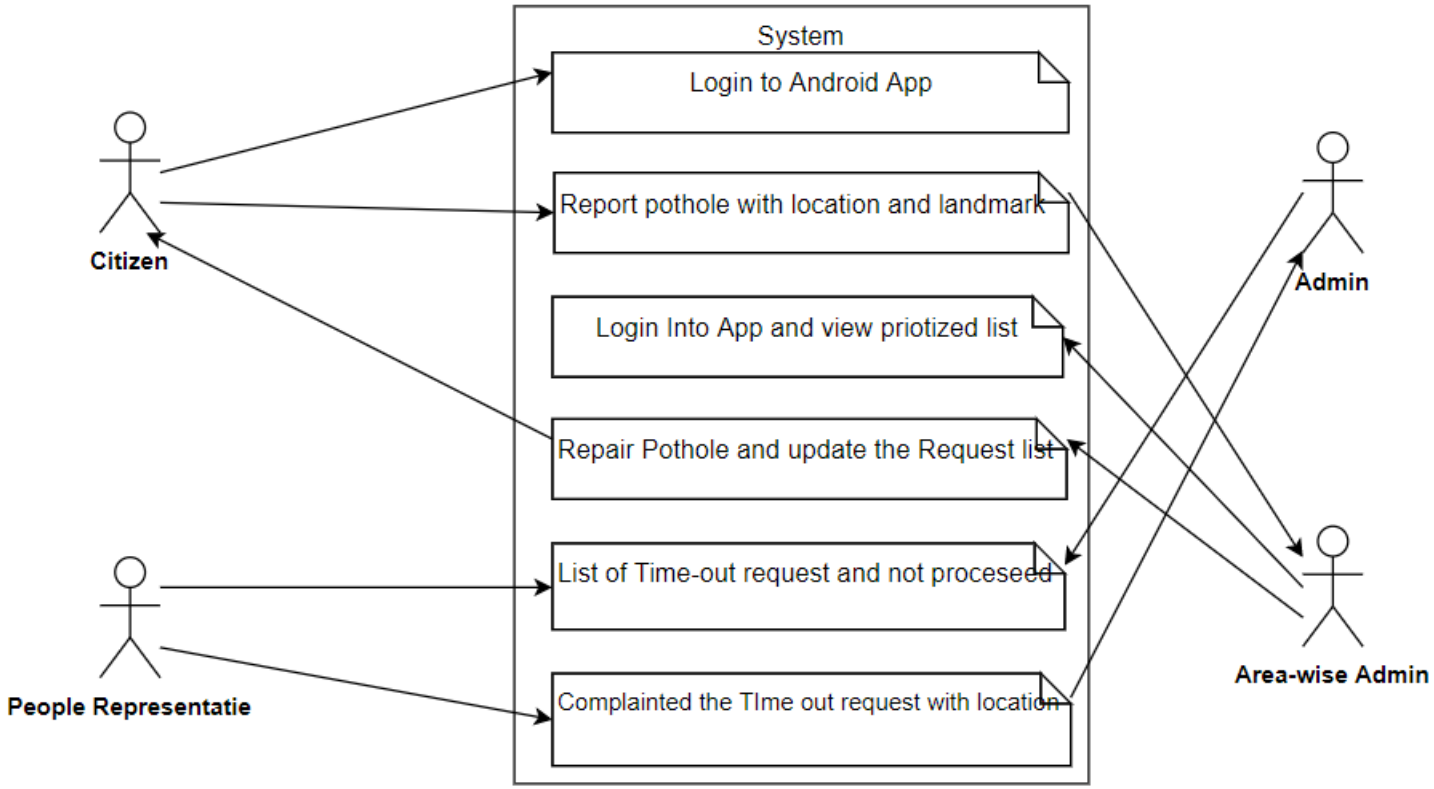
1. **Kotlin** – is an open source programming language that combines **object-oriented** programming and functional features into a unique platform.
2. **Firebase** – is a backend platform for building an Web, **Android** and IOS applications. It offers real time database, different **APIs,** multiple authentication types and hosting platform.
3. **PHP** – Open web development and data service Lang where it also **transfer** data between client and sever very **securely**
4. **Google APIs** - The **Google Maps** Platform is a set of **APIs** and SDKs that allows developers to embed **Google Maps** into mobile apps and web pages, or to retrieve data from **Google Maps**.

APPROACH DETAILS



System Architecture

Use-case diagram



DEPENDENCIES/SHOW STOPPERS

- ❑ The proposed application will need Approximate GPS co-ordinate and valid landmark.
- ❑ For better accuracy application must have always GPS ON while Using the App.
- ❑ To implement co-ordinate mapping technique Android OS has 5.1 or greater version .
- ❑ For real time report phone must have good Internet and Camera quality.