Team Pop – Final Report

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Course Name: Web Information Engineering

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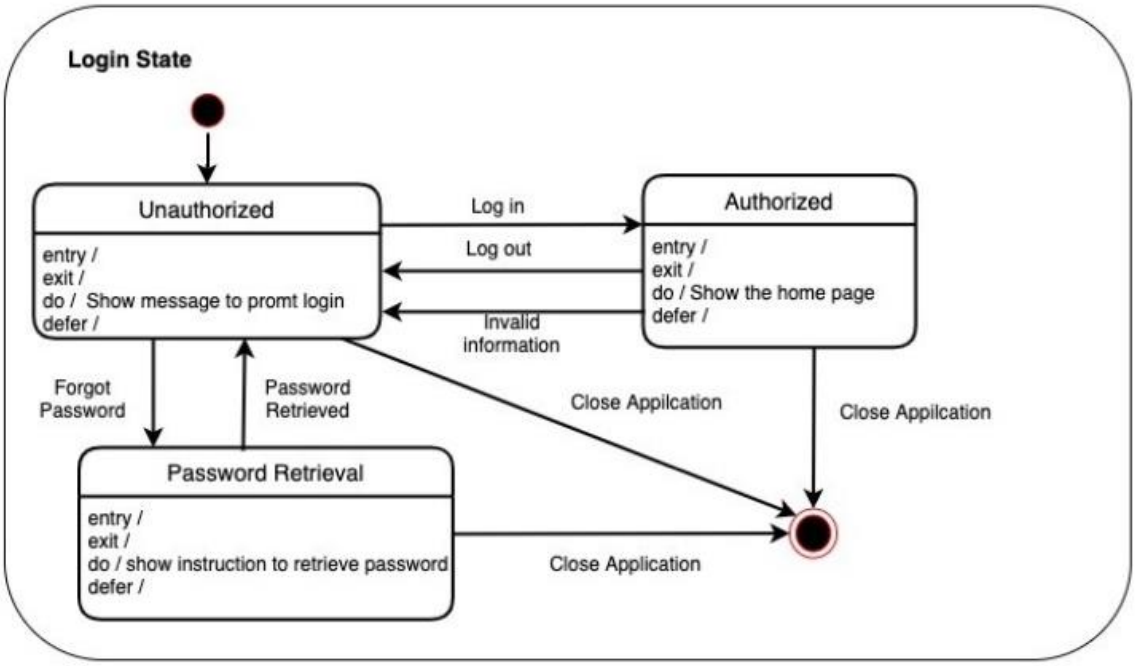
I. Introduction

As individuals began to utilize public transit such as the automobile or bus more frequently, road issues became increasingly widespread. It is unsurprising that there are many unmaintained roads in remote areas, as the local authority fails to detect the problems, whether purposefully or inadvertently.Despite being noted, it frequently demonstrates little work on the repair, and the government does not provide enough transparency by informing the public about the progress of the repair. Our team has created a web application that will make it easier and more transparent for users to report road hazards.Simply upload a photo of the issue, use Google Maps to pinpoint the area, and write a description to fully describe the issue. Transparent, in the sense that the government must inform users of the status of their problems and demonstrate the progress made in resolving them.

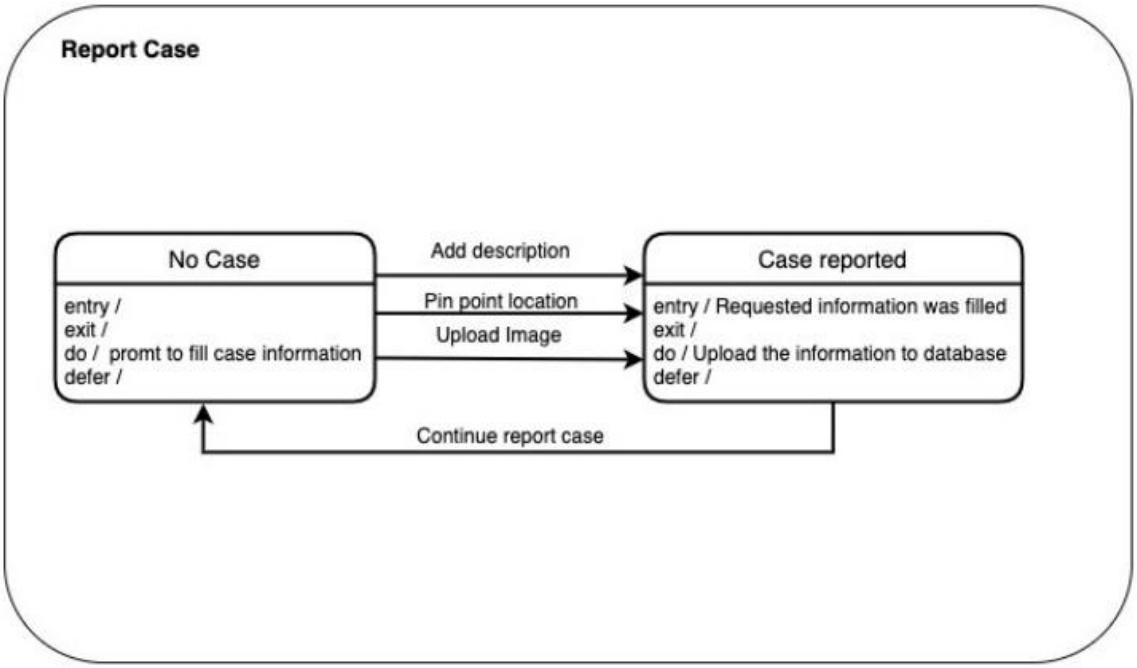
II. System design

i. State diagram

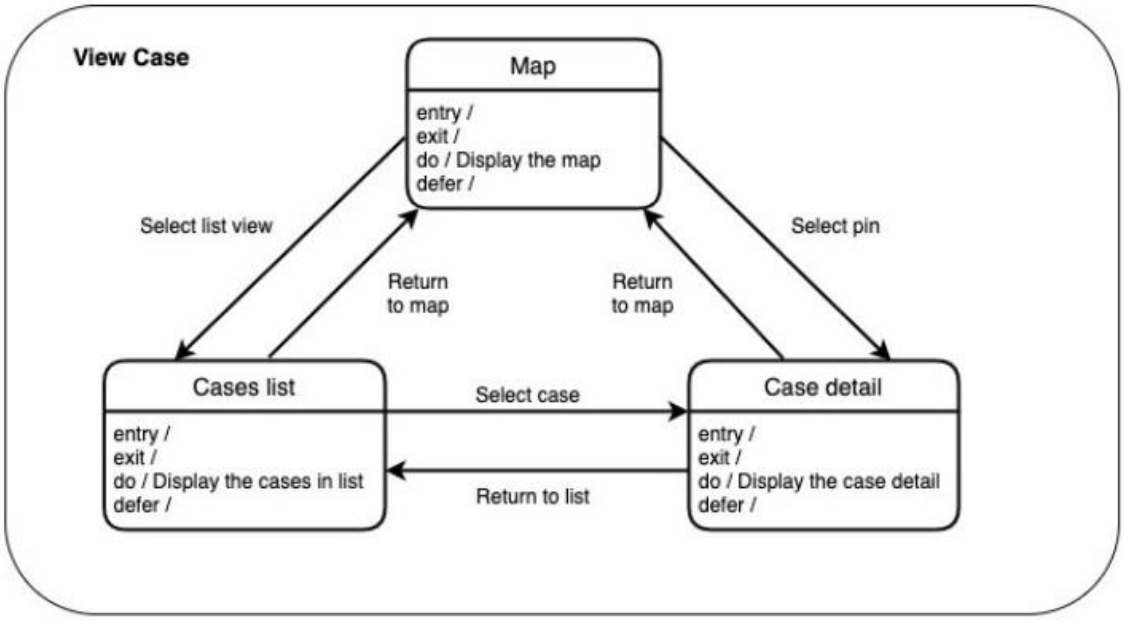
1) Login State



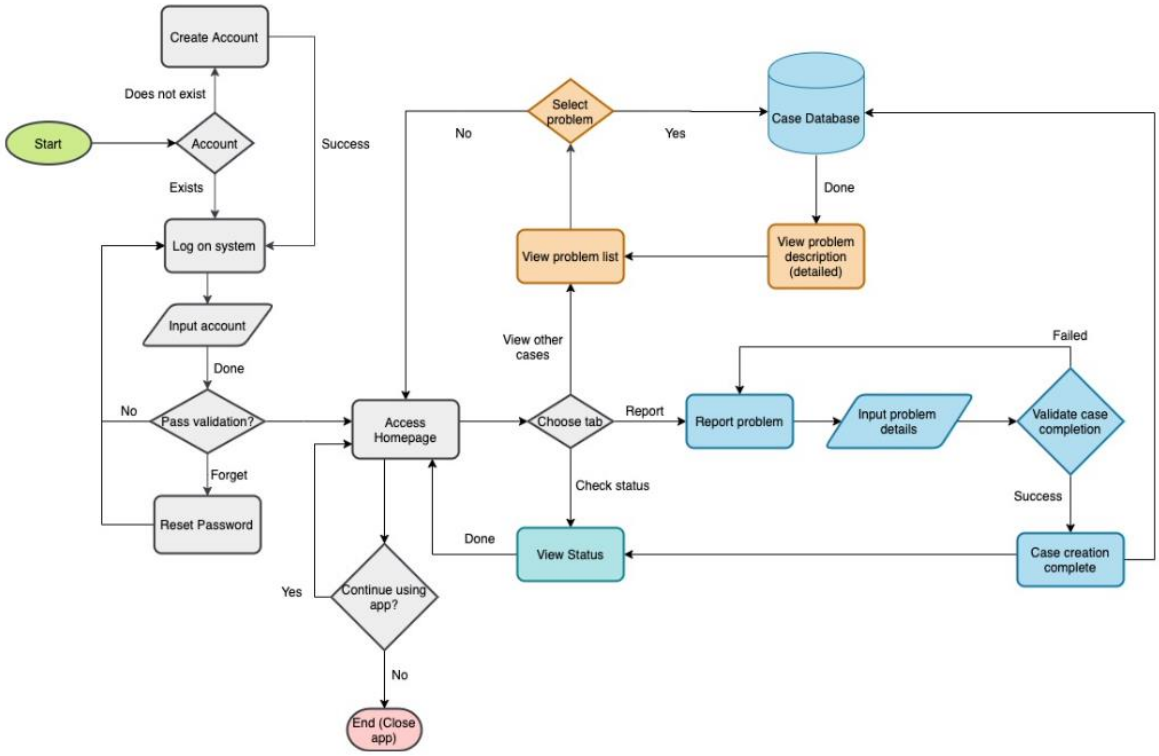
2) Report Case State



3) View Case State



ii. Flow chart



III. Implementation

i. Data

The goal of this research was to include vast amounts of data into the prototype and sorting it using filtering method. Given this, we required a substantial volume of data on reported infrastructure repair situations. To remedy this issue, our team have chosen to use the data from the FixmyStreet UK server, which was thought to be the most accurate. The data-cleaning process was then completed by our team to make the dataset more useable. This was accomplished using the SPSS Statistic software, which enables for quick dataset change. After that, the cleaned data was converted to a Json file that could be used in the React JS environment.

ii. Frontend development

Considering the prototype is a web application, the frontend of the website was needed. The web page consisted of 4 main states, including the main page, upload

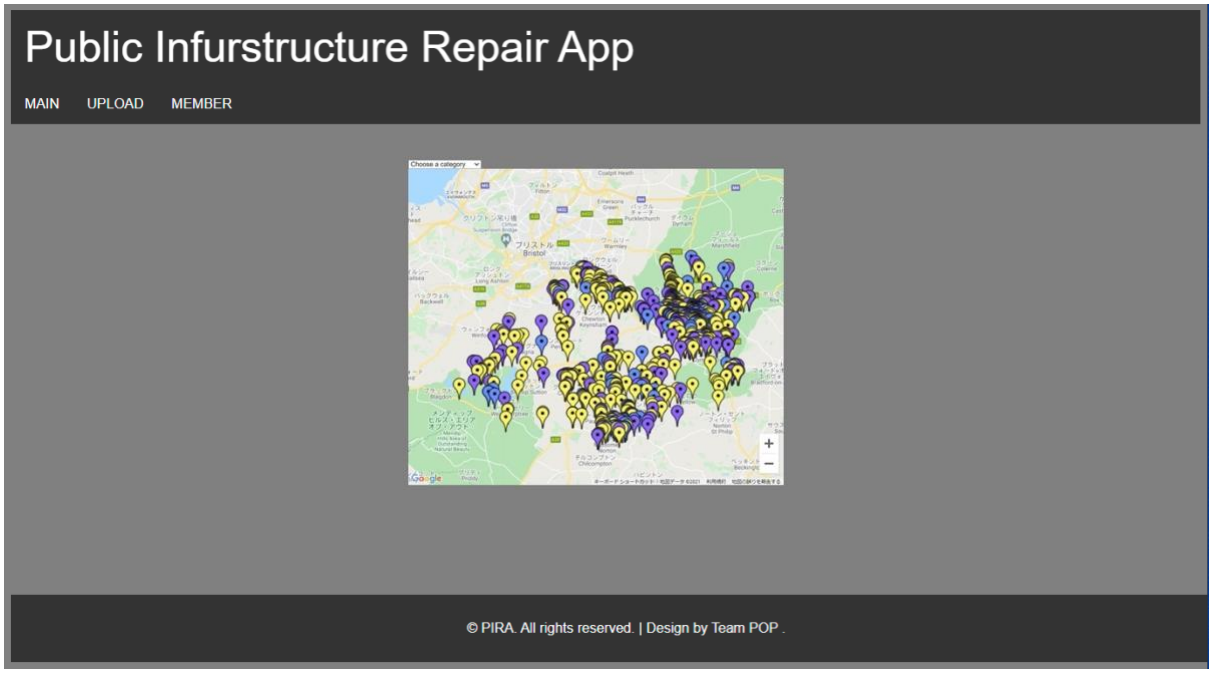
page, sign in page, and register page. The main page is the page where our main function (google map and filter system) is located, which is implemented afterward. For the effectiveness of the workflow, our team have first built the frontend with Html and CSS. Afterward, we have converted into JS file to implement into React JS environment.

iii. Backend development

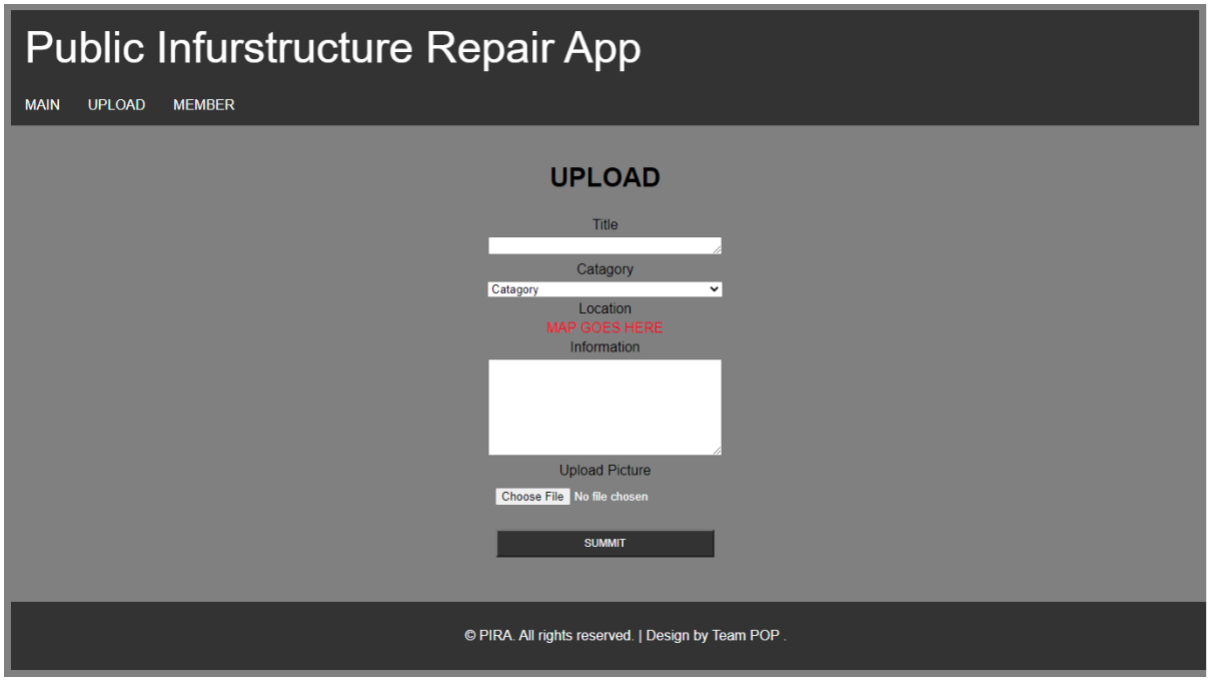
The main function of the web application was done through this process. Among the three main state of the web application, we have decided to focus on the implementation of the main page for this project. Therefore, we mainly focused on implementing map and pinpoint filtering function. To begin, the team have decided to use the Google Map API to implement the Google Maps feature. We chose the Places API particularity among the Google map API since a pinpoint function was required.

IV. Results

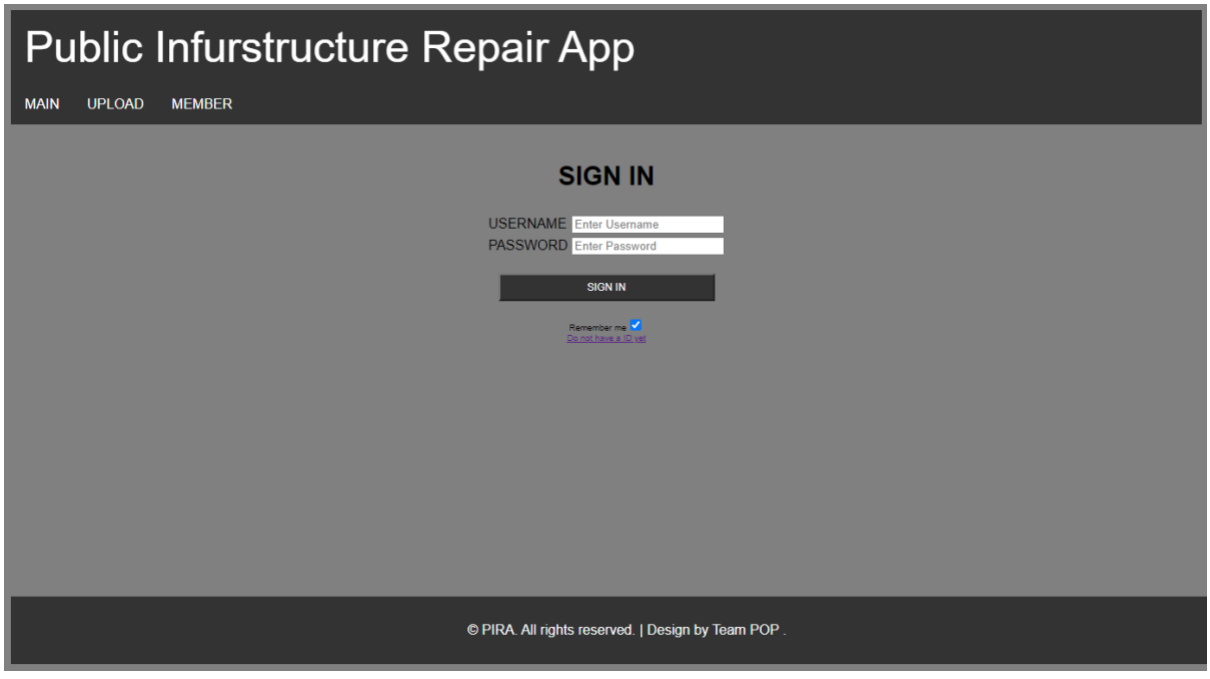
i. main page

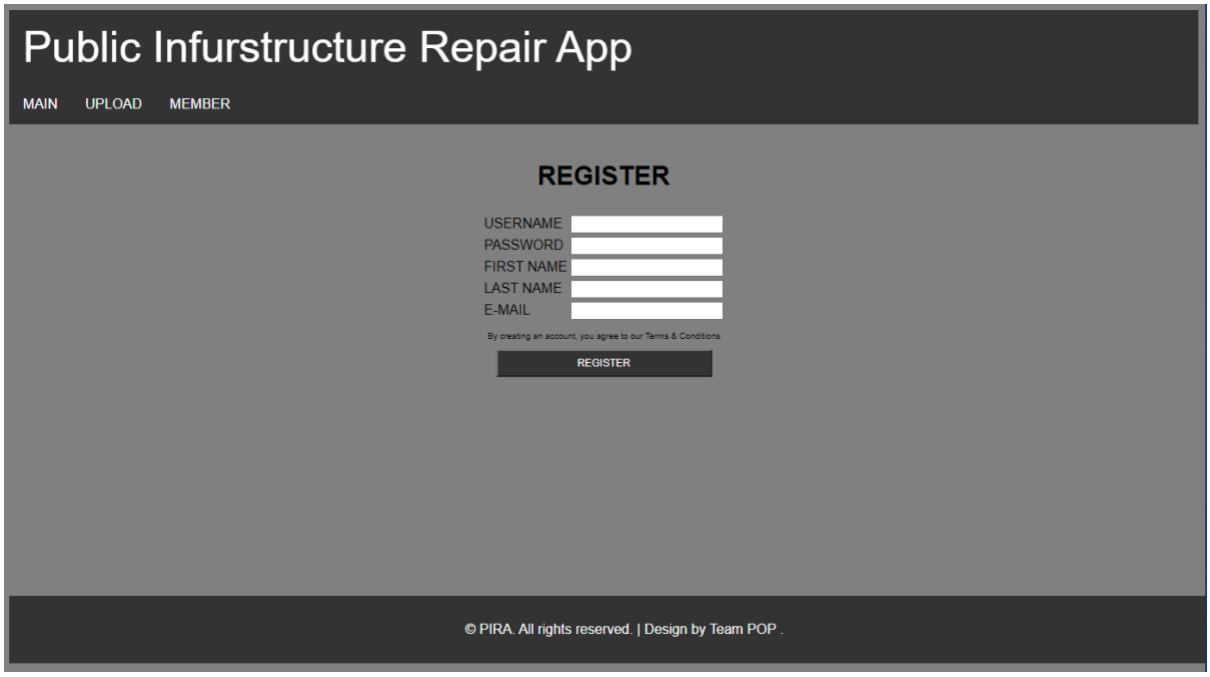


ii. upload page



iii. members page





V. Conclusion and future improvement

Throughout this project, the team has developed a web application of Public infrastructure repair application. Due to the limitation of time, the final prototype had few aspects that needed to be improved. Since we have focus on the main page's development only the database for cases were implemented. Therefore, the database for user's information was not implemented. In other words, the member's page currently is only consisting of frontend. Which needs to be improved afterwards.

VI. Work distribution

For this project, for the efficiency of workflow, our team have divided the responsibility as follows.

Keunhee Cho took the role of the project manager and system designer. As a project manager, Cho was responsible for scheduling and coordinating each team member's part. Furthermore, he was in charge of writing the final report. As a system designer, Cho was required to design the whole logic of the web application and designed the web via diagram for the developers.

Nicholas Ruppel was the lead developer of the team. As a developer, he participated in the development of the overall program. In addition to examining data from junior developers, it contributed to the completion of final prototypes based on

front-end and data created by junior developer. Moreover, he was in charge of reviewing all the technical documents of using Google map API and React JS. In addition, as the lead developer, he was responsible of the application simulation presentation.

Itsuki Mizuta took the role of the junior and UI/UX designer. As a junior developer, he worked on data collection and data cleaning, and have worked on converting the csv file into Jason file for lead developer. Moreover, Itsuki was responsible of designing the frontend of the web application. Therefore, based on the system design provided by system designer he have built the web using HTML and CSS.