



**UNIVERSITY OF THE PHILIPPINES
OPEN UNIVERSITY**

Master of Information Systems

ARMAND BOY PERALTA

FIRST AID RESPONSE (FAR) MOBILE APPLICATION

Thesis/Dissertation Adviser:

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Faculty of Information and Communication Studies

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Armand Boy A Peralta 04/26/2022

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Acceptance Page

This Special Project titled
First Aid Response Mobile Application
is hereby accepted by the Faculty of Information and Communication Studies in
partial fulfillment of the requirements for the Master of Information Systems.

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Biographical Sketch

Armand: A Journey of Innovation and Education

Introduction:

Armand, an IT professional and passionate part-time instructor, embodies the essence of making every second count. His purpose revolves around saving lives during critical moments, especially for those suffering from Cardiac Arrest, Heart Attack, or Stroke. As a resident of Metro Manila, where heavy traffic often delays emergency responses, Armand has dedicated himself to improving the system and driving innovation in the tech space.

Purpose: Every Second Matters:

Armand understands that in life-threatening situations, time is of the essence. When faced with emergencies, he advocates for swift action. In the Philippines, the common response process involves calling 911 or the nearest emergency hotline immediately. Armand emphasizes the importance of stating the exact location or address of the accident to expedite the dispatch of emergency response teams. His commitment to saving lives drives him to find solutions that minimize response time and maximize efficiency.

Professional Journey:

Agile Program Management

Armand's expertise lies in agile program management. He navigates complex projects with agility, ensuring seamless coordination among teams. His ability to adapt to changing requirements and deliver results promptly sets him apart in the IT industry.

Software Asset Management

As a seasoned professional, Armand specializes in software asset management. He understands the intricacies of licensing, compliance, and optimization. Armand's insights help organizations make informed decisions about their software investments, ultimately enhancing productivity and cost-effectiveness.

Fusion of Application and Data Engineering:

Armand's journey is enriched by the dynamic fusion of application development and data engineering. He bridges the gap between software development and data analysis, creating robust solutions that leverage both domains. Armand's holistic approach ensures that applications not only function seamlessly but also generate valuable insights from data.

Solution Architecture:

With a profound understanding of solution architecture, Armand designs systems that align with business goals. His architectural decisions consider scalability, security, and performance. Whether it's building cloud-native applications or optimizing existing infrastructure, Armand's vision shapes the technological landscape.

Nurturing the Next Generation:

Armand's influence extends beyond technical expertise. He is committed to nurturing the next generation of talent through education. As a part-time instructor, he imparts practical knowledge, encourages critical thinking, and inspires students to innovate.

Armand believes that education is the cornerstone of progress, and he actively contributes to shaping future IT professionals.

Armand's journey exemplifies the intersection of technology, compassion, and education. His legacy lies not only in the systems he builds but also in the lives he touches. As he continues to drive innovation and empower others, Armand remains a beacon of hope in a rapidly evolving world.

Dedicated to

God, my family, and my loved ones, they are my motivation and inspiration in doing this project, and this mobile application may be able to help people in the future.

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ABSTRACT

First Aid Response Mobile Application (FAR) is an emergency software that states the location of the incident and works similar to ride-hailing applications such as but not limited to Grab, Uber, Lalamove, and Angkas, which has a similar concept where it helps the first aider to respond quickly in addition to the traditional way of the emergency response system, wherein the user shall call an emergency number and the emergency alert will be received by the dispatcher and the latter shall send the alert notification to all active medical team/personnel within the vicinity area of the former hence will track down who is the nearest to the location of the user/victim among them, once the active first aider received the alert it will automatically dispatch and accommodate the request of the user. The First Aid Mobile Application will give the user another help and option that could eliminate the time that is consumed by heavy traffic or travel time through the provision of direct notifications to the nearest first aid volunteer.

Chapter I
INTRODUCTIO
N

Every second matters, especially to a dying person who has suffered in Cardiac Arrest, Heart Attack, or Stroke. In the Philippines, the most commonly known response process is to call 911 or any emergency hotline immediately. Then, you shall state your exact state exact location or address of the accident, and the customer service center will provide the nearest emergency response team to dispatch in your area. The said process alone consumes time, especially here in Metro Manila wherein heavy traffic is everywhere.

According to First Aider training that I attended at the Philippine Red Cross - Intramuros Manila branch around November 2019, one of the trainers mentioned that it takes 4 minutes to 6 minutes before a 'Clinically Dead' person can be considered as 'Brain Dead'. 'Clinically Dead' or 'Clinical Death' in medical terms defined by the Oxford dictionary, are the persons or patients identified with the cessation of heartbeat and respiration. These are the patients that have more chances of survival if proper treatment or Cardiopulmonary resuscitation (CPR) has been given. On the other hand, 'Brain Dead' or 'Brain Death' is irreversible, the actual or legal death that only a doctor could declare. In this scenario, it is only a matter of time before a patient could survive. This developed project aims to have a first aid response mobile application that contains pre-loaded first aid instructions to use as a guide and to provide people another option to seek help and first aider to respond anywhere and at any time.

This document will show how the application was developed using the different programs and tools available online, how the application has been tested programmatically and apply it in real-life scenarios, and the result will show the effectiveness and efficiency of using the First Aid Response (FAR)

Mobile Application.

Chapter II

REVIEW OF EXISTING ALTERNATIVES

2.1 First Aid App

License: Open

Source Platform:

Mobile

Description: A first aid android application that provides instruction or guides for users on what to do. This has the following functionality:

1. Can call the emergency number through the application.
2. Preloaded content (instruction and guide).
3. Interactive quizzes

The project and this application are both for mobile platform and has preloaded instruction about first aid and can use the app to call. The difference is that this project has a feature like ride-hailing to track the victim's location and can send chat messages. This reviewed application can also be used as an alternative since it has the same functionality as this project. However, the functionality of this First Aid App can still be improved. It lacks some features where it can eliminate the response time by locating the victim, and having an instruction is not enough to do some first aid, basic training is still required which my proposed system has, it requires an account for the first aider to make sure they have proper training before using the app.

2.2 Development of a First Aid Smartphone App for Use by Untrained Healthcare Workers

License: Open Source

Platform: Mobile

Description: A first-aid smartphone app that contains basic training or guidance that can assist untrained healthcare workers. This has the following functionality:

1. Instructions for diagnostic process and treatment options.

The project and this application both contain instructions and a guide for users on how to do first aid treatment depending on the injury or cause.

The features of the mentioned system can also be added to the project, but the function or feature of the system is only limited to providing instructions and guidance, the purpose of the project was to minimize the response time as much as possible by locating the exact location of the victim. Also having a guide alone isn't enough to provide quick first aid treatment, a basic actual training is still required.

2.3 SMS Based System To Provide First Aid Information In Kenya License: Open Source

Platform: Mobile/Desktop

Description: An SMS-based first aid system, that provides first aid information by triggering an SMS inquiry. This has the following functionality:

1. Query first aid information/guide using SMS.

2. Provide references and refreshments for first-aid trained users. The project and this application both provide first aid information and a treatment guide to users using a mobile phone to respond quickly to any injury or accident. The feature can be used and added to the project. But the proposed project already contains contact information like mobile numbers and names for both users, either a regular user or a first aider that provides treatment, in this way they can communicate faster, and the first aider can provide instruction while waiting to arrive at the location of the victim.

2.4 InMeds: An Android-Based Provision of First-Aid Guide and Emergency Treatment Instructions Utilizing Rule-Based Reasoning

License: Open Source

Platform: Mobile

Description: An Android application that provides first aid guidelines and instruction using an expert system. This has the following functionality:

1. knowledge-based first aid instruction
2. Request and Response handler – that translate user input to have understandable answer.

The project and this application have a knowledge-based feature that can be easily accessed by the user. Both are mobile applications as well for portability purposes. This application can be used as an alternative as well, as it provides instructions based on the input of the user, this can be used with or without the help of a first aid practitioner. However, a first aid treatment is much better to be done by an expert or trained person as much as possible to make

sure everything was properly treated. That is why the project proposed contains a location tracker for the first aider to locate the exact location of the victim to provide first aid treatment physically.

Chapter III
PROJECT
DETAILS

A. Overview

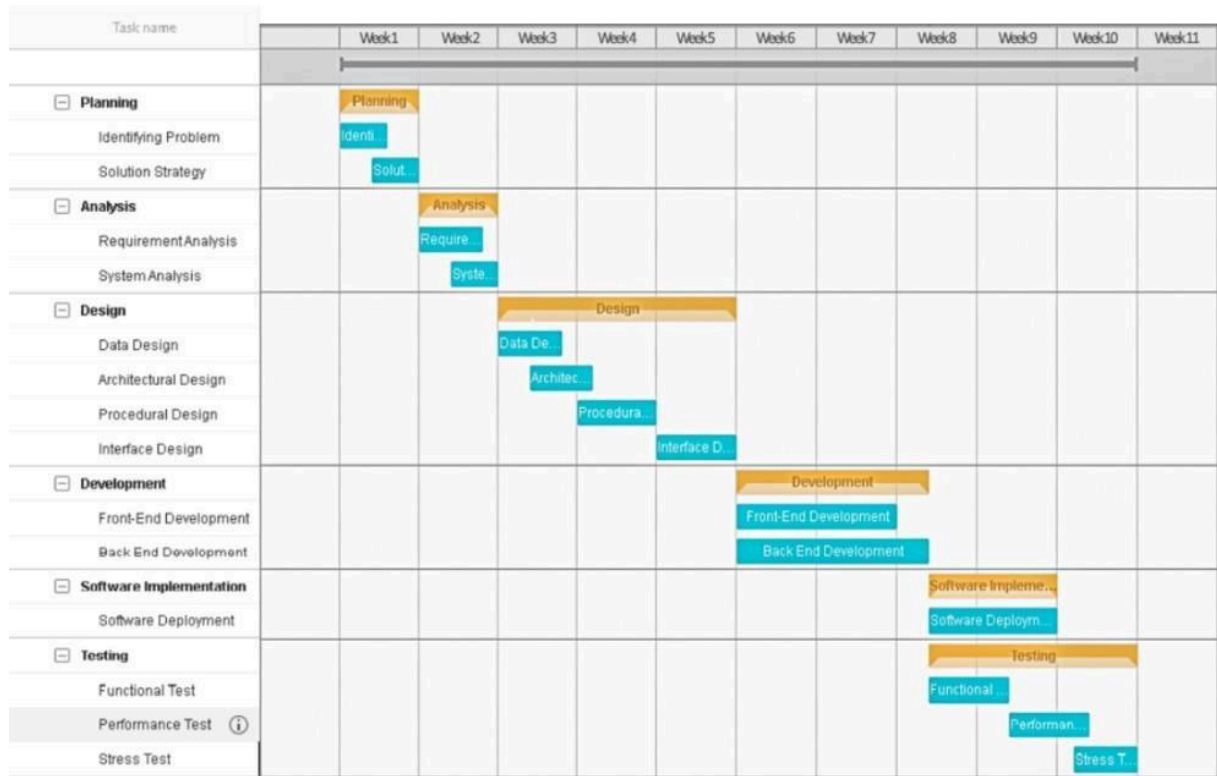
First Aid Response Application (FAR) is an android mobile software that serves as an emergency utility app for the general public. The said application has three (3) types of users which are, the regular user, the first aider, and the support or admin. The *regular users* are the default user or what we called the general public or public users, anyone who downloads the application for the purpose of the immediate call for assistance or first aider. The regular user can look for preloaded instructions or trigger the emergency button which enables them to send the exact coordinates or location, or contact information. The First Aider user also has the same access as the regular user, the only difference is that The First Aider receives notifications, messages, or information about a certain incident within the 1-kilometer range area. The First Aider by default will receive a message containing the coordinates or location, contact information, and status if the emergency button has been triggered around the range area. The third user is the *support or admin*, the account has also access to received messages even without on the range area. It has also the capacity or the access to generate reports and analytics for future study.

Scope:

- Has preloaded knowledge-base first aid instructions to provide guidance.
- Has a location tracker that provides the information of both first-aider and regular users.
- Can initiate and facilitate a call feature for communication purposes.
- Has a ride-hailing feature that can book and locate the nearest first aider available to provide a response.

- Has an account registration with OTP feature to verify users.

Deliverables and Timeline: Project Gantt Chart



B. Use Case

Figure 1.0: System Use Case Diagram

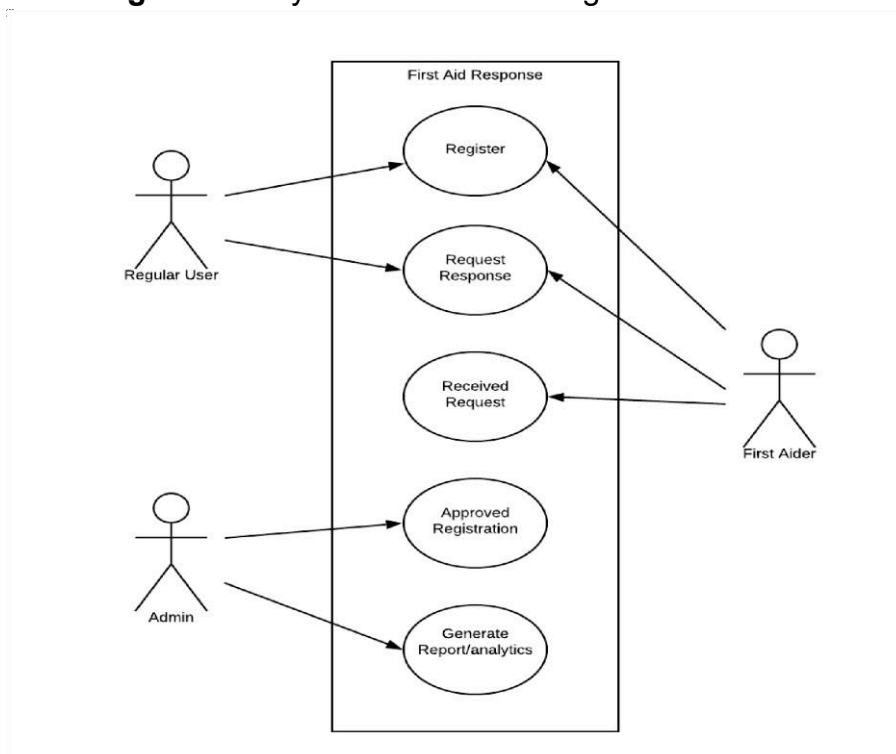


Figure 1.0 shows the type of users that will be using the application, Regular users for the general public, First Aider for all trained and certified users, and the admin that will maintain the program and application.

C. Theoretical Framework

The project was supported by the study entitled Evaluation of M-AID®, a first aid application for mobile phones by Robert Zanner, Dirk Wilhelm, Hubertus Feussner, and Gerhard Schneider in the theory of the significance of using a mobile application as a reference tool in performing a first aid treatment to the victims. The study shows that the use of mobile phone applications did not enhance the chances of survival of the victim, but the performance of the individual who uses the application was significantly faster. The study concluded that skills from practical training cannot be replaced by mobile applications. But with the knowledge of using mobile phones together with the practical knowledge of CPR or first aid did improve the performance of the first aider.

In relation to this project, a ride-hailing feature was added to easily locate the victim's location and provide first aid treatment urgently with the practical knowledge gained by the first aider. Preloaded instructions are also available to provide guidance to the users of the application. Since mobile application knowledge is not able to replace actual skills, the account for the regular end-user and first aider have been separated so that only trained first aider can receive a notification.

D. Technologies Used

First Aid Response Mobile Application was developed using the following tool:

Database: FireBase

Description: Developed by Google in creating Mobile and web applications, it provides SaaS and BaaS where it can also provide hosting services and backend services such as real-time database and cloud storage.

Reasons to use: Much cheaper for the prices, has a broad network of community that helps to solve issues in the program itself, and has a lot of capabilities like Microsoft Azure.

UI Design: Adobe Photoshop 2020 CC

Description: Developed by Adobe, a raster graphics editor that is compatible with Windows and Apple's MacOS, Photoshop was the industry standard for Digital Arts.

Reasons to use: Adobe Photoshop was the most commonly known Photo editing tool, it has a lot of capabilities such as the conversion of the objects of the photo to a programming tool such as buttons and forms. The flexibility of the application is that it can be integrated or connected with the prototyping tool that was used which is Invision.

Prototype: Invision

Description: Developed by InVisionApp Inc. Used in making prototypes, a visual collaboration tool.

Reasons to use: Easier to use, had a user-friendly interface, can be integrated with Adobe Photoshop, can access anywhere across different platforms such as mobile or web, and it is free.

Runtime: Node.js

Description: Developed by OpenJS Foundation, a Javascript runtime that is free to use or open-source, and can be used across different platforms such as mobile and web applications.

Reasons to use: Free, much easier to use, since you'll only need to be familiar with JavaScript, and can be used for both mobile and web applications.

Storage: Google Cloud

Description: Developed by Google, a suite of cloud computing services similar to Microsoft Azure, a PaaS (Platform as a Service) is used to develop applications.

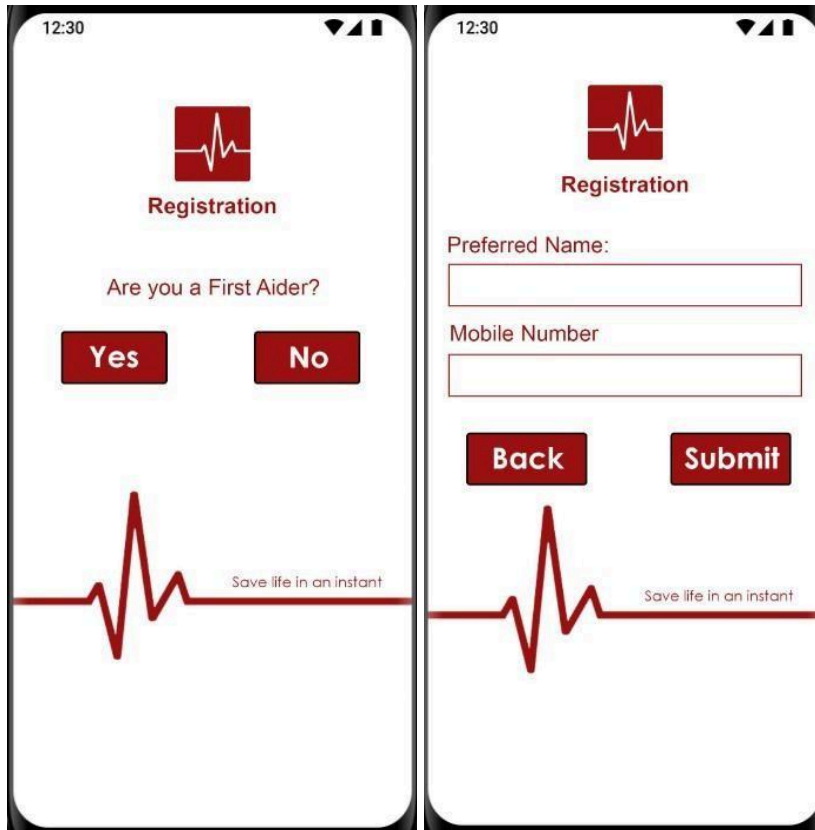
Reason to use: Cheaper price, and has added 100 USD credit for students, a total of 300 USD credits in using the application.

E. System Design

a. System Features

1. Record user information

Figure 2.0 & 2.1: Record user information Interface



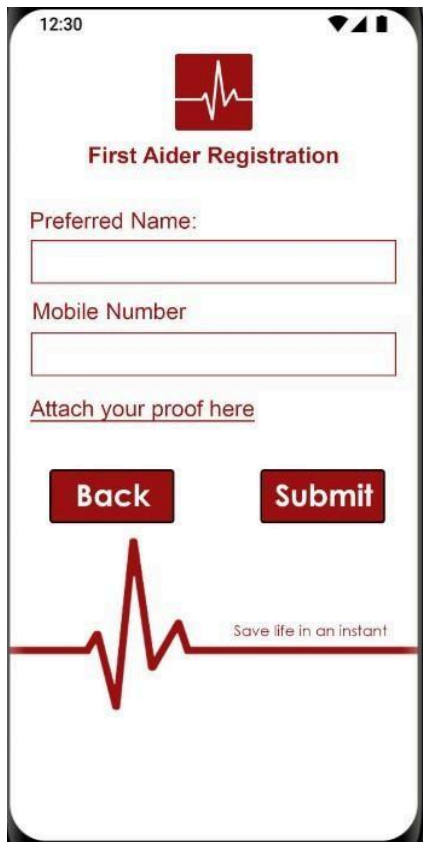
The System has a feature and capability to store user information such as the user's preferred name, mobile number, and user type (whether you are a First Aider or a regular user). This feature handles all the input information that is being stored in the Database.

Figure 2.0 shows how the user type is recorded.

Figure 2.1 shows the regular user registration, once the user answered "No" in figure 2.0.

2. Upload document

Figure 2.2: First Aider Registration Interface



12:30

First Aider Registration

Preferred Name:

Mobile Number

[Attach your proof here](#)

Back **Submit**

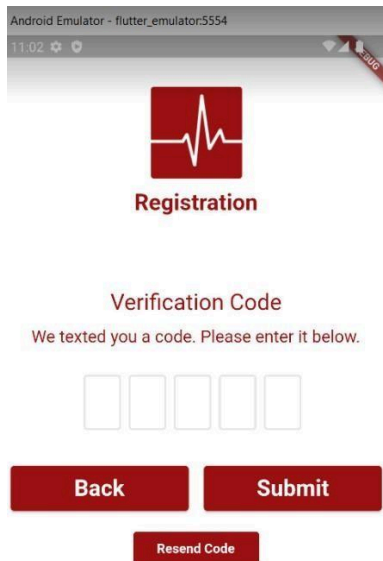
Save life in an instant

The System has the capability and feature to store files or documents for the administrator to review whether the First Aider is qualified. This feature handles the storing of documents in the storage once submitted.

Figure 2.2 shows the user registration for the First-Aider once you have accepted or clicked “Yes” in Figure 2.0.

3. Generate OTP (One Time Password)

Figure 2.3: OTP Interface

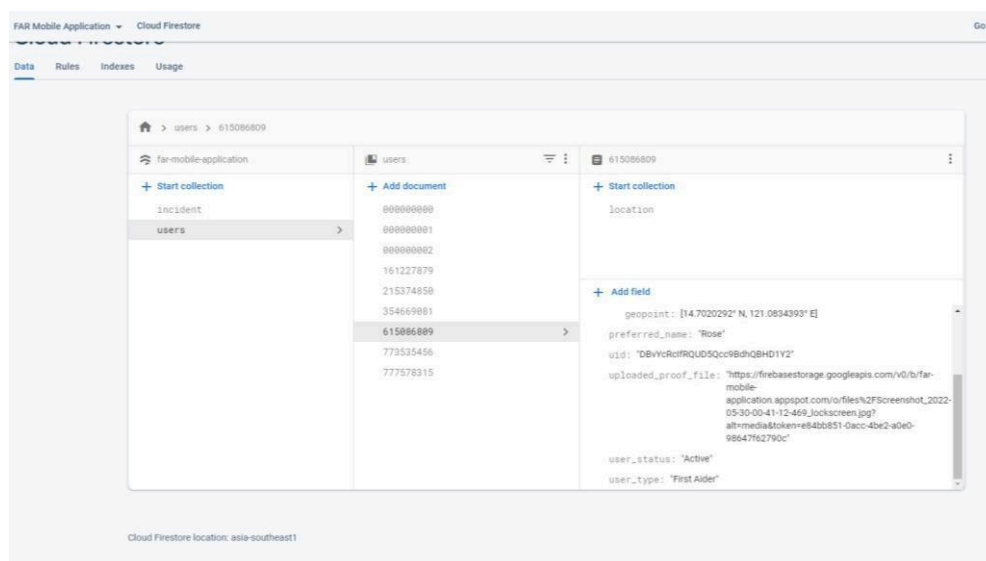


The System has the capability or features to generate and accept One Time Password (OTP) for security purposes though the application itself does not have a login feature; it keeps the reliability of the user's registration. through this verification code. Firebase directly handles the OTP.

Figure 2.3 shows the 5 Digit verification functionality.

4. Registration Approval

Figure 2.4: Registration Approval Interface



The system has the capability to review and approve all the first aider registration requests, this feature or functionality helps to improve the reliability and rating of the application since it filters the users and will only accept qualified first aiders.

The image above shows the user interface for the Firebase web application, this is the system's database and can also be used to generate reports and analytic dashboards. via the Firestore Database, you can also see the user's attachment for the admin to review.

5. Ride-Hailing

Figure 2.5: Ride-Hailing Interface

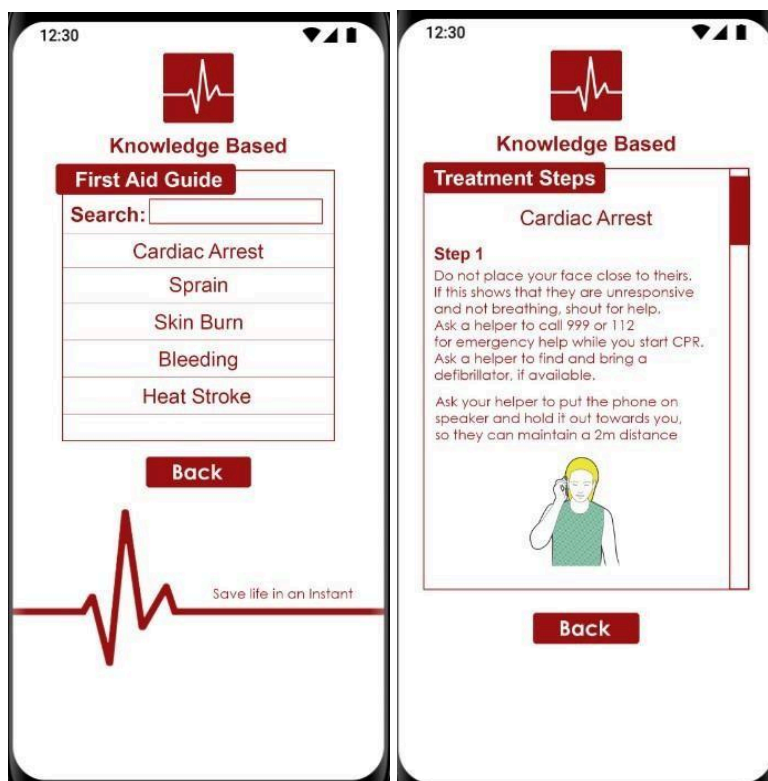


The system has a Ride-Hailing capability often used in some applications such as Uber, Grab, or Lalamove. This feature encompasses location tracking, real-time booking, and notification sending/receiving. Location tracking is one of the most important functionalities of this application as it provides the distance, location, and route information of the notified incident. The booking functionality keeps the application systematically organized to prevent double-booking and checks the availability of the First Aider. Once the first aider has been booked, the status will automatically change from being *Available* to *Busy*. While the notification functionality alerts

both First Aider and Regular users, letting the users know that the booking was successful or canceled. Figure 2.5 shows the map, location, and the user's details such as name and contact information. It also shows the other options, the "Do it yourself with this!" which directs you to the knowledge-based article or guides.

6. Knowledge-based

Figures 2.6 and 2.7: Knowledge-based Interfaces



The system has the capability or feature to provide a knowledge-base guide for both First Aider and Regular users. The functionality aims to provide guidance and step-by-step instructions on curing or aiding a victim depending on the incident or injury. This can be accessible anytime as it does not require an internet connection which makes it available anywhere as an alternative tool for sending an emergency message. Figure 2.6 shows

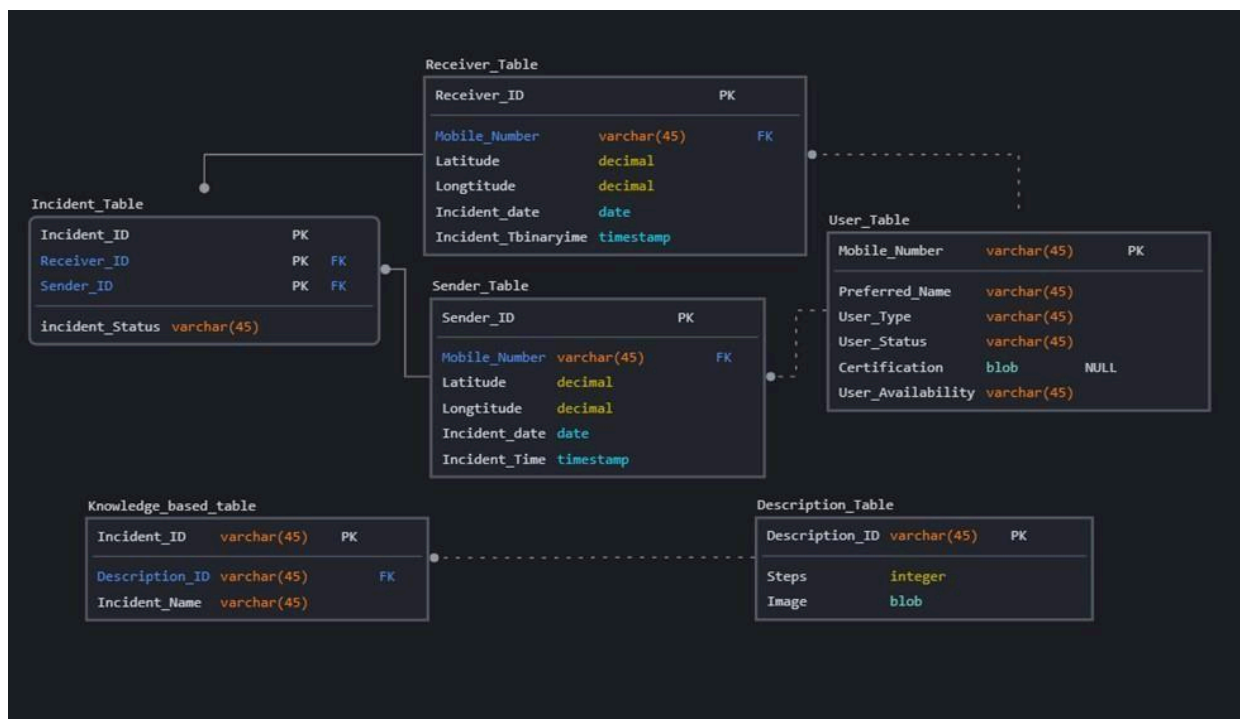
the

knowledge-base feature which you can search and select the incident that the user wants to be helped with.

Figure 2.7 shows the step-by-step guide in assisting or aiding the selected incident. It also provides images for the user to visualize the instruction.

F. Database Design

Figure 3: Database Schema



Risk assessment:

List of the possible risk of the project:

Impact:

High - Application cannot be used

Average - Application may not be able to use

Low - Some features may not work

Table 1.0: Risk Assessment

Possible Risk	Impact	Solution/workaround
Slow to No Internet Connection	High	Show guides in the application interface to call an emergency, do the traditional way, and use the knowledge-base guide to at least provide help or assistance in case needed.
Server/Database Downtime	High	Show guides in the application interface to call emergencies, do the traditional way, and use the knowledge-base guide to at least provide help or assistance in case needed.
Bugs or installation issues	Average	Provide guides to re-install the application, use, and error code and provide the contact to application support for a fix.
Location inaccuracy	Average	Show instruction in case of location inaccuracy to call the victim/the first aider.

SWOT analysis was used to identify the potential risks and issues.

Table 1.1: SWOT Analysis Table

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. Locates the exact location of the user 2. Contains instructional materials about first aid 3. Reduces response time 4. Lessens the panic of the requestor 	<ol style="list-style-type: none"> 1. Requires Internet connection 2. Requires Android mobile and version 11 at least. 3. Limited radius area for the rescue request coverage
Threats	Opportunities

<ol style="list-style-type: none"> 1. Users might take this as a primary tool for help, which should not be. 2. Might be used for a prank or false request 	<ol style="list-style-type: none"> 1. Coordinate with NTC, DICT or DOST to request the usage of this application via the internet for free. 2. Have the application available for IOS phones. 3. Expand the radius area for the rescue request coverage
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Roles Expectation:

Table 2.0: Roles and Tasks

Roles	Name	Tasks
Project Manager	Armand Peralta	Overall sees and manages the project
Test Lead		Facilitates the testing
Business Analyst		Understand the process and requirements
Development Lead/Programmer	Justin Jovero	Programs the application and setup the infrastructure

Chapter IV
PROJECT
ASSESSMENT

A. User

Testing

Purpose:

The purpose of this test plan is to provide details on what process or testing approach was used for the First Aid Response Mobile application, how it was started, how it was being tested, and what is the initial result of the occurrence.

Project Overview:

The First Aid Response Mobile application is an android compatible that was developed to provide an additional option in providing initial or first aid to the public in order to lessen the longer time to wait for the response and can prevent the worst scenario that can result in a loss of life.

Audience:

The audience of this project was the general public and the first aid responders which includes medical practitioners, firemen, doctors, nurses, or anyone who has been trained and recognized as a first aider.

Test Objectives:

- To find errors, bugs, and the program code problem of the application.
- To gather feedback and suggestions from the users.
- To find improvements and enhancements for the application
- To have a stable and production-ready application

Test scope:

- Functional Test - to be performed to check the functionality of the application. by providing inputs and validating its output.
- User Acceptance Testing - to be performed to check and align the process of the application functionality according to the business requirements or business process.

Test Process:

1. Understand the business requirements and process.
2. Learn the program flow.
3. Prepared Test Cases
4. Review the test results.
5. Apply changes or modifications to the application.

B. Testing Results

The system used an In-house testing approach, where a group of people was assigned to do a certain task in the same location, at this point, the developer conducted an Alpha test of the product at home using Black Box - Decision Table

Testing methodology which can be seen on below:

Alpha Tester: Armand Boy Peralta

Table 3.0: Registration Feature (Regular User)

Conditions	Preferred Name	Blank	Blank	Blank	Valid	Valid	Valid
	Mobile Number	Blank	Valid	Invalid	Blank	Valid	Invalid

Actions	Expected Result	Error	Error	Error	Error	Success	Error
	Actual Result	Error	Error	Error	Error	Success	Error

Table 4.0: Registration Feature (First Aider)

Conditions	Preferred Name	Blank	Blank	Blank	Valid	Valid	Valid
	Mobile Number	Blank	Valid	Invalid	Blank	Valid	Invalid
	Attachment	True	True	True	True	True	True
Actions	Expected Result	Error	Error	Error	Error	Success	Error
	Actual Result	Error	Error	Error	Error	Success	Error

Table 4.1: Registration Feature (First Aider)

Conditions	Preferred Name	Blank	Blank	Blank	Valid	Valid	Valid
	Mobile Number	Blank	Valid	Invalid	Blank	Valid	Invalid
	Attachment	False	False	False	False	False	False
Actions	Expected Result	Error	Error	Error	Error	Error	Error
	Actual Result	Error	Error	Error	Error	Error	Error

Alpha Tester: Armand Boy Peralta

Table 5.0: Generate OTP (One Time Password)

Conditions	Enter Verification Code	Blank	Invalid	Valid
Actions	Expected Result	Error	Error	Success
	Actual Result	Error	Error	Success

Table 6.0: First Aider Approval

Conditions	First aider application status	Rejects application	Approved applications
Actions	Expected Result	First aider will go back to registration again	First aider can now proceed to home page and successfully registered
	Actual Result	First aider has not been registered and redirected to registration page	First Aider was registered and red directed to home page

Table 7.0: Ride-Hailing Feature (Trigger first aid request)

Conditions	Trigger first aid request	Clicked less than 5 seconds	Clicked exactly 5 seconds	Clicked more than 5 seconds
Actions	Expected Result	No request sent	Request sent	Request sent
	Actual Result	Request sent	Request sent	Request sent

Table 7.1: Ride-Hailing Feature (Received Request)

Conditions	Received Request	Clicked less than 5 seconds	Clicked exactly 5 seconds	Clicked more than 5 seconds
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Actions	Expected Result	No request sent	Request sent	Request sent
	Actual Result	Request received	Request received	Request received

Table 8.0: knowledge-base Feature

Conditions	Open knowledge-base article	Open knowledge-base during no request activity	Open knowledge-base during request activity
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Actions	Expected Result	Knowledge based article should open	Ongoing request activity should notg be cancelled
	Actual Result	knowledge-base article was opened	Ongoing request activity was not canceled

Chapter V

DISCUSSIONS

“A good process produces good results” - Nick Seban, In developing this project, the developers learned about the process of first aid/emergency response in the Philippines, the current dispatching process was good enough and managed to save millions of lives till today and that does not need to be replaced but rather enhance on a way that it will lessen all the struggles and the problems that are being encountered, the understanding of the process and situation may lead to find a much better idea or an innovative solution until it becomes perfect. Once the process has been enhanced, it will always lead to something better. And this project was not just about a regular process that solves problems in queuing for services or customer satisfaction but rather a life-saving process that could be used by everyone.

As also part of the journey, the developers understood the struggle of each first aid responder especially here in Metro Manila where heavy traffics are everywhere most specifically during rush hours.

In terms of technicalities, the developers determined that the usability of the program does not base only on the number of features, functionalities, or complexities but rather on the benefit, impact, and usefulness of the application.

The struggles in developing this project or application are the different perspectives and levels of knowledge of each individual in terms of first aid treatment and familiarization with the use of a ride-hailing type of application, how important it is for everyone since the software targets the general public as its user, the developer needs to conduct research on how important and useful this project will be for

everyone including the access and familiarity of each person in using mobile applications such as Grab, Angkas, and Lalamove.

Maintenance Plan

Background:

This project was designed dynamically in terms of rapid development and changes in technology. The application is ready for any future enhancements, integrations, or additional features that can be used to improve the user experience. Therefore, a maintenance plan is required to sustain the application's usability.

About:

The maintenance plan is the sum of all activities that are needed in supporting the application.

Objective:

The objective of this maintenance plan is to aid the person that will be using and maintaining the application. This document will serve as a reference and guide for application support.

Operational Requirements:

Maintenance and support are performed by a developer or a team of developers with an intermediate level of knowledge when it comes to mobile coding/scripting, networking, and cloud computing. The support or maintainer of this application should also provide or develop a knowledge base in preparation for any transition of work and must be available at any time.

The application server should always be monitored 24/7 once the application was fully implemented to the public, as any issue that may occur in the system could result in a loss of life.

Any planned maintenance upgrade should be able to notify in advance at least a week in advance to inform all users of the upcoming changes and downtime if applicable.

The application administrator should also have a certification or documents with regards to first aid response or medical response, proving that the admin can identify whether the applicant is suitable enough to be a first aid responder. This could be checked for at least a week.

Analytical reports can also be generated monthly or at any time of the month depending on the need, to understand and interpret the results of the data of the incident that was recorded and could possibly be used for any improvement.

Chapter VI

CONCLUSIO

N

As technology rapidly advances and improves resulting in different inventions and innovations, still, the mobile phone is the most common device that every individual has. Due to the portability and convenience that the device brings, people are carrying and using it most of the time as it helps to ease up the tasks that the user has - navigation, communication, and reservation, which the project has, especially for the first aid response. If the public finds mobile phones useful in finding nearby restaurants and has it reserved, what more if the public uses it to save human lives? Incidents and accidents may seldom happen in public, but what guarantees the people to abruptly get a first aid response in a short period of time from the moment it occurred? The First Aid Response (FAR) mobile application has the features to notify and alert the nearest First Aid responder within a radius of 1 kilometer that can immediately attend to the situation. Other than that, the first aid guide and instructional material can also be in use in every emergency.

Chapter VII

FUTURE

WORK

The developer recommends having the First Aid Response Mobile application be available across different platforms such as IOS and Windows and not just limited to Android in terms of technical compatibility. In terms of the application response process, the scope radius area of the response request can also be increased depending on the amount of traffic in the area.

For further deployment of the application for the public, this can be coordinated with the Department of Science and Technology (DOST), Department of Health (DOH), National Telecommunications Commission, or Department of Information and Communications (DICT) to work with the mobile carrier companies in the Philippines to have this available in all areas by making the application free of data charges such as Facebook.

Finally, for the security and reliability of the application, the developer recommends adding a rating system and a report function that can send any inappropriate activities such as pranks and jokes. With these recommendations, we can improve the use and features of the mobile application.

REFERENCES

Muhammad Hakim Sharin Bin Mohd Tauhid (2015) *FIRST AID APP* (Doctoral Dissertation) Retrieved from:

[utpedia.utp.edu.my/15914/1/Muhammad%20Hakim %20Sharin_16056.pdf](http://utpedia.utp.edu.my/15914/1/Muhammad%20Hakim%20Sharin_16056.pdf)

Chel-Mari Spiesl; Abdelbaset Khalafll; Yskandar Hamamlll (2017)

Development of a first aid smartphone app for use by untrained healthcare workers Retrieved from:

http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2077-72132017000100002

Peter Kyalo King'oo (2015) *Sms Based System To Provide First Aid Information In Kenya* (Thesis) Retrieved from:

[http://erepository.uonbi.ac.ke/bitstream/handle/11295/90123/King%20oo%20%20_Sms%20based%20system%20to%20provid e%20first%20aid%20information%20in%20Kenya?sequence=3](http://erepository.uonbi.ac.ke/bitstream/handle/11295/90123/King%20oo%20%20_Sms%20based%20system%20to%20provide%20first%20aid%20information%20in%20Kenya?sequence=3)

Robert Zanner, Dirk Wilhelm, Hubertus Feussner, and Gerhard Schneider (2007) *Evaluation of M-AID®*, a first aid application for mobile phones.

Retrieved from:

https://www.researchgate.net/publication/6377052_Evaluation_of_M_AIDR_a_first_aid_application_for_mobile_phones

APPENDICES

Appendix A

Survey Questions used on Project Assessment:

1. What is your last name?
2. What is your first name?
3. Age
4. What is your current work? (Please put Student if you are a student or None if you don't have any.)
5. How familiar are you with doing First Aid treatment?
6. How much do you think the public is prepared for any accidents or injuries?
7. How much do you consider that we should have the first aider around the public areas?
8. How much are you familiar with using Ride-Hailing Applications such as Grab, Uber, Angkas, etc.?
9. How much do you think it would be helpful if we use Ride-Hailing features to first aid responses?
10. How much do you think that the Ride-hailing application could save a life considering the heavy traffic and crowded places we have in Metro Manila?

Interview questions:

Personal Questions:

1. What is your nickname?
2. Are you a trained first aider?
3. How long have you been a first aider?
4. Where do you often practice it?
5. What organization do you belong to?

First Aid Question:

1. What are the most often accidents that you encounter that are needing first aid treatment? Can you name at least 1 or 2?
2. How much time does it need to be responded to? Earliest and soonest.
3. Do you often encounter a cardiac arrest or any accidents that require CPR?
4. How much time does the victim need before his condition worsens?
5. How much time does it take before an ambulance arrives?

Application Questions:

1. Do you know any mobile application that relates to first aid? If yes, how many? Can you name some?
2. Are you familiar with ride-hailing applications such as Grab, Uber, Angkas, etc, that use a booking function to a motorcycle, and can track both locations?
3. Is the ride-hailing application helpful? If yes, how?
4. Have you ever heard of a ride hailing application that provides first aid service?
5. Do you think that application would be helpful and useful? Not as a replacement for the ambulance but as an additional help.
6. Do you have any suggestions for the application?

Appendix B

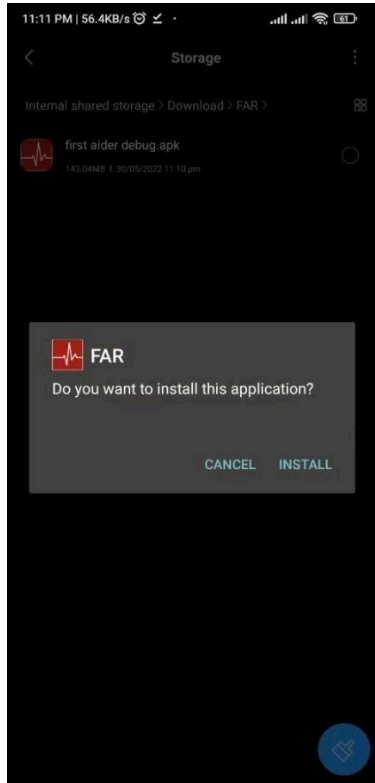
Source Code: https://github.com/dreamber23/first_aid_response.git

Appendix C

Manua- How to use the application:

A. Installation/Initial Setup:

1. Click “Install” to start the installation of the application



B. Regular User Registration:

1. Click the “Get Started” Button.



2. Select “No” when asked if you are a first aider.

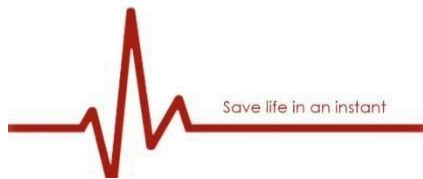


Registration

Are you a First Aider?

Yes

No



3. Type your preferred name and active mobile number then click "Submit" to generate OTP.



Registration

Preferred Name

ganda

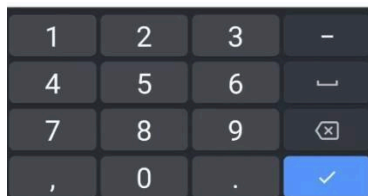
Mobile Number

09 354669081

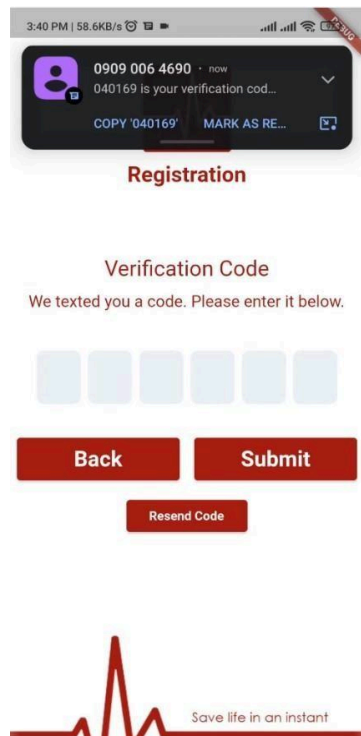
9/9

Back

Submit

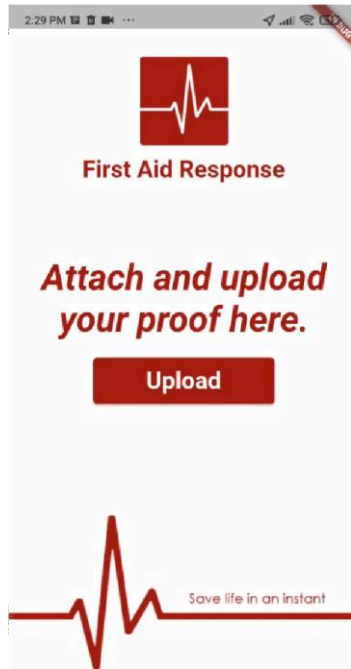


4. Wait for the OTP then type once received.



C. First Aid Registration

1. The first aid registration is almost identical to the registration process in the regular user registration. For the difference, after the OTP steps, attach the document that supports or proves that you are a registered or certified first aider by clicking the “Upload” button.



2. Wait for the upload to be finished:



3. After you upload the document, you will have to wait for the admin approval to proceed as a first aider, once approved you'll automatically be redirected to the Home page.



D. Request First Aid Response

1. Both First aider and regular users can request a first aid response if needed. To request, go to the home page. You have to hold the request button for 5 seconds.



2. Then wait for the application to find the nearest first aider available in the area.

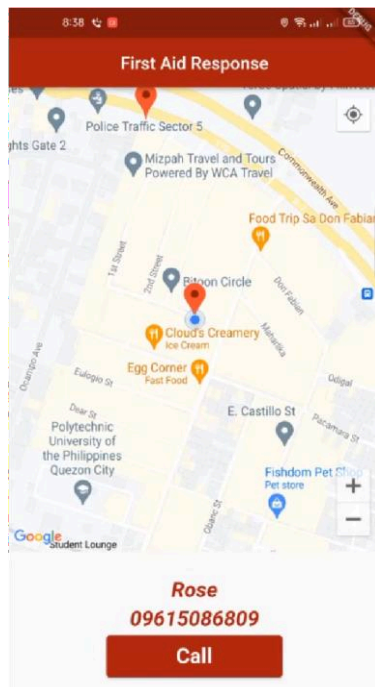


First Aid Response

FINDING FIRST AIDER!



3. Once the application found the first aider, it will automatically appear on your screen, as for the first aider, a notification will be received and the same screen as per below will be displayed.



E. Knowledgebase

1. Knowledge-based is available once you have clicked the “Do it yourself with this” on the home page.



2. Once you have opened a certain incident, an instruction will appear.

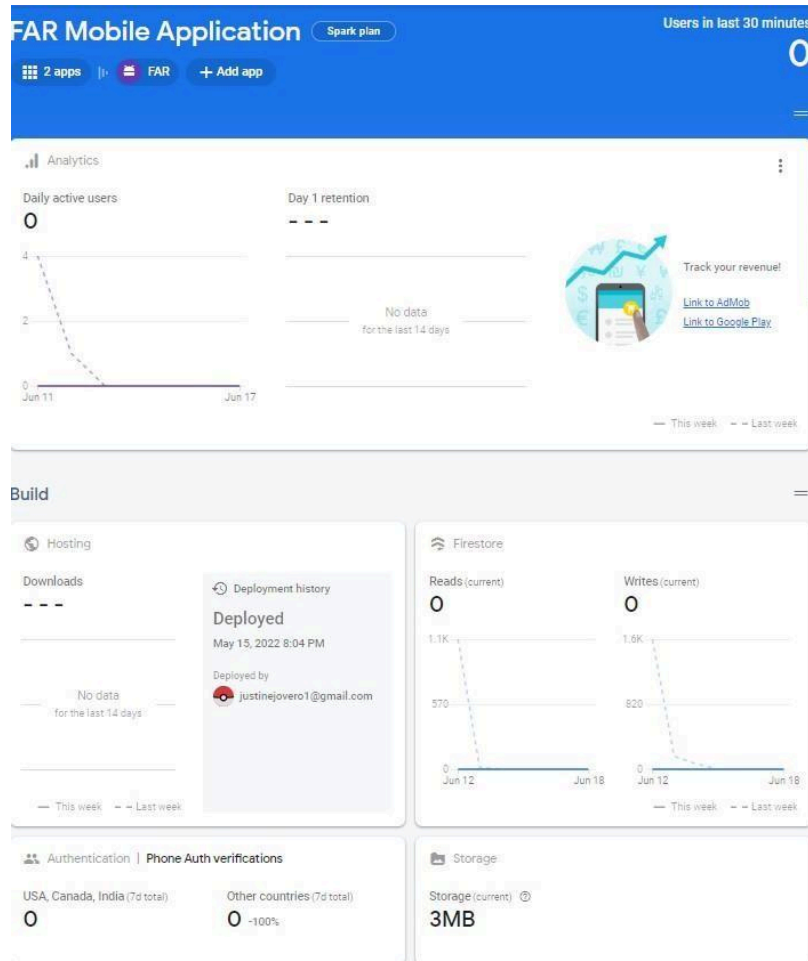


F. Accessing the Analytics Dashboard

1. For the admin, to access the analytic dashboard you have to go to the

below link under the Google Firebase:

<https://console.firebase.google.com/u/1/project/far-mobile-application/overview>

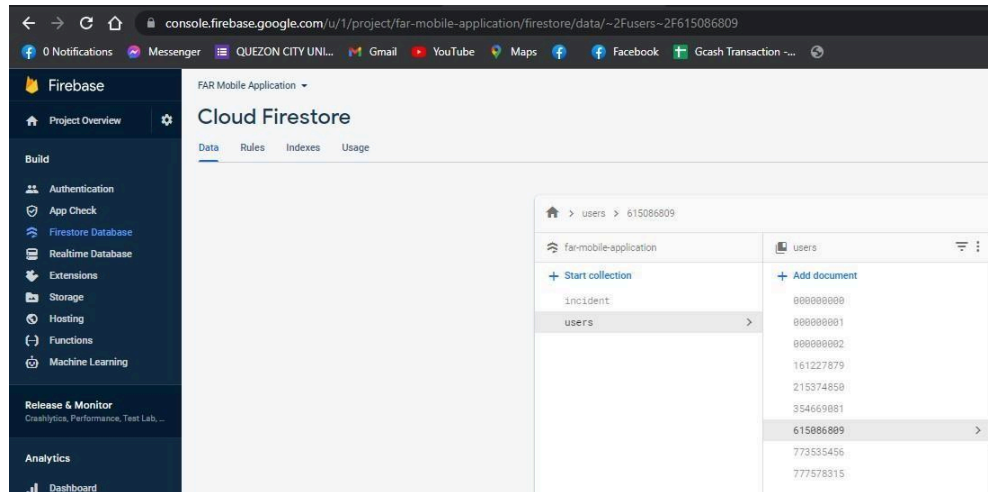


G. Admin approval

1. To approve the first aider, you have to go to the Google Firebase, click

the Firestore Database that can be found in the below link:

<https://console.firebase.google.com/u/1/project/far-mobile-application/firestore/data/~2Fusers~2F615086809>



2. Click the record you want to approve, select the `user_status`, and change it to from Pending to Active.

