USER MANUAL

Group 18
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1. Introduction

PROBLEM DEFINITON

Motor vehicle accidents can happen to anyone at any time, and the aftermath can be devastating. Even if you're lucky enough to survive without a scratch, the shock and trauma of the accident can make it difficult to think and act rationally. Unfortunately, in many cases, the time it takes for an ambulance to arrive on the scene can be unacceptably long, and this delay can be the difference between life and death. The critical minutes and seconds following a motor vehicle accident are crucial for the survival of the victims, and it is essential that first responders arrive as quickly as possible. The problem with the current system is that the response time for emergency medical services is often too slow, resulting in critical injuries or fatalities. To address this issue, a system for rapid emergency medical response needs to be implemented to increase the chances of survival for accident victims. This system should include a faster way to alert the emergency services(ambulances), a more efficient way to get the emergency vehicles to the scene of the accident, and a more advanced way for the emergency contacts of the driver to get the accident information. This will help to ensure that the right kind of help is provided to the victims as quickly as possible.

SYSTEM OVERVIEW

Our system utilizes hardware to detect potential accidents and promptly notify the appropriate parties for emergency response. When a potential accident is detected, an automatic alarm will sound in the car to alert the driver and passengers. Within 30 seconds of detection, the closest relatives of the driver will be informed, as well as the closest ambulances, both parties will also receive the GPS location of the accident. For false alarms, the driver can press the green button to cancel the emergency response. If the driver is conscious, they can press the blue button for mild accidents or the white button for severe accidents. If no button is pressed within 30 seconds, the accident will be classified as severe and emergency response will be initiated. This system aims to reduce response time and increase the chances of survival for accident victims.

COMPONENTS & USERS

- Device Holders (Primary Drivers)
- Ambulance Drivers
- Emergency Contacts of Device Holders
- Hardware Device

2. Hardware Device

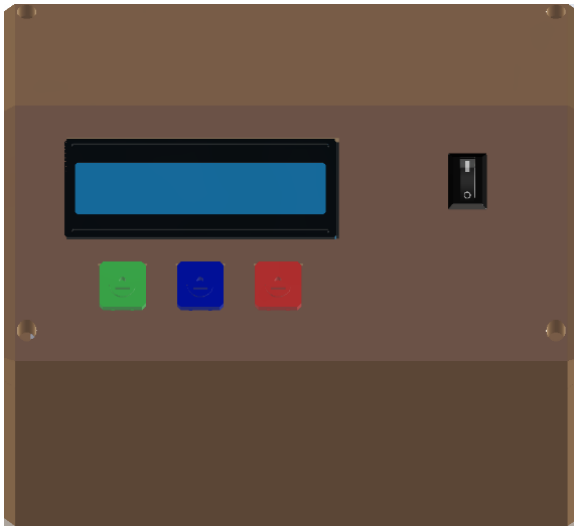

Figure 2.1

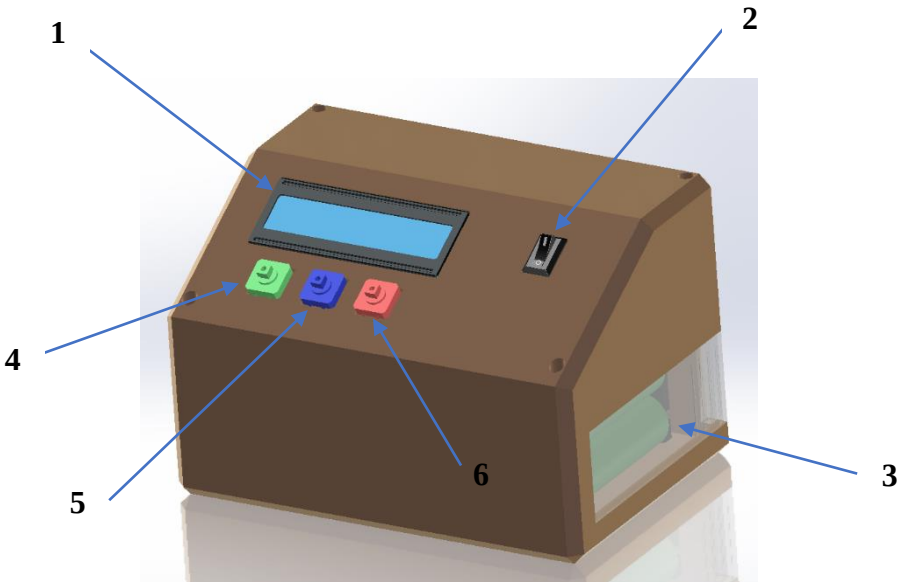

Figure 2.2

MAIN PURPOSE

The main purpose of the hardware is to detect accidents. It uses sensors to do that. The hardware screen will provide necessary information to the user about its state. The three buttons in the hardware are used to indicate the state of an accident. Green being a false alarm. Blue being mildly critical accident & white being a serious accident.

IDENTIFICATION

1 → LCD Display

2 → Switch

3 → Battery Opener

4 → Green Button (Indicating False Alarm)

5 → Blue Button (Indicating Mild Critical Stage)

6 → Red Button (Indicating High Critical Stage)

HOW TO USE

STEP 01: Turn ON the device using the switch. Then the “PROTEGO” text will appear on the lcd display.

Figure 2.3

STEP 02: Wait until the GSM, GPRS and GPS initializes. It will take 2-3 minutes.

Figure 2.4

Figure 2.5

Figure 2.6

Figure 2.7

STEP 03: Once all components are connected, “Components-Setup Completed” message will appear.

Figure 2.8

STEP 04: Once the display shows the below message, then the device is ready to use.

Figure 2.9

STEP 05: Once an accident is detected the below message will be displayed along with its magnitude.

Figure 2.10

STEP 05: Then the device asks you to enter your critical level. The *GREEN* button means a false alarm. The *BLUE* button indicates that the accident was mildly critical, and the *WHITE* button indicates that the accident is highly critical. If you do not respond within 30 seconds, the accident will be automatically assumed as highly critical.

Figure 2.11

STEP 06: If the *GREEN* button is pressed, then the below message will be displayed in the screen. In this case no data will sent to the backend.

Figure 2.12

STEP 07: If the *BLUE* or *RED* buttons are pressed, or no button is pressed until the timeout (device will take this as the *RED* button is pressed), then the current latitude and longitude will be sent to the server with the other relevant details. Once, the data sending is over below message will be displayed.

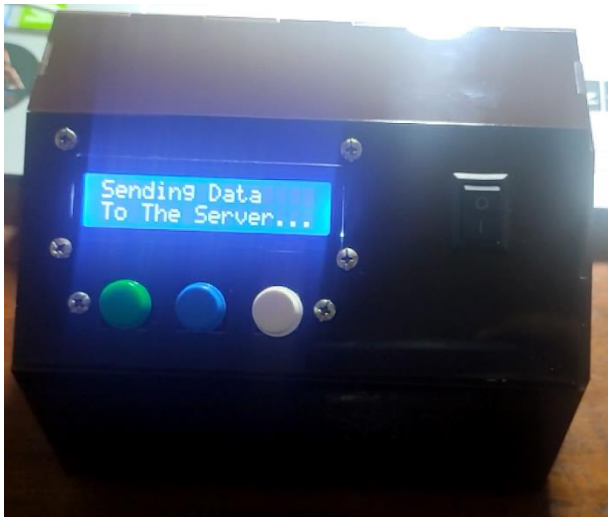

Figure 2.13

Figure 2.14

3. Mobile Application

Figure 3.1

Figure 3.2

MAIN PURPOSE

The main purpose of the mobile application is to handle users and display the relevant information. If you are an end user of the system, you can use the mobile application to get the necessary information regarding an accident.

SIGN-UP

At the outset you'll see the starting page of the application. There you can either sign up to the system or log in if you are already registered. For signing up you'll have three options. You can either sign up as a *DRIVER* (*Figure 3.3*), an *AMBULENCE* (*Figure 3.4*), or an *EMERGENCY CONTACT* (*Figure 3.5*). In all of these cases, you'll have to add the relevant information. When you are entering passwords to the system, they have to be at least 5 characters long. The entered telephone numbers should have 9 or 10 digits. The email address has to be in the proper format.

If you are signing up as a driver, you'll have to enter the unique device number given to you to sign up along with the other details.

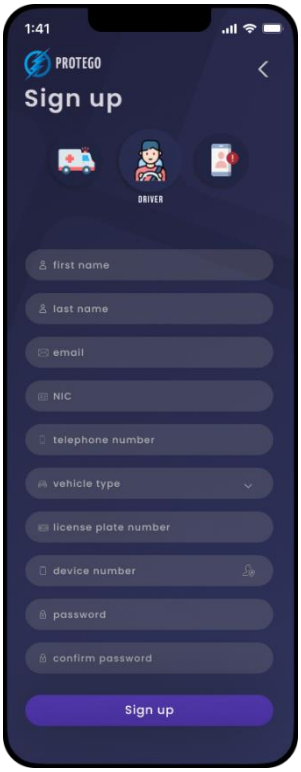

Figure 3.3

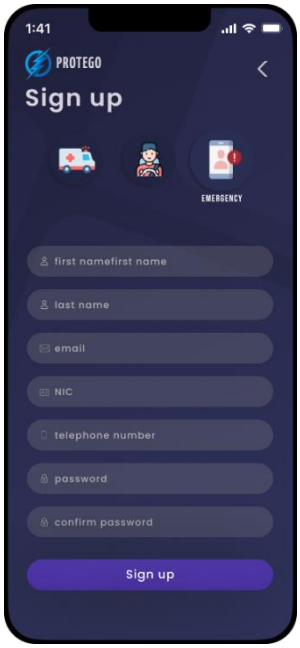

Figure 3.4

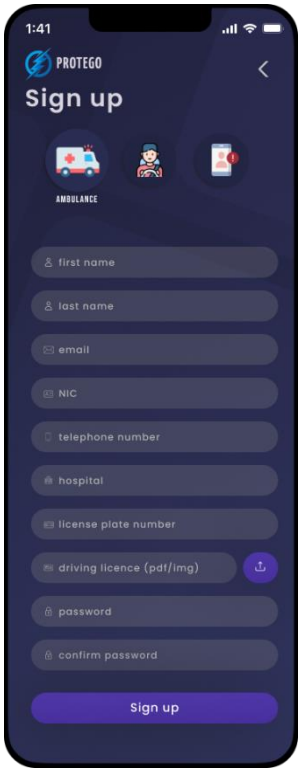

Figure 3.5

DRIVER

First you have to configure the device with the mobile application. For this you'll have to first sign up as a driver to the system (Figure 3.3). You'll have to enter the unique device number given to you to sign up along with the other details. Once you sign up as a driver, you'll have to ask the emergency contacts to sign up to the web application. Then you should log into your own account and add the emergency contacts to your account. Here you'll have to add the Telephone number that the emergency contact used to sign up to his/her own account. Once you add your emergency contacts your mobile app interface will be like in Figure 3.7. Then you are good to go!

If you want to change your account settings, you can navigate to the settings windows (Figure 3.8) using the settings icon which is at the right bottom corner.

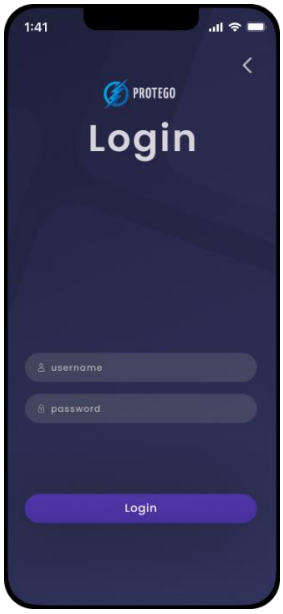

Figure 3.6

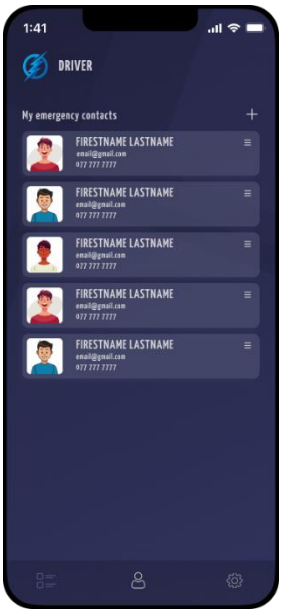

Figure 3.7

Figure 3.8

AMBULENCE

Sign up as an ambulance driver by selecting the icon on the top left corner (Figure 3.5). Once an accident occurs, you'll get a notification with the details of the accident on your app screen (Figure 3.10), you can slide the bar at the bottom of the screen to pick up the accident. The direction to get to the accident location will then be shown on a map. Once you drop off the patient at the hospital you should press a button at the bottom of the screen to indicate that the incident was successfully handled.

If you want to change your account settings, you can navigate to the settings windows (Figure 3.11) using the settings icon which is at the right bottom corner.

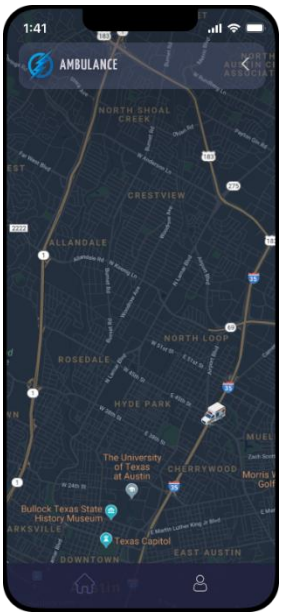

Figure 3.9

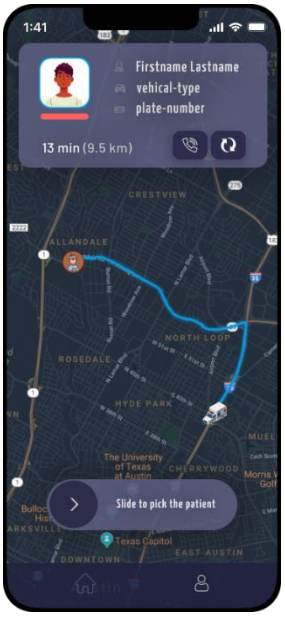

Figure 3.10

Figure 3.11

EMERGENCY CONTACT

Once the primary user asks you to sign up to the system, sign up as an emergency contact by selecting the icon on the top right corner (Figure 3.4). Then pass along the telephone number you used to sign up as an emergency contact to the Driver (Primary user).

Once an accident occurs, you'll get the details of the accident including the location of the accident on your app (Figure 3.13). You'll also receive an SMS message to your registered phone number with the accident details.

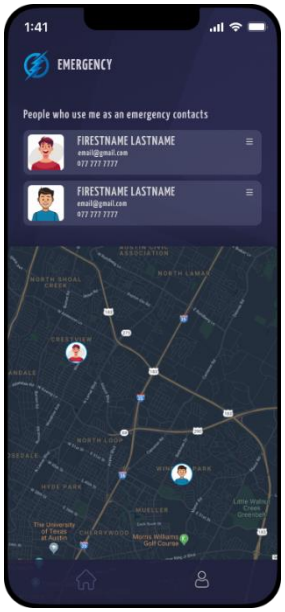

Figure 3.12

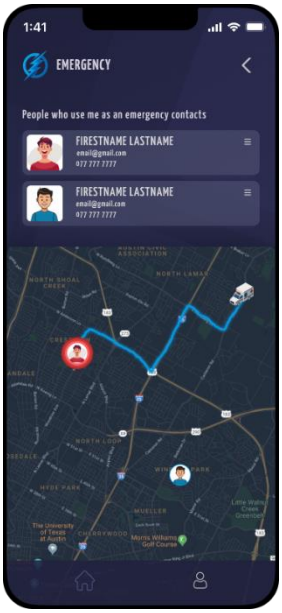

Figure 3.13