

UNIFIED ASSIST: AN INNOVATIVE MOBILE APP FOR ENHANCED EVERYDAY ASSISTANCE, FIRST AID, SAFETY, AND SECURITY

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ABSTRACT

Safety and security are important to every people. When our children or neighbor are going to a trip or travel, they must use this application to avoid harm or any danger that possible happen anytime. This project aims to develop unifiedassist: this research is a mobile application with a visually impaired feature that can be used by users with astigmatism and presbyopia because if there's something block your way, the application sends notifications and vibrate to warn the user. Also, there is a security feature that can be used to avoid the harm that can happen anytime. And has a real time location tracker to track senior anytime. This application has everyday assistance that you can set up for daily needs. It also has a first aid feature that will suggest that what you need to do in an emergency. And there are other features that we can use for our safety. The main goal of this research is to help all users to avoid dangers and to protect all peoples from any kind of tragic even from malicious people.

Keywords: *BS Computer Science, innovative, assistive technology, first aid, safety and security, Philippines.*

INTRODUCTION

The goal of this study was to figure out how well visual maps help visually impaired people in enhancing spatial awareness [1]. Application with visual impaired features can help blind people to avoid any possible dangers [2]. If the user of this application is old and has blurred vision, this application with visual impaired will help him his daily activities [3]. The difference of this application with visual impaired is that anyone can use it, it can detect if there is something blocking your path while you are walking [4].

Likewise, it has an assistive navigation feature that automatically sends text or call to the nearest police station or anything that can help you if you are close to danger [5]. In this day there are many bad people and kidnapping children, through this application you can easily find the location of your child or relatives because it has a location feature that will automatically send the exact location to the contacts placed in his mobile phone. If you are busy with housework and you have limited time to watch your children, this application will help you because it has a visually impaired feature that you can use if your children are mischievous [6]. This application can automatically send reports to the authorities when you have concern or emergency purposes [7].

Moreover, this application has assistance feature that can provide a first aid suggestion to apply [8]. Security features will help you in daily work activities or even in housework [9]. This application also has voice recognition that you can use in an emergency [10]. Due to the overwhelming accidents that happen around the world, all people fear for their safety, this research and target system will help to reduce their fear [11]. The value of safety info in management safety and the parts of safety information procedure, like analysis, interpretation, and learning, are built into every part of safety management, like predict safety, safety decision, and safety action [12]. Every aspect of safety management, including safety prediction, safety choice, safety actions, and danger

management, is designed with the value of safety information and the different stages of processing safety information, which includes examination, interpretation, and learning [13]. A process or set of activities that generates safety. Its main goal, just like general safety methods, to safeguard health, mental health, and property. It also aims to assure target function success. Setting up a safety management system is one way to change the risky habits that are caused by near-miss accidents [14].

The goal is to manage safety in a proactive way by identifying possible hazards and their risks and then taking steps to reduce those risks before an accident happens [15]. These sources don't show records of fixing safety dangers or the number and types of safety risks, which are important to know to stop safety accidents from happening again [16]. Accident prevention study has shown that accidents are caused by a variety of factors and that there are many safety controls that can be used to stop accidents from happening again [17]. Argue the case that workplace health and safety management systems may help cut down on injuries and illnesses if they are part of a larger risk management plan [18]. Involved fatalities, making it the second most common cause of deaths or crashes [19]. Having a system for safety management is one of the best ways to cut down on accidents in a construction industry [20].

1.1 Project Context

Office of Senior Citizen Affair Republic Act No. 9994 Section 6 – An act granting additional benefits and privileges to Senior Citizens, further amending Republic Act No. 7432, as amended, also recognized as; “An Act to Maximize the Contribution of Senior Citizens to Nation Building, Grant Benefits and Special Privileges and for Other Purposes” also known as the “Expanded Senior Citizens Act 2010.” Senior citizens in the age of sixty- seventy-five (60-75) years of age they experience or empower to feel maturing in their life. Disabilities of the elderly Without adequate tools and resources,

astigmatism and presbyopia individuals may find it particularly difficult to navigate their surroundings and ensure their safety. OSCA they give instructional exercise or consultancy administrations, addresses on specific field like farming, wellbeing, ecological security.

Safety is one of the essential requirements in our day-to-day existence. In the past couple of months there a case in Tagum City that two ladies established dead in certain spots in Tagum, a few ladies are missing. Government officials were also scared about the situation, which made people worry more and more about it. Existing security estimates in the nation are missing the mark because of the expanded number of cases. Moreover, these security measures are not effectively available to most of the populace and are tedious which makes it wasteful during crises. The lack of effective and readily available safety measures makes visually impaired individuals even more vulnerable.

Seniors with vision impairments struggle with reading and writing as part of their everyday lives. When they do these things, they need help of some kind to avoid making mistakes or getting hurt. These people's independence and quality of life could be jeopardized if they don't get help, they need to overcome obstacles, make mistakes, or even get into accidents. There is a limit, zing need to address the current holes and restrictions in assistive innovations for outwardly debilitated grown-ups and a smoothed out and natural arrangement that works with continuous area sharing, crisis contact, the executives, and occurrence revealing limits the capacity of people to guarantee their wellbeing and get quick assistance when required.

Based on the issues outlined above, researchers developed a program for senior citizens to look for external obstacles and ensure the safety of all Tagum City seniors. Experts propose an android application to examine a letter or anything that can imagine the application. A safety feature for individuals who feel threatened

or surrounded by evil individuals. A portable application that takes care of everything a customer needs during a crisis, including following, warning buttons, direct calls to important experts, prompt report sending, and more.

1.1 Purpose and Description

The purpose of this study is to develop and build a mobile app that has safety features, both for visually impaired individuals and women, in a user-friendly interface when people are outside their houses such as automatic calls to the users contact list or relevant authorities, alarm generation buttons, and more. This application will prioritize ease of usage, efficiency, and reliability that will provide its users with greater independence, accuracy, and confidence.

It would also include the following systems, real-time location tracking, emergency contact management, panic button, incident reporting, user-interface and navigation, voice recognition, text-to-speech, screen reader, and more. This mobile application will reassure its users about their safety by obtaining immediate help needed during potential safety concerns or emergencies with the use of advanced accessibility features, intuitive interfaces, and personalized settings.

1.2 Objectives

1.2.1 General Objective

The main objective of the project is to plan and develop a one-stop mobile application for enhanced everyday assistance, first aid, safety, and security, targeting visually impaired people and women, to reassure its users about their safety and provide them with the independence they want.

1.3.1 Specific Objectives

1.3.1.1 To generate first aid tips to the user and give them knowledge of the things they need to know.

1.3.1.2 To develop a user-friendly interface that is easy to navigate.

1.3.1.3 To call, send messages, or notify relevant authorities or someone from the users' contact list when the 'emergency' button is tapped.

1.3.1.4 To send users' exact location to relevant, families or someone from their contact list when the 'emergency' button is tapped.

1.3.1.5 To alarm immediately when the user taps the 'panic' button.

1.3.1.6 To send notifications and vibrate to warn the user when an object is blocking the way as a potential threat to the user.

1.3.1.7 To be able to read a text with a configured switch that has a control if the user's enable it or not.

1.3 SCOPE AND LIMITATIONS

This capstone study entitled Unified Assist: An Innovative Mobile App for Enhanced Everyday Assistance, First Aid, Safety, and Security primarily focuses on security of every user of this application and help them for daily assistance, first aid and safety. The proposed system aims to provide a unified-assist with visual impaired system that can help children and even blind people avoid dangers. With this project, all of the needs for everyday assistance will be provided. Allowing users to set the system for their needs and more. Once the system is applied, users don't have to worry about any danger because this helpful system that will help them prevent it. However, the limitation of the application is that it is internet dependent. This application cannot be used when there is no internet connection or offline. This app has limited coverage area, it can't be used in places or areas that are not covered by the location. This application will not work if the location service of the mobile device

is not turned on. This application works only on android and iOS mobile devices only, it cannot be used on laptop or computer. This application cannot save previous incident reports, nor can it save incident reports from other areas that are not covered. This application will only work here in our country, and it is not possible in other countries because it is not covered. This application needs load balance to make calls or send text message in case of emergency. And last this system has no administrators to manage system maintenance and future updates.

2. Conceptual Framework

The rapid advancement of mobile technology has revolutionized the way we interact with the world around us. With the increasing reliance on smartphones, there is a growing need for comprehensive mobile applications that can aid, promote safety, and offer security to individuals in their everyday lives. This conceptual framework describes the development and functionality of "Unified Assist," an innovative mobile app designed to enhance everyday assistance, provide first aid support, and ensure safety and security for users.

METHOD

The researcher provides an explanation for the choice of research design employed in pursuit of the objectives of this study. In addition, a comprehensive description of the data collection instrument and methods utilized to conduct this study are presented. The researcher also discusses on how the data were analyzed. The system requirements that were adhered to during the process are also discussed.

The Agile Software Development Methodology will be applied to the study. It enables quick response and gives the researchers control over system development. Testing will be used to filter the system at the conclusion of each sprint. Agile helps to lower

risks by assuring proper planning, proper job and resource allocation, and efficient forecast methodologies.



AGILE SOFTWARE DEVELOPMENT

Plan

Agile process is a structure to manage projects that divides the work into a number of adaptable phases, known as sprints. In this article of Agile project management gets a high-level overview, along with some frameworks to choose the best one for the team.

The researchers conducted a report about issues happened and make a system to solve this kind of cases in the city. By using this system, you can avoid in any danger and stay away from harms. The proposed system is user friendly and can work in any kind of android mobile phones so everyone can use the system without having a problem on it.

Design and Develop

Users feedback was noted and making the prototype of the project using developer tools. Developers created prototype with distinct functions and features. The clients examined the prototype and decided what to discard and what to keep. On this phase it also includes the discovery and elucidation of the attributes of dataset.

The researchers applied cross-platform. Developing applications for multiple platforms in a shorter time frame. During this phase, the researchers utilized the software to facilitate the development of the proposed system:

1. Kivy framework is an open-source Python framework for developing multi-touch applications, including Android apps. It provides a platform-independent way to build user interfaces and supports various operating systems, including Android. With Kivy, you can write your app's logic in Python and use Kivy's APIs to create the user interface.
2. Python is a high-level, it is a programming language that is widely known for its characteristics of simplicity, readability, and versatility.
3. PhpMyAdmin is a web application that lets you manage databases and perform heavy data transactions.
4. Android Studio and combination of python structures, create the best application. It includes code completion, syntax highlighting, widget editing, run & debug, and more. It will assist test the app without the physical device.

Test

In this current phase, exploratory testing process was used by the researchers in order to enhance their ability to adapt to changes. They are going to conduct user testing to test the suggested or proposed system. In this, in order to assess the compatibility of the application and figure out its overall quality stage, physical devices

of several different versions were implemented. Testers learn the expected features of the application within the process of discovery. The users or testers shall try to learn the system and perform the test plans according to the users' discoveries.

6. Release

The application went through testing and has been identified that there are not any issues. Within this phase, the researchers will begin the process of preparing for the release by starting from the initial stages. They will create a workflow or checklist that can be applied as a guide throughout every step of the procedure. The system will be executable software then it will be test once more. This continuous process continues until the release is cleared. The researchers will guarantee that the application is working well and ready to use. In the procedure of installing the system, the installation and the instructions for the user will occur at the same time.

3.6 Feedback

During this stage, every edge of the system was inspected by the researchers. Observation was done after the release of the system. They communicated with the users. The researchers analyzed the system and verified if it was working and met the objectives and requirements. There was a checklist and questionnaire administered to guarantee the actual and proper way of reviewing the system. Also, the feedback was documented to prevent the repetition of complications.

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