**SagipPinoy: A WEB AND MOBILE-BASED PHILIPPINE EMERGENCY QUICK RESPONSE PORTAL.**

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**Abstract**

SagipPinoy: Web and Mobile Based Philippine Emergency Quick Response Portal is an application that can provide interaction between the concerned citizens and the emergency units. This application can help Filipino citizens in case of emergencies, disasters and calamities such as car accidents, crimes, earthquakes, typhoons, fire accident, and just a click of the fingertip emergency units will be aware of the emergency being triggered by the users. This study aims to design and develop an application that can locate nearest emergency units; to send location details to the emergency units and to broadcast alarm to at least five nearest emergency teams and for the emergency units they can locate the accident area, they can also send notifications to the victims that they are responded. The users will be the Filipino citizens and the Philippine response teams. They will be benefitted in a way that their request will be easily responded by the emergency teams and their lives will be saved by them. The softwares to be used to develop will be Notepad++, BootStrap, Adobe Photoshop, PHP, HTML, WampServers in web side, while Java Eclipse, Android API, SQLite. Integration testing, test plan, load testing and stress testing is used to test the reliability and acceptance of the said proposed study.

**Keywords**

Information technology, Emergency portal, Philippine portal, Disaster portal

**Introduction**

Technology has already come a long way. Several technological advances have always tried the minds of men. But one thing is for sure, technology has always been there to help everyone in their everyday situations. In fact, technology has given everyone the power to support the rapidly growing needs in order to survive.

As one may survive from his day to day living, he is somehow prone to accidents. Accidents are situations that are unpredictable. When an accident happened, there are usually concerned citizens, but the problem sometimes is to who to contact with and where to bring the victim. With these cases to happen people then used technology. Technology like phones and other devices, so as to seek for help and aid the victim.

The android phones have some capabilities that can tracks mobile users location for all sorts of useful things-driving navigation, updating the weather forecast, and even live traffic updates. Location tracking actually provides lots of useful things to mobile users, but while Google and Apple collect all that data anonymously, its still stored on the phone. Location tracking can be a great thing- in fact; they think it is one of the best things about smart phones. Android phones features capabilities like an unlock pattern for security and a status bar enabling access to missed calls, for example. Also highlighted were zooming capabilities, a compass mode, site navigation, and access to Google Maps. And a features such as, handset layouts, storage, connectivity, messaging, multiple language support, web browser, java support, media support, streaming media support, additional hardware support, multitouch, Bluetooth, video calling, multitasking, accessibility, voice based features, tethering, screen capture and external storage.

Some other countries make some of these emergency hotlines to provide people who need help just like the country USA. They have an Auto Accident Apps the first and only mobile phone application to offer instant, live assistance to accident victims- 24 hours a day, seven days a week. www.auto-accident-app.com

Android Apps Emergency and Disasters - Apps includes fam-
ily messenger, life 360 family locator, GPS tracking pro, First
Interface a apps that can stores important information for first
responders and hospital staff to use in case of an emergency
involving you www.play.google.com

Critical Care ACLS Guide Interface - makes it easy for physi-
cians, paramedics and nurses check ACLS drug doses, in-
terpret EKGs, look up patient medications, and much more;
Cancer Emergency Response Tool- allows cancer patients to
rapidly and effectively manage chemotherapy toxicity and
disease-related problems which may require urgent hospital

Most of the people nowadays are having android phones and
they are bringing it everywhere they go. Anywhere accidents
may happen then we are not knowledgeable to the emergency
hotlines and nearest emergency units. This proponents came
up an idea that can help and can give solution to a problem that
can locate nearest emergency unit using the android phone ap-
plication and can contact to emergency hotlines that may give
response to the victim/ concerned citizens.

The proponent aim to develop a Web and Android based
Philippines Emergency Quick Response Portal that would
allow the users to access the nearest emergency hotlines. The
android based of this project will give persistent way to the
user in terms of accessing emergency hotlines.

Philippine Emergency Quick Response Portal is a system
which is capable to call emergency hotline and can locate
nearest emergency units. The system is designed to iden-
tify/locate the nearest possible government agencies such as
police station, fire station, hospitals or other private sectors.

This system will be used to facilitate the transactions and the
communications towards the persons and the emergency re-
sponse team. This system is designed for Philippine setting
with the hope that someday this system may be used by the
government in helping Filipino people who need immediate help

Objectives of the Project
The main objective of the study is to design and develop a
website and android application that supports quick response
to emergency.

Specifically, the system aims to achieve the following ob-
jectives:

1. Develop a web application:
   (a) for the SagipPinoy Management to manage emer-
gency units.
   (b) for the Emergency units and ordinary users to reg-
ister and download SagipPinoy Mobile Application.

2. Develop a mobile application:
   (a) for the ordinary user to:
      i. find nearest emergency units
      ii. broadcast his location map to the nearest at-
most five emergency units in case of emer-
gency
   (b) for the emergency units to:
      i. view location map of the broadcast emerg-
ency
      ii. confirm or verify received emergency alert
      by calling or sending SMS to the SagipPinoy
      user broadcasting the emergency.

Scope and Limitation of the Study:
Only registered emergency units are accessible in finding near-
est emergency units.

Only emergency unit can locate the broadcast emergency.

This application is intended for android mobile users only.

Broadcasting emergency is only possible if the mobile is ca-
pable of sending SMS. (No Mobile Load, No Broadcast)

Emergency unit registration is not verified directly by Sagip-
Pinoy application, thus if found valid, SagipPinoy manage-
ment has to confirm it before they can download the applica-
tion.

This study will focus on designing and developing a system
entitled Web and Mobile based Philippine Quick Response
Portal that will help the persons who are involved in an acci-
dents.

This study is intended only to the android mobile users hav-
ing the application and who have accounts in the portal. The
application is based and applicable only in Cebu area since
resources and means are limited. Limitations also involved in
users cell phone load in calling emergency hotlines.
Compatibility.
The application is intended for Android OS Gingerbread Version (2.3.x). The proponents will focus on developing the application for the said version for some limitation. Objectives may not be achieved when developing it for the latest version of android. However, after developing a successful application or the said version, the proponents will test the application on other versions of android, so as to ensure that the application be fully functional.

Security.
1. The application is visible in Running application list and cannot be hidden.
2. The icon of the application must not be hidden from the main application list of the android phone for quick access.
3. Warning notice is visible if user needs to update number. Updated numbers are provided ones accessed in the portal.

Usability.
1. The application must only be used by a person who wants help and call the emergency units.
2. The application on the android phone needs an internet connection to be notified by an emergency numbers.
3. Application may consume the phones battery life.

Significance of the Project.
This study is expected to develop an application to help others in need of assistance in any emergency situation.

Mobile Phone Users.
The one who are really benefited in the study, for they can directly access emergency hotlines in an emergency situation. In a manner, victims will be ensured that help/ assistance will be provided.

The Government.
Government agencies stored to gain from this study because its result will provide them information and easy access on emergency, accidents or bad elements in the society. Problems can then be easily solved. Safety and Security among the people will be ensured.

The Researchers.
This study will help the researchers to have an opportunity to pursue the said study to be very useful for the public safety of the mobile users or citizens in the country.

The future Researcher.
The proposed study will be a big help to future researcher, in such a way that they can utilize the results of this study should they pursue a study related to the researchers study which can also help the public.

Review of Related Literature and Studies
The study 117 (emergency telephone numbers) is the national emergency telephone number for the Philippines. It is managed by the Department of the Interior and Local Government (DILG) and is also referred to by its official name, Emergency Network Philippines (ENP). Colloquially, it is also called Patrol 117, the name used by the Philippine National Police, where the number originated. It is the only emergency telephone number in the world that is accessible through both voice telephony and text messaging. Since its inception in 2003, 117 call centers nationwide have handled some 15 million calls. However, the majority of 117 calls are prank calls, leading the DILG to urge local government units to issue ordinances penalizing those who make hoax 117 calls.

At the time, 117 was solely used in the Metro Manila area by the Philippine National Police for the reporting of ongoing crimes as part of a program called the "Patrol 117 Street Patrol Program" in cooperation with the Foundation for Crime Prevention.[1] Efforts to expand the capabilities of 117 began in the 1990s, starting with the addition of emergency medical services to the scope of 117 in Metro Manila through a private-sector initiative called Project EARnet (Emergency Assistance and Response network).

With the exception of the call centers for the Ilocos Region, Metro Manila, CALABARZON, MIMAROPA and Northern Mindanao, 117 call centers are usually located in a given region's regional center. Due to its non-contiguity, the Autonomous Region in Muslim Mindanao is the only region without an independent 117 call center, and as such, 117 calls made in the ARMM are routed to the 117 call center closest to the area where the call is originating from. This may either be the 117 call center in Zamboanga City (for calls originating from Basilan, Sulu and Tawi-Tawi), Malaybalay City (for Lanao del Sur) or Koronadal City (for Maguindanao and Shariff Kabunsuan).

When a 117 call is made from a mobile phone, the call is automatically routed to the nearest 117 call center. However, 117 as an emergency number is not registered on most mobile phone models or SIM cards. Because of this, the ENP supports, as a contingency measure, the routing of 1-1-2 and 9-1-1 calls to 117 call centers in the event of an emergency. 117 call centers are also capable of receiving text messages sent to 117. This service is known as "Text 117". However, texts sent to other emergency numbers do not route to 117.

www.wikipedia.org
Fire-fighter
The range of emergency tasks covered by fire-fighters obviously includes preventing and combating fire, but also includes tasks such as assisting in major transport accidents (aviation and maritime accidents, car crashes involving trapped people), industrial accidents, natural disasters, terrorist attacks or civil riots, or when special technical help is needed. Fire-fighters often also have supplementary training as emergency medical technicians or paramedics.

In many countries, professional fire services coexist with volunteer fire brigades. Volunteer fire brigades are needed in order to ensure rapid help in regions in which a professional fire brigade is not maintained, or where the manpower of the professional fire services is not sufficient. In Germany, legislation generally makes provision for professional fire brigades in big and medium-sized cities (obligatory in cities with 80,000 100,000 inhabitants). However, career fire-fighters often need the assistance of volunteer fire-fighters, and these generally outnumber the professionals. There are 100 professional fire services employing 27,600 career fire-fighters, against 23,000 volunteer fire brigades which can call on 1.3 million volunteer fire-fighters.

Emergency medical service
Emergency medical staff (emergency medical technicians, paramedics and nurses) and emergency physicians respond to all kinds of emergency call-outs where people are injured or in need of medical help. In the case of emergency call-outs, they must be at the scene within few minutes, fulfilling highly time-critical tasks (Behrendt, 2008).

In 2000, Germany had more than 17,000 specialist emergency physicians and some 32,000 full-time paramedics (Behrendt, 2008). The tasks of Germany's paramedics include the moving of sick or injured people and the provision of emergency aid (Behrendt, 2008). Almost 10 million rescue service call-outs occur each year. (Jo, 2000, cited by zur Mhlen, Heese and Haupt, 2005). Most of these involve transportation of patients that are not in a life-threatening situation. Only 17

Police
The main task of police officers is to ensure the internal security of a country and to protect the public. This includes ensuring civil order and law enforcement (ILO, 2009). The police mainly provide protection against danger and criminality, and ensure road safety. In addition, they are generally charged with border defence on land, air and water, and monitor train, air and sea safety. Cooperation with politicians, relevant groups or institutions within society is crucial. Whereas police control centres and police officers on patrol or in police stations respond to the needs of individuals, special police units also exist which can be called upon by governments to ensure safety under special circumstances. In major incidents involving the injury or traumatisation of persons, the police are also in charge of providing help for victims. Police officers are also charged with notifying families of deaths and admissions to hospital, and with giving testimony in courts. In case of major incidents or disasters, they also safeguard the disaster site, regulate traffic and enforce mandatory measures (Ministry of the Interior, Lower Saxony, Germany, 2009). 266,000 police officers were employed in Germany in 2009 (Bundesministerium des Innern, 2009). In England and Wales there are (in 2010) 143,734 police, including 33,376 officers working for the Metropolitan Police the largest employer in London (Association of Police Authorities, 2010). The number of police officers on operational duty in Finland was 7,591 in 2007. This is equivalent to one officer per 675 citizens (Ministry of the Interior, Police department, Finland, 2007). The Finnish police receive around 1.1 million emergency calls a year which equates to 45

Emergencies and disasters
Occupational health and safety risks for the emergency workers presented in this report are mainly related to major negative events, which can be described as disasters and emergencies. Emergencies occur more frequently than disasters, although they also require appropriate and immediate action and might in the event of a failure of emergency services to respond lead to a disaster. World Health Organisation (WHO, 2011a) defines an emergency as a state[s] in which normal procedures are suspended and extra-ordinary measures are taken in order to avert the impact of a hazard on the community. Authorities should be prepared to effectively respond to an emergency. If not properly managed, some emergencies will become disasters. According to the World Health Organisation a disaster is defined as: an occurrence where normal conditions of existence are disrupted and the level of suffering exceeds the capacity of the hazard- affected community to respond to it. Disasters can be of natural origin (floods, seismic events, hurricanes, forest fires), caused by industrial accidents (nuclear accidents, release of chemicals, mining accidents), caused by transport accidents (major car crashes, airplane crashes, rail accidents), be a consequence of criminal or terrorist attacks, or undesired events which may happen during massive public events (fire, crowd panic). The summary of Norris et al. (2002) is that all types of disaster share in common () [a] potential to affect many persons simultaneously and to engender an array of stressors, including threat to ones own life and physical integrity, exposure to dead and dying, bereavement, profound loss, social and community disruption, and ongoing hardship.

Transport accidents
In 2005, the European transport network consisted of 4.5 million kms of road, railways, inland waterways and oil pipelines (Eurostat, 2009). In EU-27 in 2005 49 km/1000 km, motorway density was 14 km/1000 km, inland waterway density 9 km/1000 km and oil pipeline density 8 km/1000 km (Eurostat,
From 2000 to 2005 motorway density increased by 12%

Related Studies
Philippine Emergency Numbers is free for anyone to use. It has been developed for quick and easy access to contact numbers of different agencies in case of emergency.

If one finds a contact number that is no longer working nor updated he will just see it in the portal and the contact details.

Auto Accident App is the first and only mobile phone application to offer instant, on-the-scene, live assistance to accident victims. Even better, our state-of-the-art App also provides one-button access to emergency personnel and step-by-step guidance through the information gathering process to ensure that no critical information or evidence is missed.

Use our Accident Recording System to easily document every detail with pictures, audio witness statements, injury charts, car damage picture documentation and much more. Auto Accident App creates a comprehensive accident report, with attached pictures, and composes the information into a single email that you can send out to all necessary parties (such as Legal, medical insurance company etc).

Registration is simple and quick instead of manually entering all kinds of details about your driving info, simply take a picture of your driving documents (drivers license, vehicle registration and insurance), and you are done.

This application aim is to provide alternative, simpler and lightweight interface to the product. The core of the project will be the Android based application with One touch access to information you must provide to the other driver and emergency personnel (insurance ID, license plate, automobile make and model, medical insurance info. etc.).

Another example is the ICE: In Case of Emergency it is design to store medical info for the entire family, including vaccinations and medical history. Optionally share some or all family info with ICE. When info is shared with ICE, an additional Family Info category is added following Medications that will allow you or emergency service providers to access the shared info.

This project aim to stores important information for first responders and hospital staff to use in case of an emergency involving you: A list of people to call – can call directly from the app, Insurance information, Doctor names and numbers – can call directly from the app, Allergies, Medical Conditions, Medications, Any special instructions or other information you wish to provide.

Another app that also focuses on immediate access to Critical information covers use of airway devices such as the Combitube, LMA, and King LT Airway, a complete list of emer-
gency and ACLS drugs. The Critical Care ACLS Guide for Android makes it easy for physicians, paramedics and nurses check ACLS drug doses, interpret EKGs, look up patient medications, and much more.

Figure 4: Critical Care ACLS Guide Interface

An example of this would be the Cancer Emergency Response Tool allows cancer patients to rapidly and effectively manage chemotherapy toxicity and disease-related problems which may require urgent hospital assessment.

CERT covers 7 of the most serious medical complications and toxicities encountered by cancer patients. It assists appropriate decision making about when to seek medical advice, and speeds direct access to the local Cancer Centre when potentially life-threatening or urgent symptoms are present.

Figure 5: FAMILY GPS Tracker Pro

An example of this would be the Family GPS Tracker Pro. Family GPS Tracker keeps ones family safe. Using GPS technology, the Family GPS Tracker app gives the exact location of family members and alerts one when his family are in trouble, using the app’s innovative check in feature. Family GPS Tracker also lets one see sex offenders in his area. One can track anyone from kids, dogs to babies. The app is specifically designed to families to locate each other.

An example of this would be the My Police Department (MYPD). The My Police Department (MyPD) app initially launched in 2011 for Android and iPhone, the app and its partner agencies have been featured in various publications and news agencies. The MyPD app is free to download and does not require you to sign in or sign up to use the app.

Figure 6: MYPD: My Police Department Interface

An example of this would be the FireAlert 2. FireAlert 2 is the further development of the now for more than two years successful SMS/MMS alarm app for Android. It is the perfect solution for Firefighters and other professions where missing a text is not an option! It makes your mobile working like a pager. Beside the rescue organizations, you can use FireAlert 2 to monitor server and control systems.

Figure 7: Fire Alert 2
An example of this would be the nearest hospital. Nearest Hospital is a powerful application to find the nearest Hospital of your location. App features: The app uses GPS technology, The app supports all countries and all languages, The app sorts the Hospitals by the nearest one, The app calculate the distance between your location and nearest Hospital, The app uses Google maps to show the Hospital location, The app supports Roadmap, The app draws path on the map between your position and the nearest Hospital.

TECHNICAL BACKGROUND

Technicality of the project

The Web and Android Based Philippines Emergency Quick Response Portal allow the users to access in the collection and storage of emergency hotlines. The specific users can make a call to the emergency hotlines clearly, accurate, timely communication to ensure informed decision-making related to the victim condition. Nowadays, cellular phones have become a necessity for people. Not that they can’t live without it but life would definitely be easier and convenient with cell phones.

The Android Based application of this project will make the future system easy-to-access emergency hotlines and user friendly in a way that it will give convenience to the users in terms of accessing emergency hotlines. With this, the proponents aim to develop a Web and Android Based Philippines Emergency Quick Response Portal that will allow the users to access the emergency hotlines in the nearest location of emergency response units.

To make this thing work out, the proponents need to make an application that will be based on mobile.

So how will the Emergency units trace their victim/concerned citizen? Simple, the proponents will create a web application for them to easily do it over the internet. They can view the location of the victim/concerned citizen.

In order for it to be implemented, the proponents will use various development tools in the proposed system.

At present, the industry-leading android development tool is the Eclipse software development kit (SDK), enabling users to design efficiently and develop a standard-based for androids application. With these features of Eclipse, the proponents decided to use this software for the implementation of the Web and Android Based Philippines Emergency Quick Response Portal.

Details of the technologies to be used

There are three parts that contribute to the proposed system. These are the software, hardware, and people ware.

SOFTWARE

It refers to all computer instructions in general, or to any specific set of computer instructions.

Adobe Photoshop

The adobe Photoshop is a graphics editing application popular for its extensive amount of features. Photoshop is also, currently, the leading graphics editing application. It helps the proponents design the layout of their system.

Notepad++ v6.4.5

It is a text editor and source code editor that will help proponents edit text and programming language source code files. It aims to be a lightweight and robust editor for a variety of programming and scripting languages. One advantage of Notepad++ over the built-in Windows text editor Notepad, is that Notepad++ supports tabbed editing, which allows working with multiple open files. The proponents can use this to get an idea of where to put navigation, menus, pictures, etc.

SQLite

The proponents will make use of SQLite as database management system for mobile. SQLite is a relational database management system (RDBMS) that runs in a server environment by providing multi-user access to a number of databases.

PHP 5.3

It is a server-side scripting language designed for web development but also used as a general-purpose programming language. PHP code is interpreted by a web server with a PHP processor module, which generates the resulting web page: PHP commands can be embedded directly into an HTML source document rather than calling an external file to process data. It has also evolved to include a command-line interface capability and can be used in standalone graphical applications.

ECLIPSE

It is a multi-language Integrated development environment
IDE) comprising a base workspace and an extensible plug-in system for customizing the environment. It is written mostly in Java. It can be used to develop applications in Java and, by means of various plug-ins and other programming languages. The Eclipse software development kit (SDK), which includes the Java development tools, is meant for Java developers. Users can extend its abilities by installing plug-ins written for the Eclipse Platform, such as development toolkits for other programming languages, and can write and contribute their own plug-in modules.

WAMP SERVER 3.2
It is a form of mini-server that can run on almost any Windows Operating System. WAMP includes Apache 2, PHP 5 (SMTP ports are disabled), and MySQL (phpMyAdmin and SQLite-manager are installed to manage your databases) preinstalled.

HTML
It is the main markup language for creating web pages and other information that can be displayed in a web browser.

JavaScript
It is an interpreted computer programming language. As part of web browsers, implementations allow client-side scripts to interact with the user, control the browser, communicate asynchronously, and alter the document content that is displayed. It has also become common in server-side programming, game development and the creation of desktop applications.

HARDWARE
The requirements of the hardware are the following: the minimum requirements on the hardware will be a computer set with Intel Core 2 Duo - 1.86 GHz and 2GB of RAM, running Windows XP or higher version of Windows OS, and a hard drive of at least 100 GB.

PEOPLEWARE
They are the users of the system. The users of the system are the administrator and the general public and emergency units. The general public also referred to as mobile phone users the administrator has to sign in using username and password in the portal. They are allowed to manage specific number of emergency response units while the general publics are not. While the Emergency units they can view the location of the victim/concerned citizen.

ADMINISTRATOR
This person has the full access of the entire portal. He/She manages user accounts of all client.

GENERAL PUBLIC
This person is not allowed to delete any numbers in the android apps. They are allowed to download the android apps for free in the portal.

Methodology

Requirements Specifications
It is in this part that a complete description of the behavior of a system is developed and the interactions of the users with the software are also described. It is also in this section that a comprehensive description of the intended purpose and environment for the study to be developed is done.

Requirements specification in systems engineering and software engineering is the direct result of a requirement analysis and can be referred Software Requirements Specification, Hardware Requirements Specification or both. A good requirements specification defines all necessary requirements for project development to be able to derive the requirements the proponents need to have clear and thorough understanding of the system to be developed.

In this sector a clearly and precisely definition of what the logical requirements is made, in such a way that it is possible to test the finished system to verify that those needs have actually been met. The point is to ensure that the needs are correctly defined before time, money and resources are not wasted working on the wrong solution. Typically, writing formal requirements specification is the final step in the analysis phase of the system development life cycle.

In this system we more adopt the needs of the users using the application that can be made in the ADT (Android Development Toolkit). This system can be easy to generate through the use of the application we implemented. Requirements specification is the initial product development phase in which information is gathered about what requirements are needed.

Operational Feasibility
The Figures 7, 8 and 9 illustrate the Fishbone Diagram reflecting the operational feasibility project.

The machinery is made up of devices that will be very necessary in making the system truly functional, effective and efficient. The only thing needed in the Online based modules for admin and users is a server computer that will serve all user requests while in the mobile application an Android phone would be enough.
The manpower is composed of people who will be the end-users of the program. It is a need that the users should be knowledgeable of the said system. Thus, only the Administrator is authorized to use the said application illustrated in figure 7. The same is true in figure 8 the user is also free to do whatever he wants to do, to detect nearest location of emergency hotlines.

The materials are the tools that the proponents will be using in order to implement the system, PHP and WAMPSERVER, Javascript, HTML and CSS will be used in the online-based application of SagipPinoy while Java and SQL Lite would be used in its mobile application.

The method is the event when the objective is fully implemented.

The Management in terms of SagipPinoy online application would be all up to the administrator. The administrator oversees the performance of the system as well as the users. They make certain that there will be a systematic monitoring and evaluation of the various aspects of the system and personnel to ensure the standards of quality are being met. Management in terms of SagipPinoy online application for would be all up to the user to manage their accounts. Same would be true to SagipPinoy mobile application it would also be all up to the users.

Functional Decomposition Diagram
It is a top-down representation of a function or process by which a complex problem or system is broken down into parts that are easier to understand. Figure 10 shows the functional decomposition of SagipPinoy.
Technical Feasibility

It is the process of proving that the concept is technically possible. It considers the technical requirements of the proposed study. The technical feasibility is carried out to determine the availability of technology and resources such as hardware, software and manpower.

The Quick Response System is an android implementation which mainly intended for people needs help in an android smart phones. It aims to confirm that the system will perform effectively and efficiently.

This study is a web and an application that can help users emergency cases. In order to have this application one should first register an account to the portal and then he/she can easily download it from the portal. An android phone can stored the application and when he/she is in a big trouble or a concerned citizen then he/she may just click the application and then may find the nearest location of the emergency units at that place. The storage capacity depends on the requirements of the organization such as the:

1. Input device which can enter input/store large amount of data in effective time
2. Output devices which can produce output in a bulk in an effective time
3. The choice of the processing units depends on the type of the processing required in the system.

Technology needed:

1. Mobile phone for the storage of the application
2. Internet connection for downloading the installer

Schedule Feasibility

As for the schedule, proponents will conduct some interviews to the emergency units involved in the unnecessary happenings such as emergencies. Since they are putting up a start up business then they will take for about how many months to finish this system. Since this is just a documentary stage then make it happen. It is also unlikely of the project to be completed by the due date or completion date.
Requirements Modeling
This chapter presents the requirements, the structure and design of the study. The purpose of the study is to help users to have a quick response from the emergency units. The functional requirements are to locate nearest emergency units and help users to call for any help and achieve quick responses. In a requirements modeling, the Input-Process-Output (IPO) model is needed to illustrate the inputs and the processes it will take to come up with outputs.

IPO for Mobile Application

1. INPUT : User coordinate
2. PROCESS : The application will detect the nearest emergency units
3. EXPECTED OUTPUT : View the nearest emergency hotline.

If the application process is successful, it will show the nearest location of the emergency units.

Performance

1. The application will detect the nearest location of the emergency units.
2. The icon of the application is not hidden from the main application list of the android phone.

Control

1. To access the web application, they will need an account.

IPO for Web Application
To access the web application, they will need an account. An IPO model is shown below.

IPO model in Web(Table 3)

1. INPUT : The administrator or client enters his account details on the web application form
2. PROCESS : The web application will validate the account
3. EXPECTED OUTPUT : If the account is valid, the web application will then redirect the user to its corresponding dashboard. If not, then a message will be displayed to notify the user

The web application performs some operations with administrator or users consent. It will have some controls of data manipulation.

Performance

1. The web application automatically fetches the data sent by the users.

Control

1. If users search for information, the web application will only fetch the data that are post by the administrator.

Object Modeling

Use Case Diagram

Figure 14: SagipPinoy:Web Application Use Case Diagram

Figure 15: SagipPinoy:Web Application for Admin Use Case Diagram
**Activity Diagram**

Activity Diagrams are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. Shown below are the Activity Diagrams of the study.

**User-Interface Design**

User-interface requires a good understanding of user needs. There are several phases and processes in the user interface design, some of which are more demanded upon than others, depending on the project. The proponents have prepared few of the possible user interfaces of the proposed system and the user if the objectives of the study would be fully implemented. Figures below show the interface when opening the mobile application.

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Figure 16: SagipPinoy: Web Application for Admin Use Case Diagram

Figure 17: SagipPinoy: Web Application for User Use Case Diagram

Figure 18: SagipPinoy: Web Application for Emergency Unit Use Case Diagram

Figure 19: Activity Diagram of the Web Application

Figure 20: Activity Diagram of Mobile Application

Figure 21: SagipPinoy Mobile Application for User Interface
If the users click the application then the figure 18 will be shown to the user. When the user click menu icon figure 21 show the selected emergency hotlines. Figure 22-24 shows the nearest location emergency units.

Figures below show the interface when opening the application by sign-in in the portal.
If the users have not been registered to SagipPinoy then figure 25 will be shown to the user. If it is the other way around then the login interface will be shown to the user just like figure 26. After verifying the Log in information then figure 27 will be shown to the users, the user/concerned citizen should download the application. Figure 28 shows the user/concerned citizen view information of the emergency units. Figure 29 shows the emergency units dashboard.

Data Design
Designing data is about discovering and completely defining the applications data characteristics and processes.

Entity Relationship Diagram

Data Dictionary
A data dictionary is a centralized repository of information about data such as meaning, relationships to other data, origin, usage, and format.

Web and Mobile Data Dictionary
### user

<table>
<thead>
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<th>Description</th>
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<tbody>
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### citizen

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### hospital

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<tr>
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### fire_station

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<td>Unit Identification number</td>
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<tr>
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<td>Fire latitude</td>
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<tr>
<td>fire_lng</td>
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</table>
The android phone needs a network operator to send location details to the server or connecting directly to the internet service provider and wireless router. When connected, the phone can send location details through call to the server and the server sends back a response to the mobile phone.

**Development**

**Program Specification**

**List of Modules**

<table>
<thead>
<tr>
<th>Module</th>
<th>Admin</th>
<th>User</th>
<th>Emergency Units</th>
<th>Web-based sub-system</th>
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<td>Longitude</td>
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**LIST OF MODULES(TABLE )**

<table>
<thead>
<tr>
<th>Modules</th>
<th>User</th>
<th>Emergency Unit</th>
<th>Mobile Based sub-system</th>
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</thead>
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<tr>
<td>Broadcast location details</td>
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<td>Emergency Tips</td>
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</tr>
<tr>
<td>Locate Victims Area</td>
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<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Send notification</td>
<td>✓</td>
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</table>
Software Specification

In developing the system, the proponents will use Windows 7 Ultimate 64-bit as the operating system. The programming language that they will use for developing the mobile application is Java, and for the web application, it will be PHP version 5.3.

Talking about the database, WAMP SERVER version 2.2 will be used as the database of the web application and SQL Lite for the mobile application.

Writing android application is hardly done with simple editor alone, so the proponents will need Eclipse IDE (Integrated Development Environment) for developing the mobile application easier. For the web application, Notepad++ v6.4.5 will be used in creating and editing the PHP files.

For the administrator and the clients, they will only need a browser to use the web application and download for the installer like Mozilla Firefox, Google Chrome, Internet Explorer and others. For the clients, they will need an android version 2.3.x to use the mobile application.

Hardware Specification

The hardware specification deals with the tangible components of the computer, as distinguished from the software that contains and provides instructions for the hardware to achieve its tasks.

To make the mobile application run, the user needs to have a mobile phone running on an Android platform version 2.3.x with a minimum of 256MB of RAM.

The minimum hardware requirements that the proponents need to have to implement the system is listed in table 1. For the administrator and clients, they will need to have a computer set connected to the internet in order to use the web application. Any computer set with internet connection can be used.

The proponents need a web server, on where the application will send the client’s data, and where the clients can remotely manage their phones. The minimum requirement for the server is listed on table 13 and 14.

Deployment Diagram

Figure 35: Deployment Diagram

Testing

Test Data
Test data is the data that is used in testing a software system. In order to test a software application one need to enter some data for testing most of the features. Any such specifically identified data which are used in tests are known as test data.

The proponents need to prepare several test data to test the software after it has been fully implemented. The usual test data the proponents used will be the contacts of emergency units. With this test data, the feature of the application will be tested.

Integration Testing
Integration testing needs to be done by the proponents since there are 2 modules in their system and it is in this phase in which individual software modules are combined and tested as a group. It occurs after unit testing and before validation testing. Integration testing takes as its input modules those that have been unit tested, groups them in larger aggregates, applies tests defined in an integration test plan to those aggregates, and delivers as its output the integrated system ready for system testing.

Load Testing
It is the process of putting demand on a system or device and measuring its response. Load testing is performed to determine a system’s behavior under both normal and anticipated peak load conditions. Load testing also needs to be done by the proponents to test if the server can handle multiple requests at a time.

Stress Testing
Stress testing is the process of determining the ability of the application or device to maintain certain level of effectiveness under unfavorable conditions. Like the server might not work properly. Through this, the proponents can test if the server can still perform normally.
Conclusion
This study focuses on creating an application for the emergency units to respond and for the ordinary users to ask for a help. The study is used for helping ordinary users through the use of their android phones and for the emergency units to respond the ordinary users. SagipPinoy offers a free registration to be used by the ordinary users and to the emergency units. The researchers believe this study provides secured and reliable applications to be used by the emergency units and ordinary users.

Recommendation
We recommend to the people who are involved to accidents or to those people who make sure their safeties. They will generate their location reports and view the map.

Acknowledgement
To Jesus Christ, our Lord and Savior, for giving the wisdom, strength, support and knowledge in exploring things; for the guidance is helping surpass all the trials that the researchers encountered and for giving determination to pursue their studies and to make this study possible.

This research is lovingly dedicated to our respective parents who have been our constant source of inspiration. They have given us the drive and discipline to tackle any task with enthusiasm and determination. Without their love and support this project would not have been made possible.

The researchers would like to express our sincere gratitude to our adviser Emilie Villaceran for the continuous support of our IT 415 study and research, for her patience, motivation, enthusiasm, and immense knowledge. Her guidance helped the proponents in all the time of research and writing of this thesis. We could not have imagined having a better adviser and mentor for this research.

We would like to thank the following teachers who gave their time and efforts to correct our research documents; To Mrs. Mencho Montezon our grammarian who check the grammar properly and to Mr. Jerson Maglasang our database consultant.

The researchers thank our fellow colleagues in University of Cebu, for the stimulating discussions, for the sleepless nights we were working together before deadlines, and for all the fun we have had in the last two months.

Keywords: Information technology, Emergency portal, Philippine portal, Disaster portal

References


@mdo and @fat. Bootstrap. Retrieved August 26, 2013 from http://www.bootstrap.stage42.nets